FACTORS RELATING TO THE SUCCESS OF ISO 9000 IMPLEMENTATION AT NURSING COLLEGES OF PRA-BOROMMARAJANOCK INSTITUTE, MINISTRY OF PUBLIC HEALTH

BAMPEN PHONGPHETDIT

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The purpose of this research was to study factors relating to the successful management of ISO 9000 implementation between 3 April - 30 April 2000 at 35 nursing colleges of Pra-borommarajanock Institute, Ministry of Public Health. Subjects were divided by ISO 9000 implementation into a success group (n = 31), a processing group (n = 44) and a non ISO 9000 implementation (n = 50). In-depth interviewing and questionnaire concerned personal characteristics, processing system, organizational structure, information technology utilization and environmental conditions. Chi-square analysis and discriminant analysis were used in this study.

The findings of this study showed that structural factors concerning to the operational/job planning had the highest association. And, when the reasons for ISO 9000 implementation were analyzed, it was discovered that the first reasons was due to a need for a systematic working, secondly, they agreed that ISO is one of evident system with a presence of clarify document. All these are considered as concerning with the planning process at a level of significance of 0.05. The finding derived from a discriminant analysis of the groups with success of ISO implementation and processing group with nonsuccess of ISO implementation. As it was discovered that job/operational planning had a maximum discriminant function, while leadership characteristic is the second.

This research finding provide a significant basic data for recommendation on Planning, managing, operation and organizational development leading to adjustment and change in order to stimulate a continuous development to cope with national educational situation and existing world.

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บำเพ็ญ พงศ์เพชรดิถ : ปัจจัยที่มีความสัมพันธ์ต่อสัมฤทธิผลของระบบคุณภาพ ISO 9000 ของคณะผู้บริหารวิทยาลัยพยาบาลในสังกัดสถาบันพระบรมราชชนก กระทรวงสาธารณสุข (FACTORS RELATING TO THE SUCCESS OF ISO 9000 IMPLEMENTATION AT NURSING COLLEGES OF PRA-BOROMMARAJANOCK INSTITUTE, MINISTRY OF PUBLIC HEALTH) คณะกรรมการควบคุมวิทยานิพนธ์ : ชัยวัฒน์ ปัญจพงษ์, Ph.D., ดุษณี สุทธปรียาศรี, Dr.P.H., ประสิทธิ์ ทองไสว, Ed.D., ศิรวิทย์ กุลโรจนภัทร, Ph.D., 221 หน้า.
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การวิจัยมีวัตถุประสงค์ที่จะศึกษาถึงปัจจัยที่มีความสัมพันธ์ต่อสัมฤทธิผลของระบบคุณภาพ ISO ของคณะผู้บริหารวิทยาลัยพยาบาลในสังกัดสถาบันพระบรมราชชนก กระทรวงสาธารณสุข โดยศึกษาจากวิทยาลัยพยาบาล 35 แห่ง ระหว่างวันที่ 3 เมษายน – 30 เมษายน 2543 กลุ่มตัวอย่างแบ่งเป็น 3 กลุ่ม กลุ่มที่ 1 คือ กลุ่มที่จัดทำระบบคุณภาพ ISO เสร็จสิ้น (n = 31) กลุ่มที่ 2 คือ กลุ่มที่กำลังดำเนินการจัดทำระบบคุณภาพ ISO (n = 44) และกลุ่มที่ 3 คือ กลุ่มที่ไม่ใช่ระบบคุณภาพ ISO (n = 50) เครื่องมือที่ใช้เป็นแบบสัมภาษณ์เจาะลึก และแบบสอบถามเกี่ยวกับปัจจัยด้านบุคคล ปัจจัยด้านการดำเนินงาน ปัจจัยด้านโครงสร้างองค์การ ปัจจัยด้านเทคโนโลยี และปัจจัยด้านสิ่งแวดล้อม สถิติที่ใช้ในการวิจัยครั้งนี้ใช้ Chi-square analysis และ Discriminant analysis

ผลการวิจัยพบว่าปัจจัยด้านโครงสร้างองค์การในด้านการวางแผนการดำเนินงานมีความสัมพันธ์กับการใช้ระบบคุณภาพ ISO โดยเหตุผลของการใช้ระบบคุณภาพอันดับแรกคือต้องการทำงานให้เป็นระบบ อันดับสองคือระบบคุณภาพ ISO เป็นระบบที่มีระบบเอกสารที่ชัดเจนซึ่งผลจากการวิเคราะห์พบว่า การวางแผนการดำเนินงานมีความสัมพันธ์กับการใช้ระบบคุณภาพที่ระดับความมีนัยสำคัญทางสถิติที่ 0.05 สำหรับการวิเคราะห์ความสำเร็จด้วยสถิติ Discriminant analysis ของกลุ่มที่จัดทำ ISO เสร็จสิ้นสำเร็จและกลุ่มที่กำลังดำเนินการจัดทำ พบว่าการวางแผนการดำเนินงานเป็นตัวแปรที่มีความสามารถในการจำแนกมากที่สุด ลำดับรองคือ ผู้นำ

ผลการวิจัยนี้เป็นเพียงข้อมูลพื้นฐานในการเสนอแนะเกี่ยวกับการวางแผนงาน การจัดการ การมีส่วนร่วมและการพัฒนาองค์การ เพื่อนำไปสู่การตัดสินใจและการเปลี่ยนแปลงในการพัฒนาองค์การอย่างต่อเนื่อง จนถึงระดับประเทศและโลกต่อไป

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CHAPTER I

INTRODUCTION

1. Background & Significance of the Problem

The nurse is well recognized as a significant profession with a major responsibility of delivering health services to the people. So far as we know, this kind of task is certainly concerned with a number of human lives and widely accepted as a crucial process of which requiring both sciences and art techniques. Consequently, any assigned professional organizations are needed to be involved in providing a guaranty and issue of professional licenses. In case of the most who are capable to work as a nurse, it is a must for them to be given such a nursing license issued by the nursing council only. As the nursing council is indispensable to be functioning on providing care and must pay a special attention to monitoring and evaluate whatever activities of such academic institutions where nursing curriculum are organized there. At the same time, offering a standardized assurance to nursing institutions which is called **"Accreditation"** is also demanded by the council. This guaranty needed to be periodically renewed through the application of auditing process as identified in the agreement. Of a widely extension and minimum standard of accreditation that could reflect such a future status and development feasibility of each institute as well (Uraipan Chenwanichayanon, 1998 : 1). In addition to this, accreditation has never declared what the extensive potentiality of each institute or comparing the quality of their services. It only indicated a minimum standard of services that various institutes could passed or only illustrated their capability on maintaining activities as one of academic institutes. So far, the accountability of nursing council is rather more focusing on assessment of institute's activities as a whole and generally but never look at their specific responsibility or identify about knowledge, capability and learning success of graduates. While these indications are recognized as very important to

certify the academic excellency or quality of those institutions as well (Uraipan Chenwanichayanon, 1998 : 1).

Beyond many years of duty handling by the nursing council, such the approvals of accreditation to ensure and certify various academic institutes whether they were already up to the standard. Certainly, nursing institutes of which affiliated to both governmental and private sectors were included. Under her major performance, the nursing council has made a strong effort on monitoring and assessing whatever activities carried out by those nursing institutions. As for the governmental institutes are composed of universities and nursing colleges affiliated to Pra-borommarajanock Institute, Ministry of Public Health. They have been organizing such the three major curriculums in nursing sciences which are diploma program, bachelor degree of 4 years study, and continuing education for bachelor degree (2 years study) programs. Since and then, all of the graduates would have been sent to serve the need of hospitals under the Ministry of Public Health for more than fifty years with a number of production averagely 4,000 nurses per year (Vipan Wattanacheep, 1997 : 1). Appreciatively, these graduated nurses could apply their knowledge and experiences gain from the college together with professional license certified by nursing council for effective working at both governmental and private hospitals. Therefore, such an advanced curriculum managed by the nursing college has a particular attention to respond the need of hospitals only. Until there was a change of policy as it determining the nursing colleges of which affiliated to Pra-borommarajanock Institute to be a joint institutes of some governmental universities with a special aim to deliver academic degree as well. By this way, the nursing colleges were upgraded until possessing the same educational level to other universities. At the time when the Ministry of University Affairs announced a particular policy pertaining to the implementation of educational quality assurance system since 8 July, 1996 as well as having identified a perceived goal of quality assurance for all in the year 2002. Consequently, Pra-borommarajanock Institute also announced its own quality policy as **"build up a perfect man, build up values, and quality development"**.

The major points of this policy are as follows;

1. Implementation of education with emphasizing on a production of quality graduates, therefore this could result to the delivery of correct and quality services.
2. Promotion on educational development until being universally acknowledged.
3. To bring about the same quality of graduates.
4. Most of the colleges are capable to widely develop their body of knowledge.
5. Having a definite system of educational quality assurance with its quality grown up.

Certainly, the policy written by Pra-borommarajanock Institute is absolutely conformed to the Ministry of Public Health's policy. As it clearly stated that all of the nursing colleges affiliated to the Ministry of Public Health must be acquired for the implementation of educational quality assurance by the year 1998. Thus, the nursing colleges need to use a definite mechanical approach for controlling the quality of various significant educational substances of which starting from the inputs upto a finished products or graduates. This way of operation is to ensure the quality of health manpower production and could lead to the quality of health services delivery for all people with an emphasis is placed on human-centered development. The eighth National Social and Economic Development Plan indicates that allowed all the colleges have the autonomy in developing such a quality assurance system starting from the preliminary until reaching the international educational standard. Besides, the colleges have been providing with the opportunity for transferring and exchanging knowledge, information, budget and other resources that will ensure quality colleges of the same standard (Prakrom Wuttipong, 1998 :1)

Empirically, all of the 35 nursing colleges affiliated to Pra-borommarajanock Institute received the policy on initiation of a quality assurance system, however each college is provided with autonomy to handle whatever a preferable quality assurance system. Whereas the existing problem is that what type of available system should be applied. Interestingly, the Ministry of University Affairs brought a new model in used that so called *"Quality Assurance (Q.A.)"* as it composed of 9 major quality elements, while the 23 sub-elements of Q.A system was selected and applied by a branch of nursing sciences (The Office of Higher Education Standard, 1999 : 2). Again, nursing colleges under Pra-borommajanock Institute's mandate, agreed to follow the Ministry of Public Health's policy by joining together for establishment of network with aiming at the exchange of knowledge and information. Then, this kind of net work under the utilization of Q.A system was implemented throughout the country; northern, central, north-eastern, eastern, and southern part of Thailand. Anyway after 1 year of operation, a quality manual was produced and brought in use as a guidance for development of any specific model of which quite suitable to each college. Another existing problem derived from the implementation of Q.A. system is a non-applicability of standard criteria in other networking areas. It is dued to the difference in administrative and implementation structure of each. As it can be seen that there are departments located in some colleges while the others had never, or otherwise some committee boards are from election but some are from appointed. In addition, other details concerning personnel, organization, and environments are also quite different. Absolutely, the goal of nursing college to attain the same educational quality and meet the international standard of services could not be achieved because of the existing obstacle. It is not only a lack of capability to manage and apply whatever appropriate system but also the differences of organizational implementation method used in each institute.

Currently, many of nursing colleges are trying to make an effort on operating such a Q.A. system. Since each started with a preparation of self-study instruction that is considered as very useful for examining what is a particular characteristic of her own organization. Afterwards, with an attempt to create a definite quality assurance

model that is conformed with the organizational structure of each institution. By this time, the department of educational development, Pra-borommarajanock Institute formed up a committee of quality assurance, then this committee were assigned to produce a neutral standard manual of which indicators and criteria of each element are illustrated. However, this manual must be in accordance with the Q.A. used by the Ministry of University Affairs. An adjustment of title was made, and another designation as "*Key Performance Indicator (KPI)*" was given. As a result, KPI was introduced to be implemented in various colleges as a pilot project which included 14 elements requiring a regular evaluation called "internal audit" from Pra-borommarajanock Institute itself.

Nowadays, a critical problem of the implementation of quality assurance in most colleges is that there are variety of systems such as 5S, Quality Assurance (Q.A.), Key Performance Indicator (KPI), Input Process Output (IPO), International Organization for Standardization, (ISO) and Total Quality Management (TQM). Each system has both strengths and cautions, therefore a careful consideration in choosing the most suitable system is required under a good cooperation of the administrator, quality assurance committee or other concerned persons. As they all together had to detect, gathering data, analyze and find out the best alternative by trial before an actual implementation of the selected system known as "Plan-Do-Check-Act (P-D-C-A)" (Woraphat Phoocharoen, 1998 : 5). This principle can be clarified as it comprises of 4 major processes; planning, trial, periodic checking and a systematic implementation that could produce tangible results of high working capacity and efficacy. Consistency in policy, good philosophy, workable objectives, sufficient resources existing in the colleges are extensively recognized as a needed input for effective implementation of quality assurance system.

Under the process of quality assurance implementation, the manager is considered as a significant person who must be involved in the whole process of Plan-Do-Check-Act, in order to find out the best alternative. These actions could bring about a gradual development of the quality assurance implementation. In various

colleges after receiving the accreditation from the nursing council, certainly they have had a self-study manual that could guide them to operate a quality assurance system starting from the initial stage and gradually progressed until reaching the international educational standard (Worapat Phoocharoen, 1998 : 6). Key Performance Indicator (KPI) is seen as a minimum standard of quality assurance by focusing at the outcomes. International Organization for Standardization (ISO) is one of the quality assurance system which requires a crucial investigation at its process. ISO system is quite useful in maintaining a constant quality of products or services as well as it can be gradually developed into the Total Quality Management (TQM). The operation of KPI is conformed to the ISO, and the errors would be corrected, even any institute has implemented TQM, then a competition with other external organizations or with different branches of academic institutions would be exercise.

There are many similarities of curriculum and learning process is found in most nursing colleges affiliated to Pra-borommarajanock Institute, however some differences also existed such as implementation procedure. This is because of all of 35 colleges are given a freedom to arrange their own teaching and learning activities. The implementation of quality assurance system in teaching and learning process, also target at consumers satisfaction and needs. (A Quality Policy of the Ministry of Public Health, 1998 : 1). It is unavoidable to pay a special attention to the existing condition and environment, by recording whatever activities already done, comparing with the set standard, and graduate adjusting the quality system till it is up to the standard. (Worapat Phoocharoen, 1998 : 4)

A high competition, particularly in the selection of study places. ISO is one of guaranty that enables the students trusting in the potential of any institutes. Such a quality and effective teaching and learning implementation of these educational institutions could attract most students' attention as well as to convince them to believe that they will be a qualified graduates and needed by the society. Moreover, the quality system like ISO 9002 is notified as a managerial tool that could bring about the satisfaction to customers who are graduate of students, students, hospital,

and funding sources. It dues to the quality system composed of much essential operational details such as need assessment, purchasing implementation, teaching and learning process, evaluation of the success of services after delivery indicated in the lists of specification.

Also, the ISO 9002 quality system is very effective in convincing the customers to have full confidence upon the services in term of;

1. A consistency and validity of quality teaching and learning implementation is regularly found with a definite regulation for preliminary quality control.

2. Its operation is very effective with a decreasing expense due to a presence of correct operational system is installed and organized in the whole process.

3. There is a continuous and systematic human resource development that could encourage the most of staff clearly understanding their role and function. This has also resulted to strengthen the working capability of all staff and bring about such a good intrasectoral cooperation.

4. The actual causes of problem are seriously detected, so that many errors could be identified rapidly with no repeat of the problems.

5. After a revision and correction of all errors, it is possible to ask for the accreditation from other external agencies.

Nowadays, all of 35 nursing colleges affiliated to Pra-borommarajanock Institute have to conduct a prior implementation of internal quality assurance system. With a freedom of operation, however the scheme of quality assurance system must be in an accordance with both the philosophy and objectives of each college. Crucially, some colleges showed their disagreement upon the implementation of ISO system. As they recommended this type of system is probably much more suitable for the industrial sectors in term of a production of goods, while human is indeed not goods. How can anyone dare to introduce such the ISO system to be applied with human being ? Anyway, when we turn back to look at the ISO's concept, it clearly explained that such a quality output is certainly derived from a good production process as well

as a focal point of the system is only its process with no force to fix at any definite type of process. It depends on each institute itself to outlining any specific process on the basis of ultimate goal for good production only. As a result, in case of nursing college in which are mainly functioning on implementation of nursing curriculum, so its determined process should be focusing on a good teaching and learning that bearing the college to gain the most of quality production likely to qualified graduates. In several famous educational institutions such as St. John school and Phayathai 1 school where the ISO system was successfully implemented. Moreover, some of the private nursing colleges was already accredited and announced on the ISO 9002. Hopefully, it is feasible to apply the ISO 9002 with nursing education under a crucial adjustment of both process and procedure that must be especially suitable for using with human being as well as on the basis of the innovative teaching and learning path. As it indicated that a production of graduates under the application of appropriate process will certainly gain a good quality graduates with capability to provide a quality services. When considering to the education of nursing college, a production process can be interpreted as a teaching and learning process. Supposing it could be well organized with a presence of evident and practical working procedure, of course the outputs will be only qualified graduates of the same standard as well.

Today ISO is broadly accepted as the international standard system and being one of the most popular model applied in America and in other more than 50 countries that included Thailand for a quality assurance purpose. However, in some countries also have their own standard system such as England has adopted the system so called BS 5750 while Canada has applied the CSA Z 229 (Sujarit koon-thanakulwong, 1996 : 5). In relation to this mentioned topic, Thailand is authorized in issuing the standard certificate for quality assurance of those interested organization. Consequently, the application of ISO system in academic institutions is trending to be increased when considering to the attention of different organizations as they agreed to join in the training programs conducted by the Office of Standardization for Production Industry. Afterwards, these organizations had attempt to make a request

for provision of the standard certificate. At the present time, many institutes are already given and certified the standard certificate for quality assurance.

Regarding to the above mentioned illustration, it can be concluded that the implementation of quality assurance system has been able to convince the most of customers to have full confidence in the quality of teaching and learning process particularly it can respond to the need of customers as well. Due to the achievement of a private nursing college concerning the successful implementation of the ISO 9002, therefore some of nursing colleges affiliated to Pra-borommarajanock Institute follow a good example of this quality assurance system. In practical, the college needs to write down whatever the existing process is going on. Afterwards, try to reorganize and compare its operation with the standard as set Further implementation with continuously rectify the way of implementation must be carefully done as well. By this way, a standard of working will be occurred at a satisfied level while a gradual development of a manual work is still needed. Once the certificate for internal quality assurance is awarded, such a competition with the other professions is probably determined.

Evidently, there are another factors affecting to the occurrence of problems regarding implementation of quality assurance system, those are social and economic factors. Besides, other concerned organizations of which being providing support or giving the advice and useful information for a presence of consistent perception are also included as one of the influencing factors.

According to the different matters as mentioned, the achievement of quality assurance implementation under the application of ISO 9002 is absolutely depended on various factors; demographic, organizational structure, implementation of working system, environment, and technologies.

After reviewing all concerned studies to the implementation of quality assurance system, it could be seen that this type of study was very rare, while it

discovered only the study on usefulness of quality control implementation towards the improvement of working efficacy. Or otherwise in term of the standard of a manual work when considering at the amount and quality of the outputs.

As a result, the researcher has aimed to study on the factors associated with the success of ISO system implemented by the college's committee. In addition to this, reasons for utilizing or not utilizing the ISO system is also investigated. Hopefully, this study will be useful as a source of information and guideline for other concerned organizations whether they will be agreed to apply the ISO system in their own settings.

2. The Objectives of Study

2.1 To examine the relationship between personal factor, structure factor, working system factor, technology factor, environments factor, and the implementation of quality assurance system functioning by the committees from nursing colleges affiliated to Pra-borommarajanock Institute. And to determine the reasons of the committee from nursing colleges affiliated to Pra-borommarajanock Institute., Ministry of Public Health regarding the utilization and non-utilization of the ISO 9000 system.

2.2 To examine the relationship between personal factor, structure factor, working system factor, technology factor, environments factor, and the success of ISO system when functioning by the committee from nursing colleges affiliated Pra-borommarajanock Institute., Ministry of Public Health .

3. Research Questions

3.1 What are the factors relating to the implementation of quality assurance system functioning by the committee from nursing colleges affiliated to Pra-borommarajanock Institute., Ministry of Public Health and what are the reasons of the committee from nursing colleges affiliated to Pra-borommarajanock Institute,

Ministry of Public Health regarding the implementation and non- implementation of the ISO 9000 system ?

3.2 What are factors that associate with the success of ISO 9000 system operation ?

4. Hypotheses

4.1 Personal factor, structure factor, working system factor, technology factor, and environments factor all are associated with the implementation of quality assurance system functioning by the committee from nursing colleges affiliated to Praborommarajanock Institute.

4.2 Personal factor, structure factor, working system factor, technology factor, and environments factor all are associated with the success of ISO system operation when functioning by the committee from nursing colleges affiliated Praborommarajanock Institute, Ministry of Public Health.

5. Scope and Limitation of the Research.

The limitation of this study was set by the researcher as followings;

5.1 Only the group of committee from nursing college affiliated to Praborommarajanock Institute who have been implementation or not implementation the ISO system would be studied.

5.2 Committee from nursing college affiliated Pra-borommarajanock Institute are divided into 2 groups as follows;

5.2.1 A group of committee by election in 2000

5.2.2 A group of committee by appointment in 2000

When the way to implement the ISO system including a formulation of policy and administrative orientation of the college is mostly directed by the committee, therefore the opinions derived from each institution can be used as a guideline for the further implementation as well.

6. Preliminary Assumption

6.1 To include only the college with an existing selection and operation of quality assurance system

6.2 The colleges with a presence of similar structure

6.3 Time and date of answering the questionnaires has no affect to the opinions given by the college's committee

7. Definitions

The college's implementation committee refers to all instructors, government officials, appointed or elected personnel who are involved in the implementation task of the college during a period of data collection that is from April up-to May in 2000.

Implementation of the quality assurance refer to of quality system divided in two groups are non - implementation of ISO system and implementation of ISO system.

Non- implementation of ISO system refers to an implementation, on-going or processing involvement of the colleges in the quality assurance project under the application of any quality assurance systems except the ISO system.

Implementation of ISO system refers to an success of ISO system, on-going or processing implementation or involvement of the colleges in the quality assurance project under the application of ISO system only.

Success of ISO system refers to the procedure on implementation of ISO quality assurance system by following all specified process until receiving the standard certification from the authorized agency such as the office of Thai Industrial Standards Institute (TISI).

Personal factors refers to individual factors that composed in each personal of the committees are working time, position cooperation, problem solving decision making leadership and values.

Workingtime refers to a period to perform a duty in any institutes or nursing colleges when counted by years of performance.

Position refers to an academic position of any personnel such as chief of departments, instructors who are working in nursing college as well as they are appointed or elected to handle whatever activities for the achievement of task according to objectives as set.

Cooperation refers to the opinion levels about a provision of cooperation, assistance and attempt to perform and follow the regulations of nursing college. Also to involve in a variety of activities concerning a quality assurance system implementation by considering to the scope of cooperation and responsibility as identified.

Problem solving refers to have ability and of problem solving used by the committee of nursing college. As they comprised of problem analysis, detection of alternatives, selection of the most proper solution method, and implementation of the selected solution.

Decision making refers to the conceptualization and performances of the nursing college's committee that enabling them to make a decision for selection of any alternatives, however a decision must be made on the opinion levels about the basis of broadly agreement and capable to reduce such a conflict.

Leadership refers to the opinion levels about leadership that required by the college's committee. As it means to the specific characteristics in term of physical, social background, intellectual, knowledge, capability, personality, a nature concerning their task, social aspects concerning the information recognition, the chief and relationship between leader and follower.

Values toward institution refers to the opinion levels about the way of thought of committee as well as it can reflect what are their feeling and behavior. With widely illustrated their determined goal of life. Therefore, the values is an indication of broaden performance that could guide the committee how to perform their task on the basis of love and bond with the institution.

Working system factors refers to opinion levels about regulations, academic matters and other activities under the accountability of nursing college.

Significantly, the relationship among all these elements is needed without isolation. As well as, it can be measured by considering to the relationship between variables concerned with working mechanism of any organizations that is communication, directing, monitoring and control including budget.

Communicating refers to have enough information connection and consultation between staff of one nursing college or between colleges. This probably exposed as a network by using different approaches such as talking, writing and signals which are considered as a tool for communication. Accordingly, any opinions can be transferred to other persons for their information.

Directing refers to a situation that the committee make use of their capability in facilitating their subordinates to work effectively. As it can be measured by considering at the manner of committee when they delegate the duties and authorities to their subordinates who are working in the nursing college including a provision of facilities for effective performance.

Controlling refers to the performance of committee regarding a revision or correction of activities to be agreeable to the prescribed objectives and goal by emphasizing on controlling of working process and behaviors of the college's staff.

Budgeting refers to enough the amount of money that was approved and planned to be spent for any expenses concerning the operation of quality assurance system of the college.

Structure factors refers to the opinion levels in the arrangement on combining the working groups according to the objectives or obligation as set with an existence of line of command. This type of structure could be affecting to a routine work stride forward to reach the goal of each organization and also helping to eliminate such an ambiguity and uncertainty of functions as well as it could bring about a good cooperation. As a result, the organizational structure should be set up on the basis of a reasonable administration particularly in term of planning and sharing of responsibility.

Planning refers to have the planning process under the responsibility of nursing college, while both one year and five years plan must be formulated with a clarification on what is a working scheme, when is the operation started, how is the

operation going on, and who is the working team. Besides, a trial and testing for knowing the most applicable pattern of actual implementation of the quality system must be performed as well.

Empowerment refers to have an allocation of responsibilities according to positions or a described obligation deal with the quality assurance activities of the college.

Sharing of responsibility refers to have a divide of works according to skill of each personal factor by proportion, so that he/she has to handle his/her duty throughout the period of quality system implementation or until attaining to the perceived goal as set.

Technological factors refers to the utilization of computer and different kinds of media with aim to deliver and receive information both inside and outside college. Others media to be used for development of teaching and learning activities and for a presence of appropriate quality system are also included.

Environmental factors refers to all circumstances around the college or organization such as hospitals, school, communities which is vary or changing according to the socio-economic condition including other concerned organizations.

Economic condition refers to the opinion levels of the committee about the economic situation compare with other colleges, hospitals that was taken into consideration for a promotion of ranking, a raise of salary and cost of living of the people.

Social condition refers to the opinion levels of the committee about the situation that a number of people are living together in the college or outside especially in other nursing colleges as they are showing their cooperation in working, giving opinions, and providing a mutual help.

Other organizations refers to a variety of organizations in Ministry of Public Health or institutions of which mostly involved in making a contact and transfer of information otherwise they cooperated each others that included such as non-government organization, hospital and so on.

8. Usefulness of the study

Regarding to the study on implementation of a quality system by using a survey technique for gathering data from nursing colleges affiliated Praborommarajanock Institute, then all the answers dealed with the utilization and non-utilization of ISO system are responsed from the executive committee. So far this study aimed to investigate both causes and effects pertaining the utilization of ISO system or other existing systems. The usefulness derived from this study can be identified in three aspects as follows;

1. Practice : The finding of this study illustrated whatever factors such as personal factor, working system, organizational structure, technology, and environment factor that could be associated with the success of ISO system. Also the reasons to select or ignore the ISO system was detected for using in planning and reorganize the system. In addition, the ISO system will be developed at faster pace and with decreasing time of implementation through the application of this finding.

2. Academic: This research can be used as a guideline for studying what the extent of quality assurance system and for further development of the quality assurance system as well.

3. Research: It can be seen that a very few researches concerning the quality assurance system had been conducted. So, this study is probably useful for anyone who want to review about the implementation of such a quality system or otherwise it can be used as a basic information for further studies.

CHAPTER II

LITERATURE REVIEWS

There are some researches concerning the factors that relate to the success of using ISO quality system in educational quality assurance of Nursing Colleges under Pra-borommarajanock Institute, Ministry of Public Health. These documents and researches involved are as the followings;

1. The importance and necessity for having quality assurance
2. Types of quality assurance system
3. Related theories about the selection of quality assurance systems
4. Related researches about the selection of quality assurance systems
5. Concept development in research

The details are as followings;

1. The importance and necessity for having quality assurance

In the past, Ministry of Public Health had major tasks to provide public health services to people in the nation. The tasks required a large number of human resources to provide public health services in every aspect and to reach all classes of people. According to this reason, Ministry of Public Health has a duty to produce and develop human resources in health field to respond to the demand for the health service system of the country. (Vipan Watanacheep, 1999 : 1)

Producing nurse is one task that Ministry of Public Health has operated in terms of educational implementation by Nursing College for more than 50 years. At present, Pra-borommarajanock Institute is the producing and monitoring unit of human resources of the Office of the Permanent Secretary for Public Health in health field and this institute has 42 colleges under supervision. For those colleges, there are

35 Nursing Colleges, 6 Public Health Colleges and 1 Medical Technology and Kanchanapisek public health college. All 42 colleges are located in every part of Thailand and have developed educational implementation for many years. Until now, they have the collegiate status.

In the past, producing nurses was to produce assistant nurse and obstetric students (Vipan Watanacheep, 1999 : 2) Later, there was producing elementary nurses, and then producing nurses with undergraduate level to suffice the demands of hospitals and the number of increasing patients. Thus, in the old days, Nursing Colleges were parts of provincial hospitals in certain provinces. Afterward, the colleges produce nurses for the provincial hospitals and other hospitals lacking nurses. In producing nurses, previously, nurse lecturers were the skillful nurses and approved from their institutions to be lecturers. Therefore, organizations or hospitals can be confident that the persons who are skillful must be able to produce quality nurses as well. And it is the belief that nurse students graduating from Nursing Colleges can serve in the areas where the colleges are located in. Such belief had been around for almost 25 years until new technologies have been introduced. These technologies are such as using computer as teaching tools, and better technologies to help access more news and information following the current globalization trend. The new technologies significantly effected teaching and learning systems of Nursing Colleges more effectively. In the past, nurses were produced to serve just at specific regions. The teaching and learning system must widely open to the broader perspectives following the globalization trend. There is a new procedure to accept students, which is selecting from the Entrance Examination (Formerly, they used to choose the students by their own methods). Therefore, most students came from different regional areas such as Northern East, North, South and West. Consequently, arranging the nurse courses of study had to diversify, not specific for any individual region. This is in order to the new graduate nurse students can apply their knowledge and skills to work for any institution or hospital, not just only for the province where that nursing college located in. Moreover, the nurse lecturers have to adjust themselves as the world changed. Nurse lecturers, then, will be recruited widely from many sources, including the qualified outsiders. Therefore, presently, the nurse lecturers graduated

from various institutions such as Chulalongkorn, Mahidol, Songkla, and Khonkaen universities as well as the Ministry of Public Health. The teaching patterns of lecturers from different institutions made Pra-borommarajanock Institute require the standard central curriculum to manage the nurse study of the institutions under Pra-borommarajanock Institute. However, the teaching patterns of any institution can be freely different in methods and processes, just have to cover such standard central curriculum. This curriculum of the Pra-borommarajanock Institute allows students to apply such knowledge nationwide, and respond the need of hospitals and the increasing number of patients.

It was found that there have been the nurse producing to answer demands of hospitals and patients for nearly 20 years until it can produce nurses enough for the demands of many institutes. Presently, the nurses from the Ministry of Public Health are enough so it is very essential to turn the point to the quality development aspect. This does not mean that the former nurses had no quality but they were qualified in some level, focusing on the knowledge and skill to perform the nurse works. Recently, the world changed to globalization and concentrated more in educational quality. This policy had been originated by Ministry of University Affairs since the year 1996. The nursing colleges, at present, are able to produce the undergraduate degree nurses so such institutions became the higher educational Institutions. The main responsibilities of these institutions are arranging the course of study, researching, academic servicing for publics, and nurturing art and culture. (Mahidol University, the Development of Course of study, 1998 : 2)

Besides, each nursing college is the supporting institute of the Nurse Faculty of State University in each region. Such universities follow the policies of the Ministry of University Affair which support the building of the educational quality assurance system. Therefore, nursing colleges have to perform the quality assurance system as the policy of the Ministry of University Affair as well. Moreover, all supporting institutes are freely to choose the academic quality assurance systems so there are some nursing colleges in the same region that assembled to be networking colleges to help one another to develop the academic quality assurance system. They

have been arranging the scholastic meetings and continuing such activities for more than one year. This supports the acceptance of various quality assurance systems that each college in the network is freely to choose its own academic quality assurance system. (The Pra-borommarajanock Institute, 1998 : 2)

Not only the policies of the Ministry of University Affair, but also the policies of the Pra-borommarajanock Institute, in which nursing colleges are in network, are for all nursing colleges in the Pra-borommarajanock Institute network to apply the academic quality assurance system. Such system is focused on the key aspects "producing person, producing value, developing quality" that nursing colleges in the Pra-borommarajanock Institute network, the permanent undersecretary of Ministry of Public Health's office and supporting institutes of Nursing Faculty, and universities in many regions have followed these quality assurance policies, and realized the benefits of this assurance as follows; (the Pra-borommarajanock Institute, 1998 : 2)

1. To develop the academic quality
2. To encourage the confidence of workmen and create the confidence in quality servicing for public.
3. To offer the information for any stakeholders such as ruler or government.
4. To create the transparency of teaching
5. To generate the responsibility measurement to natural resources such as human beings, money and so on.

From the policies and the good results of the quality assurance system application, the nursing colleges in the network of Pra-borommarajanock Institute have realized the necessity of the quality assurance system in these aspects; (Jermjan Ratanakarn, 1998 : 13)

1. How much quality should the nurse in each level be?
2. How should the standard course of study (standard central curriculum) be?
3. How should lecturers have the professional standard?

4. How are the methods of effective and efficient learning and teaching?
5. How balance of implementation between external institutions governmental and private sectors and community should participate in the educational arrangement ?
6. How to utilize the resources of education economically?

In the current competitive situation, choosing the educational institution to study depends on the learners, parents and sources of funds. Having the appropriate information to help considering the institution choosing to study that is the confidence of any institution is essential. Therefore, the academic quality assurance system is one of indicators for students to assure that the courses of study of institutions are qualified, and after graduation, students can be the social needed qualified nurses.

2. Types of the Quality Assurance System

"Quality" means the standard qualification and intention to be effective not less than the standard level by considering all dimension patterns that are not just only the success but also considering the ways to reach qualification.

Definition of Quality as the American Heritage Dictionary of English has 4 meanings, which are;

1. Character or qualification
2. Natural character or necessary manners of things
3. The excellent status
4. The high social status

Therefore, the meaning of quality in academic aspect is the prosperity of highest academy and results, quality of lecturers and students, courses of study and evaluation. They also mean other processes in the related academic results, including the qualification and components of environment in physical institutions, as well as personnel who are parts of quality. (Uraipan Chenwanichayanon, 1998 : 2)

After the nursing colleges of the Pra-borommarajanock Institute network, Ministry of Public Health, adopted the quality assurance system and has clustered to be the study network of the quality assurance, there are various systems that are studied to use for choosing implementation system of the quality assurance such as;

2.1 5 – S. activities is the activity adopted from Japan which are;

1. SEIRI is to separate clearly between the necessary and unnecessary or irrelevant things, and then get rid off such irrelevant things from the system.
2. SEITON is to arrange the necessary things to be at hand and everybody knows what and where they are.
3. SEISO is to always keep the place, apparatus, equipment, and devices clean and ready to be used.
4. SEIKETSU is to keep maintaining or improving the first 3-S. activities to retain the cleanness and be in order
5. SHITSUKE is to train everybody to perform correctly and has good behaviors.

The 5-S. activity is the orderly organizing of workplace which is the fundamental factor to increase the productivity, activity implementation, activity procedure, and to continually refine the human resources with the belief that human beings will improve their organizations steadily as the participating concept. (Krit Imsaeng, 1997 : 3)

The Objectives of Performing 5-S. Activity

1. To develop the continually improvement idea
2. To create the good team work by allowing everybody participates
3. To develop the implementation and foreman by training them the leadership abilities
4. To prepare readiness of using the more complicated technologies concerning the working improvement.

Factors

1. The earnestness of top implementation
2. Starting from the training
3. Participation of everybody
4. Performing regularly for the higher standard

Benefits

1. Workplace is cleaner and more orderly.
2. It is easy, convenient and safe to work.
3. Organization can distinctively experience the improvement.
4. It produces the creative improvement ideas.
5. Working is more orderly.
6. It increases the working success.
7. It helps maintaining equipment.
8. It increases the good service quality.
9. It supports good attitudes of employees.
10. Workers feel proudly to work.
11. It affects the better image and encourage business doing.

Steps of 5-S. activities Performing

1. Policy Announcement
2. Seminar/ Study tour
3. Setting up 5-S. activity committee
4. Persuasion
5. Share responsibilities
6. Taking pictures (for record)
7. Survey on responsible areas, setting up topics for improvement
8. Examine, evaluation, and correction
9. Set the 5-S. activity standard
10. Area examination by implementation
11. Taking pictures for comparison
12. Report the 5-S. activity results

13. Continuously public relations
14. Contest of area
15. Assessment

2.2 ISO (International Organization For Standardization)

The concept of ISO 9000 quality system

The meaning of "quality" from the ISO 8402 standard is "Character or qualification of products or services in total that show the abilities to create the satisfaction as specified. (TISI,1996 : 1)

ISO 9000 is the requirement of work implementation for assurance customers the quality confidence. The word " ISO" came from Greece which means equal or component of abbreviation of international organization that has duty to control numerous standards of the world named "International Standardization for Organization" which located at Geneva city, Switzerland.

ISO 9000 means the standard of quality system that all worldwide business sectors choose to use to guarantee " the qualified implementation system of organization"

The key concept of ISO 9000 is to set the implementation system for assurance the quality that can be inspected through the document system.

Thai Industrial Standard Institute (TISI) declared to use this standard quality system in Thailand as the name "International standard – ISO 9000" with the 5 content sections that should be studied as follows;

1. ISO 9000 : is the way and scope to choose and apply such standard quality system suitably.
2. ISO 9001 : is the standard of quality system that direct the design and develop production, installation and servicing.

3. ISO 9002 : is the standard of quality system that direct only the production, installation and servicing.

4. ISO 9003 : is the standard of quality system that direct only the inspection and the final test.

5. ISO 9004 : is the path of quality implementation for highest efficiency. It is the recommendation of quality implementation that has sub-requirement in each individual business.

From the above-mentioned key matters, it can see that the standard of quality system for assurance has 3 standard systems, which are ISO 9001, ISO 9002 and ISO 9003.

ISO 9000 and the Educational Implementation

The ISO 9001 standard has 20 requirements and the ISO 9002 standard has 19 requirements. Considering the educational system implementation, it may specify the point that any educational institution taking responsibilities of the curriculum designing and development, and requesting for the quality assurance, should ask for the ISO 9001 standard. If, any educational institution takes responsibility just only on the courses of study, for the whole processes (with the standard central curriculum designed and developed by Educational Technique Department, Ministry of Education or training curriculum that created and developed by other institutions), such educational institution should request just for the ISO 9002 quality standard which excludes the curriculum designing and development.

The Requirements of Quality System

1. Implementation responsibility
2. Quality system
3. Contract review
4. Design control
5. Document and data control
6. Purchasing
7. Control of customer-supplied product

8. Product identification and trace ability
9. Process control
10. Inspection and testing
11. Control of inspection, measuring and testing equipment
12. Inspection and testing status
13. Control of nonconforming product
14. Corrective and preventive action
15. Handling storage, packing, preservation and delivery
16. Control of quality records
17. Internal quality audits
18. Training
19. Servicing
20. Statistical techniques

Table 1 : The required contents of quality system, comparing between ISO 9001 and ISO 9002, by items.

Requirements of Quality System		
Regulations	ISO 9001	ISO 9002
1. Implementation responsibility	X	X
2. Quality system	X	X
3. Contract reviews	X	X
4. Design control	X	-
5. Document and data control	X	X
6. Purchasing	X	X
7. Control of customer-supplied product	X	X
8. Product identification and trace ability	X	X
9. Process control	X	X
10. Inspection and testing	X	X
11. Control of inspection, measuring and testing equipment	X	X

Table 1: The required contents of quality system, comparing between ISO 9001 and ISO 9002, by items. (Cont.)

Requirements of Quality System		
Regulations	ISO 9001	ISO 9002
12. Inspection and testing status	X	X
13. Control of nonconforming product	X	X
14. Corrective and preventive action	X	X
15. Handling storage, packing, preservation and delivery	X	X
16. Control of quality records	X	X
17. Internal quality audits	X	X
18. Training	X	X
19. Servicing	X	X
20. Statistical techniques	X	X

NOTE : x means requirement
\- means not requirement

Explanation of the requirements of ISO 9001 Quality Standard in Educational Servicing Contents

The key matters of the ISO 9001 quality standard system is the standard quality system implementation of education that England has used to explain the education implementation, by taking the BS 5750 standard of England or ISO 9001 to explain the educational implementation. The key matters of this standard are at 4.1 – 4.2. While 1-3 are the explanation of scope, reference, and wording definition. Therefore, this paper will concentrate on the key matters of 4.1–4.2. (Jermjan Ratanakarn, 1998 : 4)

4.1 Implementation responsibility The high level implementation has to set the policy of organization structure, set the range of responsibility and authorization of departments and implementation. Moreover, they have to arrange resources, training, and development as well as authorizing the implementation delegates who will take responsibility of quality control (Quality Implementation Representative). This is to assure that the quality system has been created, developed, taken to apply and maintained harmoniously with the needed standard, including reported the efficiency and success to the implementation so they can revise and then apply it for the standard of quality system improvement. The reconsidering and revised period of the implementation should be in the targeted period.

4.2 Quality system The educational institutions have to set and maintain the quality system of the educational servicing by managing the quality document such as the quality manual, the working procedure manual, the working method manual and other supporting document such as Checklist Form, etc. Furthermore, they should plan the quality to assure that the designed quality policies and objectives have been responded.

4.3 Contract review It is for the confidence of educational institutions concerning their performance of all activities committed to customers (the individual student). It is checking whether there is anything that the educational institutions can not apply. Institutions must be certain that they have ability to perform

effectively before committing to students.

4.4 Design control Project or curriculum has to be designed suitably for each regulation in terms of contents, methods of study and assessment.

4.5 Document and data control It has to assure that the current document is up-to-date and always available at any work site. This document has to be approved and specify issue of document or information, especially, whenever there are the document and information revisions, they must have been reconsidered and approved from the same department that proposes and approves before.

4.6 Purchasing It means the resource procurement, including the hiring of the right personnel for specific qualification of Educational Institutions. Moreover, this also includes the evaluation, subcontractors selection, purchasing information, revision of product and purchasing servicing, and personnel hiring concerning the suitability of personnel in terms of educational degree, experiences and knowledge as well as the capability.

4.7 Control of customer-supplied product The educational institutions have to perform and maintain the proper product storage and maintenance. This includes information delivery to customers, which means any information, textbook, document and other devices that customers bring in for study using (if they are available). These materials must be maintained well. If they are damaged or improper to use, they have to be reported or informed to customers.

4.8 Product identification and trace ability

Educational Institutions have to arrange and maintain the product identification and trace ability document as well as the proper services. These include the students and personnel's information, for example, who registered for which subjects, when and how the results are pass or fail, what grades they get and so on.

4.9 Process control

The educational institutions have to specify and plan all related activities to the courses of study such as the planing and developing courses of study, supervision of students.

4.10 Inspection and testing

The educational institutions or the training centers have to arrange and maintain document that specify methods of measurement and test to confirm with specific requirement of servicing whether they can perform as specify. These start from the new student acceptance, the assessment during procedure performing, the courses of study, and the final examinations or the tests for knowledge assessment of students or trainees as well as the assessment and test report.

4.11 Control of inspection, measuring and testing equipment

This is for creation of confidence that books, textbooks, software, and other equipment are right and ready to use in studying for every curriculum. This is also creation of confidence that tools such as meter and others that are used in laboratory or work shop room have been standardized as the nation standard.

4.12 Inspection and testing status

This status has to specify suitably by telling if it is in requirement or not (fail or pass criteria).

4.13 Control of nonconforming product

The educational Institutions or training centers have to provide and maintain the method document for assurance that all things that are not as requirement can be specified. These are such as curriculum, study result of students or trainees. These institutions have to revise and separate products that are not as requirement as well as set performing method to correct these things. For example,

- Arranging to teach or tutor additionally
- Arranging test retaking for reassessment or assigning to rework or to work additionally work
- Transferring to other curriculum or other institution
- Asking to resign

Regarding the curriculum, it may be

- Developed or improved
- Abandoned of using

Regarding tools or facilities, if these things can not be used, it has to specify clearly and separate them from the work site for preventing taking them to use without notice.

4.14 Corrective and preventive action

The educational Institutions have to set and maintain document of correction method, including prevention of problems of entreaty from students and parents. Such institutions or training centers have to perform and record any change that happen from the correction or prevention. These are important to develop the continuously improvement.

4.15 Handling, storage, packaging preservation and delivery

This covers all duties concerning taking care of students in terms of teaching methods, health, career suggestion, safety of individual student, food and residence arrangement and delivery. Besides, this includes all resources that utilizing in curriculum or project such as tools, document, examination papers, etc.

4.16 Control of Quality Record

The educational Institutions have to make and maintain document concerning identifying methods, aggregation, searching, finding, storing in files, keeping and destroying the quality recording. This quality recording should show the success of quality system implementation. This recording may be document or electronic media.

4.17 Internal Quality Audits

The educational institutions have to make and maintain document concerning planning method and quality audit of educational institutions. This is to recheck the quality activity aspects and results if they are conformed with the plan and to measure the success of quality system. If there is any thing is not as requirement, it must be identified and corrected by setting the revising dateline, and controlling method. This also needs to follow-up the correction if it is effective.

4.18 Training

The educational Institutions have to make and maintain document concerning the necessity of training and arrange training for quality system concerned personnel

4.19 Servicing

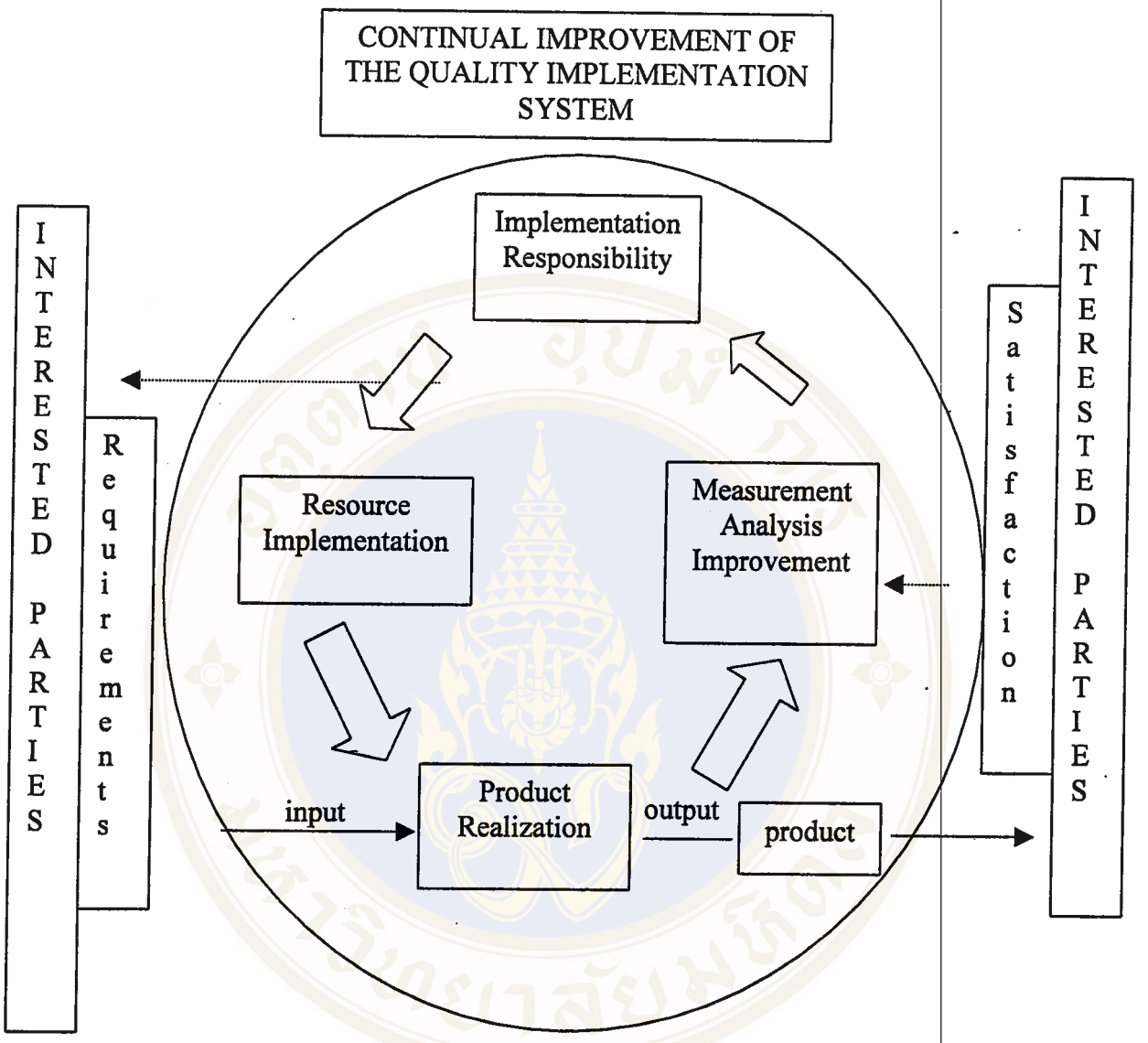
If there is specific agreement of servicing with students, educational institutions have to perform and maintain servicing methods after students' graduation.

4.20 Statistical Techniques

The educational institutions have to specify the needed statistical techniques to determine, control, recheck the process capability and qualification of servicing such as analysis of study result assessment, ratio of Dropout, registering the achievement of education and the training accomplishment, students' satisfaction. These can help specify the future trend.

ISO 9000 : 2000

In the year 2000, Thai Industrial Standards Institute has adjusted the ISO volume 2000 regarding the lowest level quality implementation to satisfy customers. However, organizations can adjusted their own systems to be suitable for individual ability to respond the customers' satisfaction. These concerns implementation responsibility, resource implementation product realization and measurement analysis improvement (TISI, 2000 : 3-14) as shown in picture 1.



Picture 1: The Quality System Arrangement Procedure

The Path to ISO 9000 Quality System

Performing quality system has 6 key procedure as the followings; (Jermja Ratanakarn, 1998 : 9)

1. To reconsider the current status of institution The high level implementation has to consider if the performance of the institution is proper to apply ISO 9001 or ISO 9002 quality standard. Therefore, they can set the quality policy and set the task force to study and compare the institution current status with the requirements. If there is discordance with requirement, they have to consider whether they have to add more, and how. This can adjust by understanding business, ISO 9000,and ISO 9004-2-quality standard.

2. To plan the working procedure and document system The work force has to set the working procedure and document system, which includes the working procedure manual, quality manual. The key point of document is to write as performing and performing as the written, then, make understanding among lecturers and all concerned staff so they can understand in the same direction. This may have to reconsider, revise the document for being concise, clear, and easy to understand as well as can be applied to use further.

3. To take the document of quality implementation to apply It is to take the document of the second procedure to apply. This is very important step because it is the trial step that if the document we prepared suitable or not and how. In case of the incomplete or unpractical document, it needs to be rectified. After considering and finding out that the operations are not good enough, we have to make understanding with concerned staff who might have to be trained and more improved.

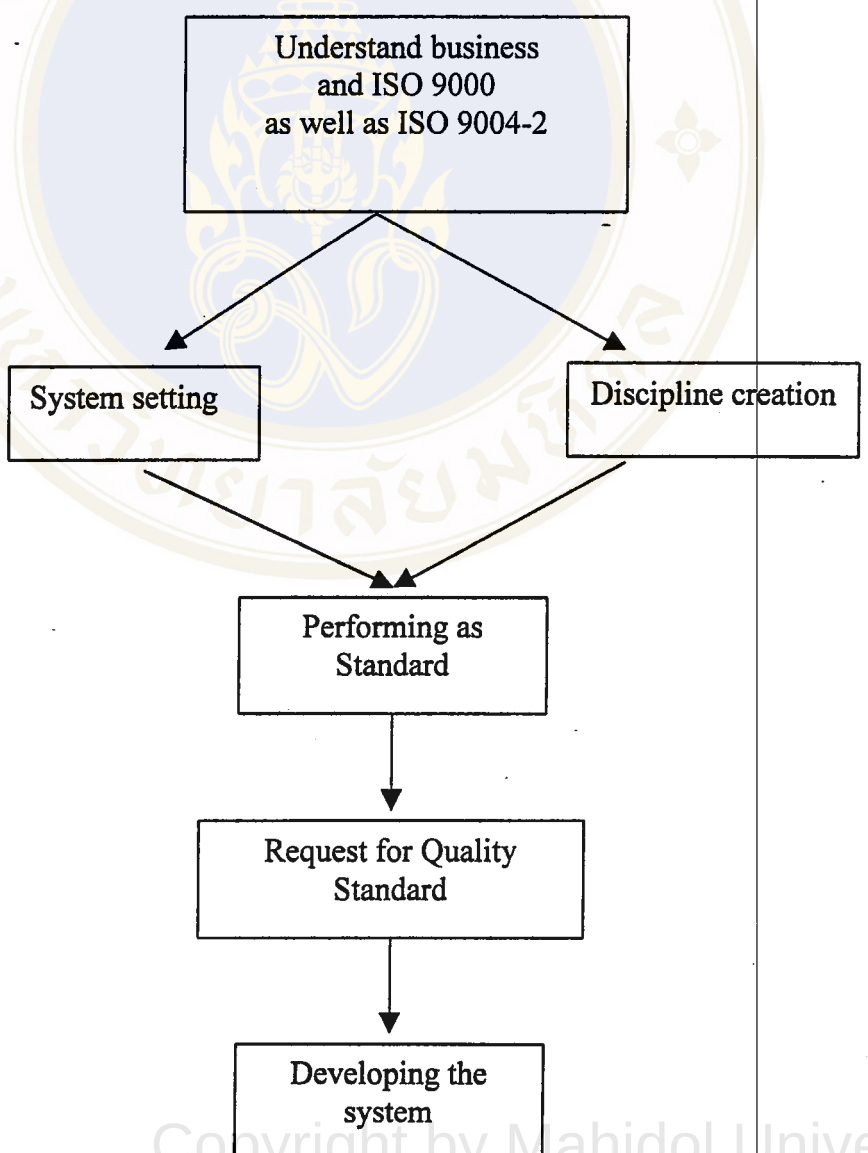
4. To examine the quality implementation system It is the last step of performing the quality system. It is the procedure of examination for the whole system, and checking if the set system is already suitable or not, and how. If finding out that there is a defect, it needs to rectify. This is to assure that the organization system is correct, suitable and efficiency.

5. To request for the Quality Standard When educational institutions or training centers are ready in the quality implementation system, they can specifically request the quality assurance from the Certification Body Institution

such as Thai Industrial Standards Institute Ministry of Industry , the Lloyds BVQI company and the RWTUV company. The institutions that have duty to assure the Certification Body, will send their representatives to inspect the true performing by making an appointment in advance after considering all document manuals and working procedures.

6. To develop the system After institution is certified the quality standard already, the quality system does not end. It has to be developed and improved constantly.

The Path leading to Service Quality System

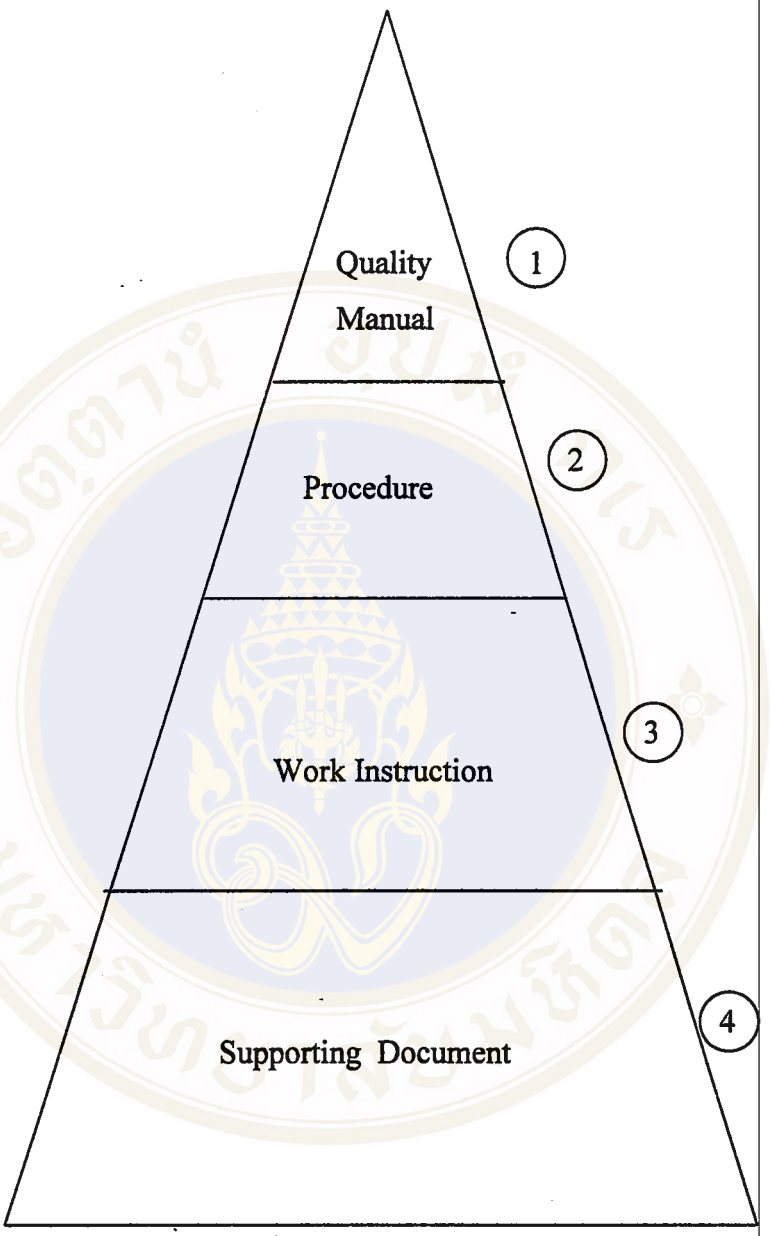


To start the working system to conform all regulations of the ISO 9000 standard quality system, we have to start with the designing of working system. This is for setting the path of performing for the first time, and maintaining the designed system, including communication to other concerned staff so they can perform appropriately. This is unavoidable to put this abstract and intangible system in the document which is tangible media, and it will be the media to be used further.

Therefore, it is necessary for the person, who will start planing the working system following the ISO 9000 quality standard system, to prepare all necessary and required documents before starting to perform. All these document are also beneficial, as they are key basic things for correction or improvement the quality implementation. (Jermjan Ratanakarn, 1998 : 10)

The requirement of the ISO 9000 quality standard has been specified that it needs to have the document of quality system, which can separate to be 4 levels as follows;

1. Quality Manual
2. Procedure
3. Work Instruction
4. Supporting Document



Document in each level in the Quality System. (Jermjan Ratanakarn, 1998 : 10)

Quality Manual

Quality Manual is the document in the highest level in the quality system. In general, there is one manual in each organization, company, department, or operating section that concerns the quality system arrangement. This quality manual is prepared by the high rank implementation or representatives to determine "the quality policy" as the requirement No. 4.1 of ISO 9000 standard quality and set "path" of doing business in general so they are conformed with all the requirements of ISO 9000 quality standard that is applied.

The key contents of the quality manual are;

1. Quality policy that is set by the high level implementation
2. The message concerning the profile in brief of organization, company, department, or the operating section
3. The total organization chart which includes the other substructures
4. The duty and responsibility of the key person-in-charge or other departments in the total organization chart.
5. The ways to do business in several aspects which have to conform with the requirement of the ISO 9000 quality standard No. 4.1 to 4.20 as depending on the application.
6. The reference section that includes the lower level document for being easy to refer to the details of that level document
7. Others that are suitable.

Usually, the quality manual is the first document for the person or external institutions to request or ask for copy if it was already prepared. This is for making understanding of the quality system of any specific institution. After making certain that our products or servicing that will be delivered has passed all quality system processes, still, there is quality controlling from the beginning to the end of process. There are also planning, examining, defect rectification which is to prevent the repeated problems, and keeping all information for finding the cause of problem when the problem occurs.

Procedure

Procedure is the document in second level of the quality system, which is very important to the system. We may say that it is the most important. This is because it is the real system that uses to operate in the business doing in each daily life. For example, all jobs that personnel in organization, company, or department usually perform every day. If there is no this type of document, business, in total, can not run.

In each organization, there are names called for this document differently such as Quality Procedure, System, Procedure, Policy, Standard Operation Procedure (SOP), and Work Methodology. However, they all have the same meaning, which is "Procedure". In general, "Procedure" concerns the working that relates with up to 2 departments, which need to cooperate with one another. They may cooperate by sending material, information, or document two ways-back and forth or probably one way sending.

This level document has to explain the details of work, responsibility of any concerned personnel, required sources or resources, periods of operating, places to operate, or even the reasons of performing (if necessary). If there is more needed details in any specific matter, we can refer to the document in lower level.

"Procedure" usually concerns the relationships among several departments in the organization chart. However, it does not mean that every procedure will always relate to department more than one. There might relate in just one department, but the work level is the "system" level. Some people may compare "procedure" as Jigsaw, which will be a picture when taking each piece of picture to connect one another correctly. The picture in this case means the "Business Flow". Nevertheless, it should not forget that " procedure" in each issue has to conform and follow the ISO 9000 quality standard.

Work Instruction

Work Instruction is the document in third level of quality system. This document concerns the details of specific work only. The details of work depend on the level of quality of such work. If it needs the high quality work, there must have the very much in details of work manual. This is for controlling operators to work correctly since the first time. Do it right at the first time and also prevent or decrease the chances of problem happening.

Not every "Procedure" needs to have "Work Instruction". Usually, there will provide the "Work Instruction" for the work in operation level only. This work is such as production, examination, testing, maintenance or the device comparison and so on. These types of works need "consistency" of every step in each performing so there will be document manual at the operating site. For the work that do not need details or the work that has no pattern of operation, it needs not to have work instruction.

Generally, the word "Work Instruction" may be called differently such as Operation Instruction, Standard Operating Procedure (SOP), Manufacturing Assemble Instruction (MAI), Test Method, Laboratory Instruction, or Job Order but all mean the same, which is " Work Instruction".

Supporting Document

Level 4 document is "Supporting Document" such as other document besides the above mentioned document, which are used in practice or being reference. The examples are;

- Specifications
- Blueprint
- All concerned laws and regulations
- Various standards
- System manual or equipment manual, manuals of other tools
- Form
- Contracts or other deals

- Pharmaceutical books
- Comparison table and characteristic curve
- And others, depends on each business

The thing that has to consider about the supporting document is the 4.9 regulation of ISO 9000 quality standard which says " Operating, especially product or servicing," has to conform with the regulations, laws, or international standards. And from the 4.3 regulation, it states that an institution has to sure that the product or servicing has to be as agreement with customers. This might include production, servicing, and testing. This must regard related documents as supporting documents.

Quality Plan

The documents determine the method to quality control and checking. Through manufacturing process or providing services, it covers total operations, including knowing where are control points? and which method is for qualification control of production and services and how often? This can refer details to other related documents. The planning for quality plan is to view the whole picture of operation from the start to the end of process.

Quality plan might be set in document level 2 or 3. It depends on how it fits to each organization for convenience to work without clear limitation in setting level.

Flow Chart

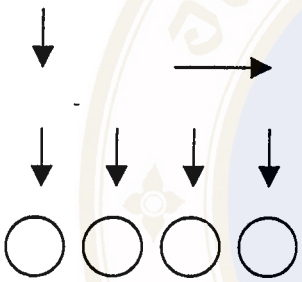
This flow chart is a favorite technique widely used to collect ideas to set steps of work by writing in flow chart to make clear understanding. Also it represents meaning effectively between preparing group, easy to change in order to bring details to rewrite for explanation.

Flow Chart writing technique starts from activities that must occur to put in geometric frame, categorizing by types of activities. Then, it is to put it in order and link with arrow. When all is connected, the flow chart will be (basic) representative for a certain work.

Favorite types of Flow Chart are as follows.

Activities in each step

Checking, testing, approval, or what needed to be decided



Arrows used to connect activities together

Linkage of Flow from a page to other page.

When preparing flow chart is done, it is to take flow chart to be guideline to write other documents like Procedure, Quality Plan or work Instruction. This can be explained in details of each activity in that who are responsible, and how they should practice. Did they keep a record or not? And how? What documents are related? It depends on complexity of the work.

Flow Chart is like building new road to a forest, if a traveler follows the road, he would never get lost. If he walks in to the forest without the road, he could get lost easily. It is like writing documents, if starting with flow chart, the writing will be easier. Moreover, flow chart is more useful to easily understandable communication in presentations in any occasion as well.

Usefulness of quality system ISO 9000 for practitioners

1. Participation in quality system operation
2. Generating satisfaction in operation
3. Worker having higher consciousness about quality

4. Operation has system and clear limitation.
5. Developing group work or teamwork.

Usefulness of quality system ISO 9000 for users

1. Increasing confidence in products and services
2. Having convenience, time saving, and expenditures without rechecking quality of products.
3. Easy to find the names of organizations received quality certification TISI 9000 , because TISI will make a name list book of those who are certified to distribute.
4. Having protection in quality of products and services.

It might be stated that quality system operation will be successful, depending on many factors as followings. (Jermjan Ratanakarn, 1998 : 13)

1. Top committees support seriously and continuously.
2. Every one in the organization has consciousness about quality and provide cooperation.
3. There exists following and improving quality administrative system continuously.
4. There are enough budgets.

However, another important quality of educational system is to build moral and ethical principles in professions. People who graduate from educational institutions should have those principles to society and country. We can not ignore this issue and will have to be attentive highly since selecting input to the system, such as selecting students and teachers. Furthermore, it includes learning process that must contain consciousness, urging students to always have awareness. Lastly, this would lead into practice. Therefore, educational committees and relevant parties should cooperate to take care these components to have quality in every step. Then, confidence will be built in educational system of the country, because the future of society and country will depend on present educational system whether it has good quality.

2.3 TQM (Total Quality Management)/CQI (Continuous Quality Improvement)

TQM/CQI is collection of all resources of the organization to collaborate to develop working methods to respond to customer's need, generating learning and improvement systematically and continually.

The significance of TQM/CQI is to value everyone in the organization. To have everyone taking part in system development, the result is that participants learn and develop themselves and become higher valued assets of the organization.

Components of TQM (Nariakikano, 1996 : 3)

1. Intrinsic Technology
2. Motivation for Quality
3. Quality Control Concepts
4. Quality Control Techniques
5. Promotional Vehicles
6. Quality Assurance

2.4 Educational Quality Assurance : Input Process Output

IPO system is the basic system that is used in every business and suitable for applying in educational institution. This is because it is convenient, consume less time, economical in using internal personnel, and be able to examine as well as evaluate. This quality assurance is concerned in 3 aspects (Prasit Tongsawai, Matichon Saturday 25 July 1999 : 11)

Inputs Aspect

Qualification : Goal, philosophy, and objectives of courses of study

Indicators : Program of study can respond the demand for education and demands in the future (labor market). There must have clearness of objectives, compatibility of the courses of study and the goal of tradition or context of the institutions etc.

Qualification : Qualification of new students

Indicators : G.P.A.of higher education level, entrance examination scores, other test scores, such as attitude test, etc.

Qualification : Quality of lecturers

Indicators : Qualifications, academic titles, experiences, quantities of works, proportion of lecturer per students, number of academically well-known lecturers ,etc.

Qualification : Budget

Indicators : Receiving sufficient funds from universities, budgets for full-time students and other expenses, etc.

Qualification : Quantity-Quality of resources

Indicators : The number of books in library, sufficient capacity of library for students, news and information services for lecturers and students, readiness and up-to-date teaching and learning tools, workshop and other buildings as well as facilities, etc.

Qualification : Leadership of the committees

Indicators :
- Recognizing for being an advisor or having a vision for the future, realizing in what is currently happening and take it to consider in making decision, learning the happened mistakes, and having a wide range of vision
- Having the apparent personality of supporter, the acceptance for other experts, being able to adapt behavior for the better results, using the power or influences in the proper way. The changes have to be done step –by-step.
- Being aware of commitment to work and having personality that is being able to confront all problems, considering all problems as challenging, having enthusiasm to get through all

obstacles, having various methods to create motivation and realize the others' mistakes, and finding the way to correct or improve, etc.

Qualification : The fund of research supporting

Indicators : Having enough supports and fund for lecturers to make researches, finding the external fund to help lecturers to do researches, etc.

Qualification : Officer, Academic assistant

Indicators : Having sufficient and be suitable for the duties of officers and academic assistants, etc.

Process Aspect

Qualification : Organization atmosphere

Indicators : Leadership status, commanding analyzing, creating motivations inside the organization, Ordering, contact, rewarding, etc.

Qualification : Implementation and organization arrangement

Indicators : Having clear organization chart and implementation route, determining qualification, experience, authorization as duty of any individual level evidently, as well as implementation style that can lead the educational institutions to the top level, etc.

Qualification : Courses of studies, subjects, and other academic activities

Indicators : Arranging courses of studies has to relate to the graduation producing objectives, abilities and demands of students, the satisfaction of lecturers and students to all subjects, and the judgement form the external experts, etc.

Qualification : Teaching

Indicators : Developing the new methods of qualified teaching means all lecturers are trained about the suitable and up-to-date methods of teaching. They should have enough up-to-date teaching equipment, and have teaching assessment by students and lecturers together. Lecturers should have motivations to teach by observing from the lecturers who are happy when they teach and have good attitudes to learners and consider students as a whole picture, not only look at the study problems. These lecturers see the successes of students are as value rewards for lecturers. Lecturers who love to teach will prepare teaching well and have students as the center and, then, teach them in depth so the learners can know well. They teach the learners to generate creativity and lead them to the new innovation. They have fair justice to students, good relationships between lecturers and learners, etc.

Qualification : The studying of student

Indicators : Students learn in depth what lecturers want them to know, and learn about time implementation (Time on task) of students, etc.

Qualification : Additional academic activities

Indicators : Additional activities have to be suitable with the type of subjects and students. Additional activities are to assist students who can not study full time or who have the bad study result. Consulting lecturers need to have capability and appropriate mind to help students positively, etc.

Qualification : Student personnel work

Indicators : Implementation and welfare works in several aspects are encouraging students and lecturers maintain excellent in academic aspect, etc.

Qualification : The study evaluation
Indicators : Having fair, reasonable and suitable, etc.

Qualification : The lecturer development
Indicators : Having the lecturer developing center and providing activities or results that will suitably and sufficiently support lecturers be the excellent in academic aspect, having lecturer development in all teaching, researching, and implementation, etc.

Qualification : Research, Academic servicing
Indicators : Having enough research funds, number of published or referred researches, academic work that is benefit for both external and internal institutions, etc.

Qualification : Institution assessment (Self-Study)
Indicators : Having committee, with clear and suitable assessment of institution, to evaluate institutions as criteria, institution correction after knowing the evaluation result

Outcomes Aspect

Qualification : The success of resource utilization
Indicators : The resource utilization following objectives and worthily utilize it with maximum benefits

Qualification : Knowledge and abilities of students in the moral aspect
Indicators : Knowledge in subjects, ability in academic aspects, capability in analyzing and criticizing, fundamental skills in studying, special abilities, success of studying, graduation, and achievement of career, as well as receiving awards or acceptance, etc.

Qualification : Knowledge and abilities of students in skill aspect
Indicators : Competence of students in professional skills, and their success in practices, number of graduate students who work as they have studied, and the achievement in career, being rewards or acceptance in working performance, etc.

Qualification : Attitudes to professions (Affective domain)
Indicators : Value, the interest in academic aspect, self-imagination, confidence and satisfaction of institution, etc.

Qualification : Personality development and social basic skills
Indicators : Confidence in oneself, responsibility, leadership, human relation, relation making, communication, moral and ethical self-adjustment, etc.

Qualification : Success of lecturers
Indicators : Honor, reputation, and rewards that the lecturers received; the number of famous lecturers, etc.

Qualification : References of academic works
Indicators : The number of references of lecturers' academic works per capita from published documents

Qualification : Innovation of courses of study and teaching methods
Indicators : Researches in innovation of courses of study and teaching methods and bringing the results of the research to improve quality of courses and teaching methods, etc.

Qualification : Ability for further study of students
Indicators : Quantities of students proceeding in graduate study, etc.

Qualification : Success in career of students

Indicators : Information of alumni about success in life and career, etc.

Qualification : Reputation of institution

Indicators : Specialists in the fields approved the quality and academic reputation of the institution, etc.

3. Theory about the selections of quality assurance system

3.1 Decision Making

Dalton E. Macfarland (1994 : 76) stated that decision making means the actions involving the selection that the committees or organizations choose a certain practical method from other methods

George R.Terry (1994 : 107-108) stated that decision making is a certain selection setting upon the basis of regulations from two or more possible alternatives.

Decision making represents bringing principles or tools to help make decision for decision maker having less opportunities to make mistakes or to make the right decisions (Wantanee Poompatarakom, 1993 : 29). Decision-making will happen under any circumstances that can be appraised and can use the principles and tools to consider for the best alternative for making decision. Moreover, decision making always brings the mental probability and systems to be involved, because each person has his own operational reasons to demand the best result or return. The factors that will assist making decisions are principles and tools as the followings.

1. Many alternatives may be in operational policy, techniques, or steps of operation. With many alternatives, only personal discretion may lead to mistakes. Then, more tools and principles are necessary to help making decision.

2. There are many current information. Using personal judgement to make decision may have high possibility to be mistakes, because there is no way to bring complete information to consider.

3. To reduce conflict, because basic knowledge and experience of each person are different, if there is no use of the same principles or tools, it might lead to different decision making. However, this may cause conflict to people in the organization.

4. To reduce risk, making decision without principles or tools has high risk, but decision making with tools will have fewer mistakes or none of them.

Therefore, decision making means consideration to choose alternatives which have more than one alternative to cause specific action or it means choosing solution for conflict, controversy to cause action in a certain way which has been chosen and scrutinized. (Wantanee Poompatarakom, 1993 : 30)

Form of decision making (Jumphol Nimpanich, 1991 : 23)

1. Using consciousness is decision making which has no principles or fixed rules. It depends on consideration of a person who makes decision, assuming the appropriateness or righteousness by himself. The results of decision making rely on individual no matter about personal contents such as conscience, experiences, sentiment, emotion, instinct and premonition.

2. Using logic is the decision making based on reliable principles or academic rules which are principles of logic. The principles represent decision making with scientific methods to help, including standard techniques and processes which may be prepared or not prepared ahead of time.

Decision making is the result of attempts of an individual or group, relying on situations and environment.

Therefore, it might be stated that decision making in uncertain situations when possible outcomes from all alternatives might depend on unpredictably future events. The best way to find practical alternative is to calculate results of each alternatives, evaluate with probability of each event, and then make decision to choose the practical solution with highest-valued expectation.

In addition, decision-making process also assists decision making to be done systematically . The process starts from considering the problem, finding solution for the problem, choosing the way to solve the problem, evaluating the solving result, and following all related information.

The steps of decision making process include 5 major steps. (Wantanee Poompatarakom 1993: 49-54)

1. Analyzing situation is to analyze the data and situation to understand how things are and to think in the future that what should it be to be the best.

2. Setting standard for the work is to determine the goals to be finished. The goals should have main characteristics in that they are based on related behaviors, traceable, and measurable.

3. Finding or developing alternatives. That is because each work will have at least two alternatives to get it done. Committees will be forced automatically to figure out the better alternative to help generating better successful result. This might be discussion or brainstorming . When the causes of problem are found, it is necessary to find information related to the causes, such as accounting report, short-term plan, long-term, analysis of competitors, and review of income and profit. These data make the committees see the way to solve problem. However, possession of data might not generate effective decision making. The usable information should have the characteristics as the followings. (Worapat Poochareon, 1998: 143)

1. The information should be relevant to the problem.
2. The information should be up-to-date.
3. The alternatives should be congruent to the goals or objectives of the organization.
4. Each problem should have various solving alternatives.

4. Evaluating alternatives. If each alternative developed is not used in practice, it would have different result. In order to choose alternatives to practice, the consideration will be done by thinking about the best possible outcomes by using these questions;

- Will the alternatives help accomplish the goals?

- What is the possible problem resulting from the alternative? How will it affect?

- Will the organization be able to have resources to support the practice for the chosen alternative? Searching for as many alternatives as possible is to evaluate the importance of each alternative by considering the level of importance of each alternative to find highest benefits. There are two ways to evaluate alternatives. (Worapat Poochareon, 1998: 143)

1. Committees consider alternatives by themselves. This method has limitations on time and funds.

2. Using decision making techniques is to evaluate alternatives to choose the alternatives with the highest return. This method is used to decide long term commitment and it demands a great deal of resources.

Evaluating the alternatives depends on the following principles. (Worapat Poochareon, 1998: 144)

1. Ability to solve the problem.
2. Relevance with the determined goals of organization.
3. No side-effect on other parts of organization.
4. It should be alternatives to use limited resources of the organization.
5. Standard or principles to evaluate alternatives should be relevant with the goal of the organization.

Decision making is on merely the best alternative. After evaluating the level of importance of alternatives, decision making to choose can be done easily, by selecting the alternative with highest return. Principles of decision making are as followings. (Worapat Poochareon, 1998: 145)

1. Can the alternative implement the objectives?
2. Decision making should provide the highest return.
3. Decision making is practical.

However, there are some concerns in decision making. (Worapat Poochareon, 1998: 145)

1. The conflicts among objectives make decision-maker find it difficult to choose an alternative.

2. When each alternative provides similar returns, it is unidentifiable for the best alternative.

3. In the case of effects on other parts or bad effects, it might have to search for new alternative or improve objectives.

4. The selection might have confusion, when there are many alternatives to make decision. Similar alternatives should be together and then compared and evaluated each of them.

When the best alternative is chosen, it should be used to generate highest return. If it can not be used in practice, the alternative is ineffective.

5. Practicing trial and taking an alternative to practice. After deciding for the alternative to use, the committees may set up practicing trial in some parts to assure that the alternative provides good result.

The concepts in decision making are used in research to find the best alternative for the committee to decide to use or not to use quality assurance system with many steps of decision making from many alternatives to found policy. Moreover, there is need to reduce risk and solve the conflicts in selecting the tools in which the alternatives should provide highest return, be usable in practice, and measurable. These are assumptions about personal factors in solving problems of decision making and leader. Therefore, the research takes the variables of solving problems of decision making and leader in the opinion of the committee into this study.

3.1.1 Economic theory

Rational Choice Theory

That a person will choose to do something from many choices depends on his reason. This can be explained in that human being will have behavior to choose best way that gives good return in his ultimate goal by having reasons to support his idea. (Barry, 1988 : 11) In all , reasoning selection of each person will be based on

the relationship between selection and action in that action on the choice results from rationale or individual characteristics. (Macdomald and Pettit, 1981 referred to Hindess, 1988 : 42) Besides, reasoning selection relates to two types of expectation which are future expectation resulted from present action and expectation in future value that would receive. (March, 1986 : 144) Thus, before the person will decide on investment, he normally has reasons to scrutinize for highest return in the future. (Maximizing benefits)

Rational Choice Theory is about individual who determines ultimate alternative that he is satisfied. Then the person will choose between the compulsory action to real the goal and the action awarding higher reasoning return. Hardeen (Barry , 1988 : 11) stated that reasoning selection represents action of individual resulting from motivation and self interest.

Rational Choice Theory in the view of economists (Harsanyi, 1986 : 68) provided the meaning that it is one of many choices, but what people choose will be set on satisfaction and opportunity. The person will work on one goal but will change to work on other goal, as the satisfaction is the same. However, the situation or information about the situation will make him change his mind. Therefore, the importance of economics theory about reasoning selection is that a person has selected what he is satisfied and maintain his satisfaction as well as behaviors that he chooses for the satisfaction which will be received in terms of maximum utility.

By concluding from Rational Choice Theory, it indicates that factors having relationship with action selection, which is satisfaction factors, opportunity and benefits from actions used to describe in this research whether committees will choose to use ISO or not depends on the benefits getting from using ISO and also knowing the opportunity in selecting ISO or not. Therefore, the satisfaction on ISO selection and benefits from using ISO should have relationship with attitude of selecting ISO. Consequently, the researcher investigates attitude factors about ISO in this research.

As a result, the research sets the assumption about knowledge of learning and participation in making decision for selecting quality system, the change in

personal and organizational behavior affecting behavioral changes in selecting quality system too.

3.1.2 Sociology theory

The Multiple Factors Theory of Decision Making and Social Action

Reeder, (Reeder, 1971 : 5), a sociologist studied about factors affecting actions or behaviors of people and set up theory about making decision and social behaviors by explaining reasons in a decision making of people, including many factors totally called Believes and Disbelieves or reasons in decision making. He explained that decision making of people do not rely on a single factor, but there is a group of many factors assisting decision making. In each decision making, a group of combining reasons may change, depending on people or situation.

Group of reasons in decision making may come from these factors.

1. Pull Factor includes

1.1 Goal means an object that a doer wants it to happen from his action.

1.2 Belief Orientation represents thought or knowledge that a doer understands in one subject which causes belief and influences decision making on action.

1.3 Value is an object that a doer receives from belief, attitude, or habit, which are standards to decide about good or bad. Therefore, value influences decision making.

1.4 Habits and Customs are forms of expression that a doer is motivated to express in a certain form and acceptance occurs.

2. Push Factor includes

2.1 Force is the incentive and leads to decision making and action in a doer will intend to do in what he is supported by force.

Expectations. A person has expectation that he would be promoted in career.

3. Able Factors contain

3.1 Ability means the feeling that a doer knows his ability to succeed. The doer would decide to do because he feels he could succeed in that situation.

3.2 Support means the object that a doer expects to get from others. He would make decision if there is something to support.

In this research, Reeder's theory is used to explain selection of ISO of the committees by categorizing factors that the researcher anticipated that they would influence the selection of ISO. Reeder's theory is basis in determining factors to be relevant with the theory by setting variables from pull factor, which are value, able factors, forces, support from superior, and colleagues to determine collaboration factors in the group. Additionally, expectation factors and ability are used to determine duty factors.

3.2 Theory about organization and the organizational change.

3.2.1 Organizational Structure and related theories

3.2.2 Organizational change and related theories

3.2.1 Organizational structure

Structure is what is made up to implement work-sharing and activity collaboration of member effectively. (Thongchai Santiwong, 1989 : 15 – 18)

Characteristics of structure of organization

1. Vertical and line of duty work-sharing. Normally decision power in major policies of large organizations is responsibility of 1-2 committees. However, when the organization becomes larger, there will be more committees and more work-sharing process according to vertical line, causing more line of duties in the organization.

2. Span of Control means the number of subordinates that a certain executive is responsible. The executive can control limited number of subordinates, relying on the number of coordination and advice necessary to assure that subordinates can perform effectively. Size of good control of each executive depends on various factors.

2.1 Complexity and repeat of task of subordinates. The more repeated and simple the work, the easier the executive can control the subordinates.

2.2 resemblance of task of subordinates

2.3 Skill and motivation of subordinates

2.4 The amount of task depends on roles of subordinates.

2.5 Closeness of workplace

2.6 Ability of committees to control subordinates

3. Centralization of Authority. By considering the numbers and importance of decision given to lower committees, when the organization highly centralizes, mostly decision making is done at higher level. Lower committees hardly have a chance to give their opinion. While the organization with high decentralization, some decision makings are done at high level, such as policy, but powers to decide for some types are assigned to middle and low committees.

4. Formalization is a way to control behavior and limit consideration of low committees.

5. Department is a combination of a group of people and activities together in terms of departments.

6. Operators and officers are to provide information and suggestion.

Attitude measurement

Attitude is unnoticeable , unseen, unheard, or untouchable. It is presuming system that must infer the way to notice by noticing external behaviors of people such as a certain decision making behavior of people. From noticeably external behavior, we infer how the people have attitude toward a certain thing. (Yotin Sansanayuth, 1986 : 35)

Attitude comprises of 3 basic components.

1. Understanding components

2. Emotional components

3. Behavioral components

Attitude is different from imagination in that imagination contains facts, believes, values, and option.

Therefore, attitude has positive and negative sides.

Hence, definition of attitude is the inclination to learn to respond constantly to something about likes or dislikes. (Yotin Sansanayuth, 1986 : 35)

Attitude measurement of Likert (1932) was done by choosing messages about what wanted to measure attitudes and respondents chose the answers of prepared measurement. For example, there is measurement of 20 messages, and attitude scores of people are total scores of all questions' answers between 1 to 100, in which doing the test should be analyzing each message to select measuring message, best measured attitude, and correlation of each question and total score. The questions having highest correlation with total score would be kept. (Yotin Sansanayuth, 1986 : 39)

By studying about learning, when both individual and organization develop, operators would feel that they have relation with work. Customers would receive better services and organization creates their future.

Learning Organization

Learning organization is about the organization possessing continual flow about learning opportunity and adjusting organizational culture. Learning result would help develop units in process, production, service, roles and duties of each person, as well as the result of work. Therefore, learning organization is one factor to help change and improve institution to increase effectiveness and efficiency with 12 supporting factors.

1. Make clear about strategy and have joint vision in organization implementation.
2. Support operations getting the work done by urging creativity.
3. Support administrative implementation in the way of cooperation.
4. Create atmosphere to generate learning, confidence, and open-mindedness.

5. Organization and organizational structure are flexible. People in organization participate in operation appropriately.
6. Should occupy up-to-date communication system and technology.
7. Exchange experience between individual and team.
8. Learn and develop operating process continuously.
9. Able to reexamine the operation.
10. Advocate and value learning and training throughout operation.
11. Uphold morale and willpower for both individual and group to learn at every moment.
12. Reward money or bonus to support working.

Thus, learning and developing are heart of the work and organization to become learning organization and develop to good quality system.

Learning organization differs from other organizations such as;

- Learning is integration. Everything an operator does is a part of the job, not "something special".
- Learning is process, not event.
- Cooperation is basis of all relationship.
- Individually, everybody evolves and grows in part of transforming organization process.
- Learning organization is the organization creating operators to create organization again.
- For learning organization by oneself, operators teach organization about effectiveness and efficiency of quality improvement and innovation.
- It is enjoyable and excited to be a part of learning organization.

Types of learners A certain organization contains different types of people as follows. (Vichai Thanarangseekul, 1988 : 30 – 31)

Known types : Already having been, and done.

- Resistance to new knowledge.
- No matter what level of education, they seem to have learned already.
- Sticking to what they know.
- Not seeing necessity to learn more.
- Living with a phrase "Old tree is hard to bend" and "Don't teach crocodile to swim"
- Complaining that nobody sees their importance.
- Having no interest in assigned task.
- Being the first to be laid off, when restructure occurs.

Hesitating types : This is the same, soon they will quit.

- Following determining training to reach expectation.
- This is low expectation.
- No volunteer for new assignment or training program.
- Do only what superior suggests or determines.
- Seeing as opportunities to rest.
- Many succeed because know the method.

Loving study types : If there is something new, they want to try.

- Volunteer to join learning events.
- Read professional books and magazines.
- Talk with people about what they have done, including the learning method.
- Prepare themselves to jump to the future.
- Like to test new ideas.

Moreover, the organization would survive and it is necessary to develop and improve by comparing with other organizations in society and community.

- **Comparative studies** is the process indicating about what needed to be improved by researching operations of other organizations and then bringing conclusion to improve quality and production of the organizations.

- By occurring on comparative process of its activity and the best organization in that type.

- To known what is the best? How to do? and bring into practice to make the best organization. **In order to**

1. improve the best process
2. survive in the economy.
3. compete in strict competition
4. enhance customer's satisfaction
5. take competitive edge

From this organizational structure, it can be used in research about structure and internal components of organization as well as comparative study different from others. If there are good planning, empowerment, and responsibility, it would create to effective operation, resulting to ISO quality assurance system usage. The researcher brings factors about planning, empowerment, and responsibility in operation into this research.

Hence, the research assumes that factors about people/personal, working system, and structure affect the change of attitude, behaviors, and fulfillment of system. Then they have relation with work. Customer would receive better services and organization creates their future, resulting to ISO implementation or other quality systems. Then they have relation with work. Customer would receive better services and organization creates their future, resulting to ISO implementation or other quality systems.

3.2.2 Organizational change and related theory

3.2.2.1 Leadership theories

Shaw (Shaw,1981 : 50) separated meaning of leader from leadership in that leader means position in structure of group, while leadership means process.

Halloran (Halloran, 1978: 45) defined leadership as the ability to lead others to start the changes willingly .

From study of Filler (Filler, 1981 : 7) he offered in situational aspect that there are 3 qualifications.

1. Emotional relationship between leader and follower. In some situations, member of the group support, but in some opposite situations, affective dimension is important.

2. Ranking of structure in works related structure dimension depends on clarity or ambiguity of works.

3. Power position of leader means ranking of power that chief can use with other members in the group.

All three qualifications about situation are determinants of level of agreement of group on leader. The situation causes the highest agreement is the situation having positively emotional relationship between leader and follower, possessing good structure and strict position power of leader.

At present, organization must operate under changing environment. The effective committees should have skills, knowledge, and training (Somyos Naveekarn, 1995 : 10 – 30)

1. Diagnosis. Skills of diagnosis would involve with accurate questioning techniques, understanding organizational environment, setting the form of observations, and data collection in change analysis by finding that (1) What is really happening now in a specific internal situation? (2) What should happen in the future if there were nothing changed? (3) What does a person need the most in that situation? (4) What are obstacles or forces that will stop the movement from what being now to what needed the most?

2. Operation. First step of changing process is to deliver received information from diagnosis to be a goal, strategic changing plan, and rules of operation.

Diagnosis includes at least 3 steps – opinion, problem identification, and analysis.

Opinion. Before starting to analyze a certain organization, we need somebody's opinion in considering situation of our opinion, our superior, colleagues, subordinates, outside councilor. Considering the events is to see the whole picture, creating the best thing.

Problem identification. Problem will rise, when there are conflict between what really happens, and what expected to happen. The change will involve reducing the differences between reality and expectation to be least, and it must be admit that attempt to change is not always relevant to making reality to get close to what we want the most.

Analysis. The goal of analysis is to consider that why the problem exists, fragment between problem identification and analysis might not be clear. The usage of theory and questions will help identify other theories, helping us to analyze the occurring problems in our environment and giving the way to develop strategies to operate the changes such as form of leadership, organizational structure, and goals of organization. What we can identify in the environment that causes differences, concepts and theories to assist highly motivating questions.

From leadership theory, characteristics of leadership should have effect on decision making to use ISO of college committees. Therefore, the researcher will use factors of leader characteristics and problem solving of leader into this research.

Operation will involve alternative identifications and proper operating strategies to decrease the differences between what really happens and what expected to happen the most. The possible result expectation is followed subsequently of each strategy, specifically strategic selection, and using the strategy when change occurs in the organization. Personnel in the organization must concern about 4 levels of change knowledge change, attitude change, personal behavior change, and group or organizational change (Somyos Naveekarn, 1995: 15). Knowledge change is so easily possible that this change is the result from reading books or articles, or hearing something new from respectable people. Attitude change will be more troublesome

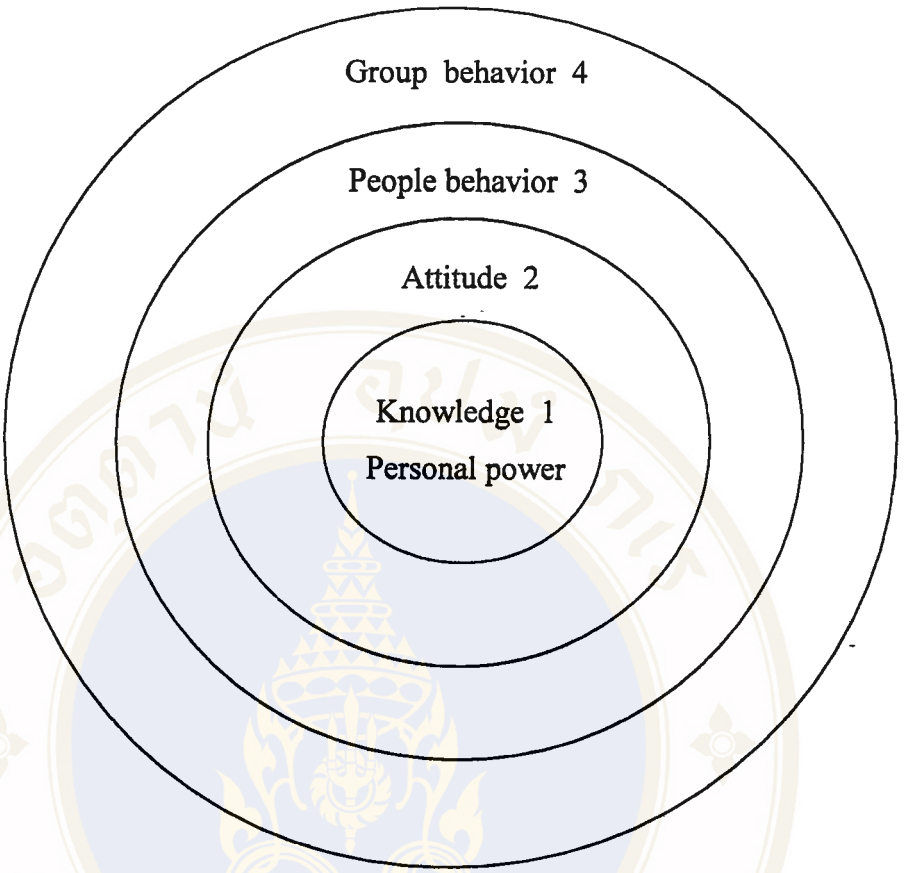
than knowledge change, because attitude has emotion involved and it might be (good) positive or negative (bad) (Somyos Naveekarn, 1995: 15) Behavioral change of people will have some difficulty and take longer time more than the change at the first steps of 2 previous levels. For example, the committees see benefits from participation and involvement of subordinates in making decisions and feel that participation makes better operations, but they will not be able to assign or share responsibility of decision making to subordinates. The differences among knowledge, attitudes and behaviors might be the occurring results that they receives in strict administrative training since they were young, and past experience makes them have these accustomed habits.

While people behaviors are difficult to change, the change will be more complex. In some cases, we try to change inside group or organization and the form of leadership of one or two committees might change effectively, but changing level of participation of subordinates for the entire organization is long-term process. At that level, we are trying to change culture, and customs developed for many years.

Level of changing group or organization is very important. When we contemplate two different kinds of change- participative change and directive change. (Somyos Naveekarn, 1995: 40 – 42)

Participative Change

Participative change will operate when people or group have already possessed new knowledge. We hope that the group will accept information, develop attitude in the better way, and commit with the direction of wanted change. At that level, effective strategy is to allow the people or group directly involved in assisting to select or determine new method for success of expected goal. This is participation of the group in problem solving. (as shown in picture below)



Picture 2 Participative change (Somyos Naveekarn, 1995: 15)

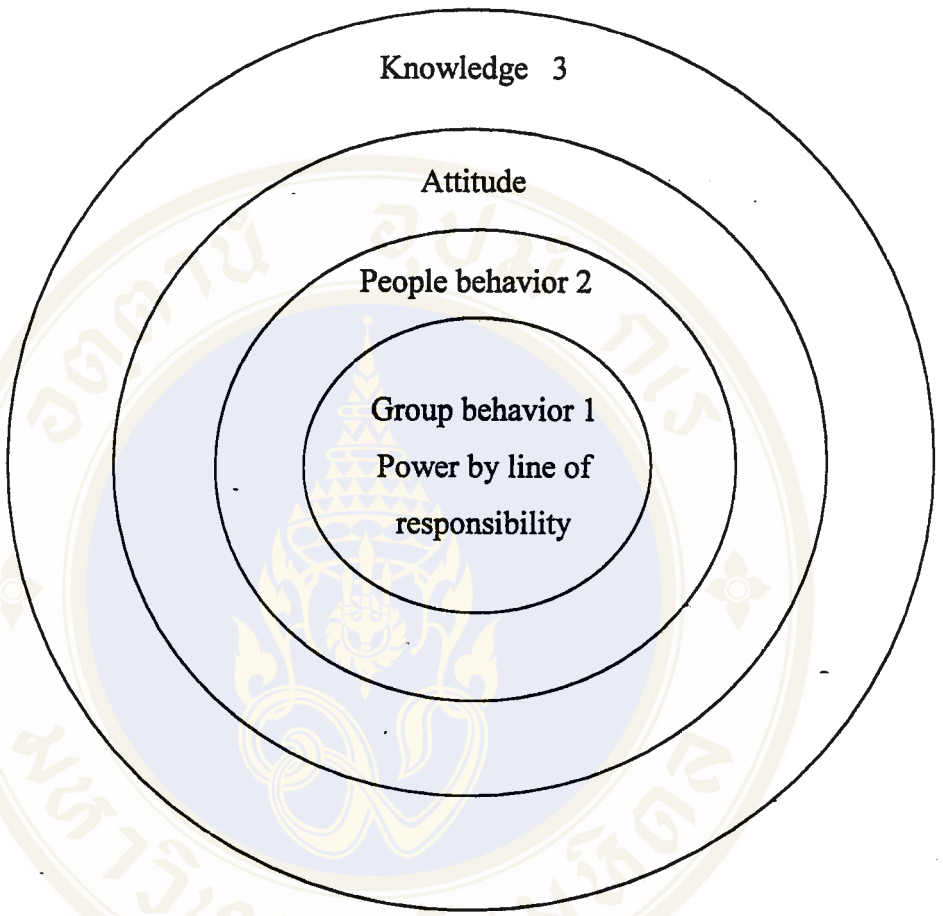
Directive Change

We all must have confronted similar situation like the following one. In the morning of a certain day, there is an announcement.

Today all members of the organization must work with operation rules type 1. This is an example of directive change. Many committees attempt to operate new ideas, such as target implementation, increase in work and responsibility, and other, by using this change of change.

Directive change will begin with changes commanding the entire organization by some forces such as senior committees, community and new laws. This course of action might affect relation system among organization at individual level of communication, and new form of behavior creating new knowledge which is

supportive or resistant to change. Directive change is as shown in picture 3 (Somyos Naveekarn, 1995: 15)



Picture 3 Directive change

Strategy of best change

In the case that we have to choose between participative and directive changes, most people tend to choose participative change. However, some said that there is no best leadership form. Therefore, the best strategy of change operation is not available. Effective change leader means a person who can adjust his strategy following specific need of the environment. Hence, participative change is not better than directive change. Best strategy depends on situations and each strategy has advantages and disadvantages.

Advantages and disadvantages of change strategy.

Participative change is suitable for working with people or group with highly success motivation, looking for responsibility, and having knowledge and experience useful to develop new ways for operations. When the change begins, these people can be responsible for more expected change operation. If these people are satisfied with the change and want to improve further. They might become highly inflexible, and resistant to change. If the change has been operated in directive change style, it will not fit with their self-acceptance and responsibility. People highly self-motivated should participate in giving advice in change process. When they have no part in giving advice, the change has been done by dictatorship. The conflict often occurs and examples of such situations always happen. In the organization that the committees have creative workers, and willing to work hard to operate in new projects, and it appears that they have no participation in the change process. This course of action generates resistance and it is not appropriate to the situation at all.

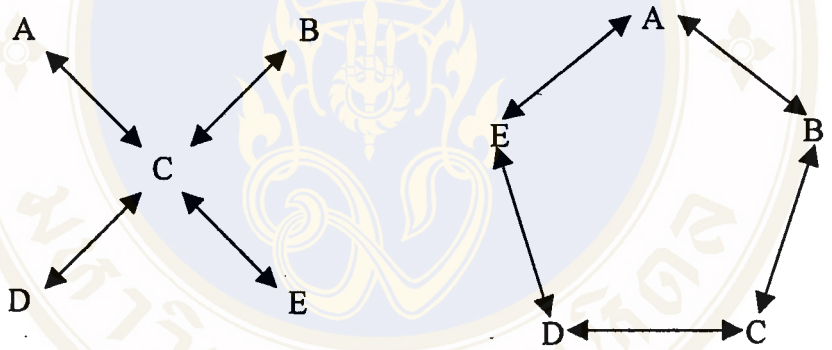
Directive change is greatly apt for the people or group with low ambition, no self-control, and no willingness for new responsibility, if they are not forced to do so. These people are pleased to be directed and determined to follow the structure by their leader.

The major differences between these two styles of change are that participative change would be more effective, when people are persuaded by leaders having personal power. The subordinates like and respect them without considering power in the line of duties. They can award or punish, if the committees have used directive change, they should be supported by their superiors and other sources of power, otherwise they might be obstructed by their administrators.

In the case of participative change, the main advantages are that when the change is accepted, the change tends to stay a long time, because everyone gets involved with change development. However, people have more commitment to change operation. The disadvantages of participative change are delay and gradual operation. The participative change might require years for major change operation.

On the contrary, the advantages of directive change is quickness by using power in the line of duties that leaders can force to change immediately. One disadvantage is that directive change tends to be stopped easily. The change will stay as long as the leaders have power in line of duties. This change normally generates hostility and hatred.

Besides, one of the most important factors that we have to consider in decision making whether we should use directive or participative change, or the combination of both is the form of communication arranged and to understand how the structure of inside group or organization is set. Before there are changes in direction to be used widely in setting structure of communication, which have two types - circular style and star style. (Picture 4)



Picture 4 Form of communication (Somyos Naveekarn, 1995: 15)

Arrow line shows two channels of communication. In the circular structure, each person can send message to two friends on each side. Therefore, the group will have freedom to communicate around the circle. The structure of communication does not identify any person is higher than others, unlike being a leader. As a matter of fact, form of communication will indicate democratic organization that all members participate in decision making. In the case of star structure of communication, (C) must certainly be in the position of leader, because C can communicate with all four other members ,and they can communicate with C or in other word, they can not contact each other member. The group shows dictatorship structure, which has C as a superior. (Somyos Naveekarn, 1995: 50 – 52)

Types of the best communication.

There is a test and finding that star structure (dictatorship) can work faster, but will power of circular structure's group members is better. All members can unite in "urgent" case and can solve problem by using all available resources. On the contrary, leader of star structure will dominate the group. Therefore, members must depend on the leader in case of emergency, as they have distant relationship. (Somyos Naveekarn, 1995: 53)

Star style communication is faster, because this kind of communication is one-way communication dominated by one person. Order is settled inside the group to limit the amount of information. For circular style communication, members of the group can communicate with 2 persons. Thus, they would take more time. However, because members of circular style send more messages, they would take advantages of more monitoring points. Therefore, they can find and correct more mistakes. (Somyos Naveekarn, 1995: 54)

Member of circular style group will participate and be more responsible. They hardly depend on just one person, because they can examine with others and they will be happier and more satisfied. Group leaders with directive style are satisfied and happy with the same reason of group members of circular style. C (Picture 4) has responsibility and sources of information and many checking points. In conclusion, C (Picture 4) has significant freedom and power. (Somyos Naveekarn, 1995: 55)

In conclusion, this experiment suggested that structure of communication can influence how people feel. Moreover, the structure of communication also influence work effectiveness for majority of group in terms of speed, accuracy, and adjustment. The committees may use both types of communication. For example, in case of lecturers in universities, a dean perceives using structure of democratic communication (circular style) which is most suitable, but in case of workers using directive style, this group will have different levels of commitment, motivation, and responsibility. Hence, the committees should use different styles of communication.

The relationship between communication and changing strategies.

Types of communications have two important relationships with directive and participative change strategies. **Firstly,** in order to operate the change strategies, the committees must consider about types of communication as well. The structure of circular type communication (democracy) is very suitable with participative change, while the structure of star type communication (dictatorship) is fit to directive change. The result of the test of Bevels will support advantages and disadvantages of participative and directive change. Even though participative change is slow, the change will create more commitment and involvement. While directive change is faster, the change will generate more dissatisfaction and hostility. **Secondly,** before the operation of change strategies in the organization, change leaders should know the structure of communication in present operation. For example, if the organization proceeds democratically with the types of communication lacking of indicating any one as a leader. The same case, if the committees try to work on democratic change in restructuring organizations, indicating clearly the status of leaders for a long time in that situation. Supervisors and workers usually have less responsibility, because the committees will always act as their leaders. Therefore, they may not be ready for democracy at the moment.

In conclusion, strategy of change operation in "the best" organization are not any strategies, even directive, participative, or combination of both. It depends on the changing situation , a main factor which should be analyzed to develop proper change strategies that are structure of communication inside group or committees in organization which is the goal of change.

When there is group or organization change, there is a need to change people behavior in the organization in order to make the change work. (Anawat Supachutikul, 1998 : 10 – 15)

To consider 3 changing steps of change process, there are unfreezing, changing, and refreezing.

Unfreezing

The goal of unfreezing is motivation and making individual or group ready to change. Unfreezing is "an ice-melting process". When there is unfreezing, we need (1) to move people changed away from his daily familiar places, sources of information, and social relationship (2) to eliminate all social supports (3) to make existing experiences of people meaningless to help them see old attitudes and behaviors valueless and necessary to be changed. (4) to keep relationship between rewards and willingness to change , and punishment and unwillingness to change continuously. (Anawat Supachutikul, 1998 : 17)

In conclusion, unfreezing represents destruction of belief and customs of people in the old ways and activities to make them ready to accept the new alternatives.

Changing

When people are urged to change, this process occurs from one of the two mechanisms (1) imitation and (2) internal change. Imitation happens when one or more forms appear in the environment. It can be anybody's form that a person can learn the new form of behavior by attempting to be like them. The internal change would come when people are set in the situation that they must have new behavior. If they want to work successfully in the circumstances, they would learn new behaviors not only because it is necessary for survival, but also because there are new needs with high motivation by new behavior. The effective change usually comes from combining 2 methods. In strategy of change, it is unnecessary that we would have to use just one mechanism. (Anawat Supachutikul, 1998 : 19)

Refreezing

The third step of change is to build stability and merge behavior to be character of people. Schein stated that if new behavior becomes internal object as learning, this would help in building stability of behaviors automatically, because it is natural understanding with personality of people. (Anawat Supachutikul, 1998 : 22)

What we paid attentions to build stability of new behavior must not disappear in short time. If we need confidence for not letting this to happen, reinforcement must be used continuously and periodically. In case of continuous reinforcement, people will learn new behavior quickly, but if the environment changes to be the environment with no reinforcement, the new behavior will vanish soon. In the case of periodic reinforcement, the disappearance will happen slower, because people will be under system that in a certain period, they will not be reinforced at all. Therefore, in the case of last learning, the continuous reinforcement should be used, but when people learn new behavior, the change to use periodic reinforcement would provide confidence that the change would last long.

One problem normally occurs in the change period is the conflicts among groups consisting of many workgroups important to the organizational success. That means these groups including formal or informal groups want to know about their goals in that it is the same goal with the organization or not. Even though the goals are different, they want to see that their goals would be responded by the direct results of working for the success of the organization. (Somyos Naveekarn, 1995 :49)

When groups or other parts of the organization have conflicts, the atmospheres among the bases of each group are intensified. The groups will compete against one another, and they would secretly destroy activities of competitors. Integral problem is how we will construct relationship among groups to be cooperative and highly effective.

Aftermath of competitions among groups.

In the competitions, each group would have high dependence inside the group, and the differences would be forgotten for awhile and loyalty would increase. The atmosphere of group will be highly work-oriented and the success of the group will be important. Leadership will lead to dictatorship and group will be more regulated. (Somyos Naveekarn, 1995 : 50)

While this phenomenon occurs inside the group, the relationship between groups will be have some sharing qualifications. Each group would start to look at other group like enemy, acknowledge distorted truth, accept only their strengths and other's weaknesses. Hostility over other groups will increase, and communication will decrease. If the groups are forced to have some connection; for example, in negotiation there will not be any group listening to others, but they will only listen to suggestions supporting the groups' argument.

Competition and response occurred may be significantly useful to the group in that the group will have greater effectiveness and motivation for success, "only factor that improves effectiveness among groups" , and argument between the committees and labors. These are example cases for this issue. It is because each group understands that being a competitor will face more predicaments in ending the conflict.

Due to the fact that reducing conflicts between groups is troublesome, protecting conflicts between groups may be better idea. In the first step, we can protect it in many ways. First of all, all committees should concentrate on benefits to integrated goals instead of the goals of subgroups. Secondly, the committees must try to advocate communication and involvement among groups more often and develop rewarding system for the groups helping each other. Thirdly, if it is possible, people should have experiences in many departments to expand their broader understanding about problems among groups. (Somyos Naveekarn, 1995 : 51)

Cooperative organization will have numerous conflicts about works needed to improve effectiveness of majority. Theses may happen because under this circumstance people can trust others, be honest and give opportunity to share information and ideas.

Organizational cultures are (1) the totaling of values, customs, and others meaning to indicate uniqueness of organization. These may be called organizational characteristics(Thongchai Santiwong, 1989 : 50), (2) values,

behaviors, and experiences of people in organization, depending mainly on leaders about knowing, thinking, and believing about how people in organization are.

Therefore, if knowing values and beliefs are changed, the assumption that all people participate in working (Assailed), it would cause changes of organizational cultures (Unsure Change).

Culture = a pattern of artifacts, value belief and understating assumption

Strengthening the organization. (Gregory M.Bounds, 1995 : 349)

1. Working as a team
2. Continuous operation

From the notion of **organizational changes**, it can be stated that organization has changes by leaders with knowledge, ability to direct, control, communication, and positive relationship with workers by allowing workers to participate in decision making. This includes all problem solving which should have relationship with **ISO selection**. Thus, the researcher takes factors about decision making, problem solving, cooperation, value-building, administration , control as well as communication into this research.

3.2.2.2 Organization Development – OD

OD means organizational development which is the process containing patterned change projects affecting the whole system. It is administration from the top implementation targeting to increase effectiveness and advancement of organization to achieve expected goals by using knowledge of behavioral sciences (Richard Beckhard referred in Santad and teams, 1993).

In process of organizational development, it has to answer that how is the status of the organization? What do you want the organization to be? How can it achieve what it wants?

Organization or unit has changes all the time both individual and organization levels, with no one can obstruct or stop. When the changes happen, workers usually react against with dissatisfaction, because they understand that change opposes their status and values. The committees then try to search for process that can be used to solve problem and control change toward the need of organization.

Behavioral science is a science studying the phenomenon about behaviors of human living together in social system. The assumption of this subject is greatly useful to implementation ,especially applying to process of organization change control.

Problems of organization can lead to organizational development to control change, such as lack of cooperation between departments, departments not working on assigned duties, working atmosphere full of competition and jealousy, lack of motivation to work, people focusing on personal needs more than organizational needs, etc.

Steps of organizational development

There are 4 steps. (Anuwat Supachutikul, 1998 : 78 – 80)

1. Data collection

It is a collection of problem status existing in organization to scrutinize and determine strategies putting proper obstruction.

Factors used to study organizational behavior in behavioral science, such as, leader status, motivation, communication, coordination, decision making, determining targets for organization, work control and working results.

Data collection method may use observation, interview, questionnaire, or all together.

2. Problem scrutiny

It consists of data analysis by using statistic tools and then concluding about how each aspect of organizational behavior would be. Moreover, it is to consider problematic situation to find causes of the problem, to determine the goal of change broadly, and to analyze pushing force – pulling force occurring from the changes.

3. Determine strategic method or intervention.

The examples of intervention are education training, implementation grid, process consultation, third-party placement, survey feedback, implementation by objective and results, inter group building, team building, confrontation building, goal setting meeting, techno-structural approach, life/career planning, role analysis planning, coaching and counseling, and laboratory training.

4. Evaluation

It has goal to find that which intervention is most effective in improving suggestion skills of people in organization, knowing progress of organizational development and enforcing rules and disciplines to make it more successful. (Anuwat Supachutikul, 1998 : 77 – 80)

Qualifications of organizational development. (Anuwat Supachutikul, 1998 : 82)

1. Organizational development involving with organizational system in total. Beckhard shows the qualifications does not mean all organization involving with OD, able to launch any system to seem to be free in planning determination, and future of the departments.

2. Organizational development is to look at the organization in system aspect. Organizations are seen as it is comprised of dependent parts. Practitioners realize that when any part of the whole system changes, and the change will affect other parts of the system as well.

3. Organizational development has to gain support from top committees. Top committees must express commitment and certain support for OD.

4. Organizational development usually use services of change agent. An agent might be a member of the organization, but he should be subsystem outsider of the organization which starts to use OD. However, the usage of change agent is increased.

5. Organizational development is the planned change. Organizational development is to analyze organization systematically, plan in details to currently improve things better, and find all necessary resources for project operation.

6. Organizational development is to use knowledge of behavioral science. Intervention of OD will be based on knowledge and sciences of behavioral science such as leadership, communication, motivation, targeting, learning, relationship among behavioral science groups of small groups, conflict implementation, attitude, organizational structure, and relationship among groups.

7. Organizational development is a long-term process. Organizational development uses many years to make changes of organizations permanently such as organizational development that may need to spend 5 years.

8. Organizational development will improve organizational ability and health. Capable organizations must have both effectiveness and efficiency. Efficiency of organization is level of achievement of organizational goals. While effectiveness of organization is the number of resources that the organizations use to produce products and services. Both concepts are different. The organizations will have effectiveness but not efficiency or in contrast. It may be stated in respect of organizational health, instead. A good-health organization is the organization that operates to reach targeted goal, sets appropriate regulations, decides by using sources of information, and rewards committees and supervisors following their task operations. Moreover, it has undistorted communication, least win-lose competitions among groups and individuals, high conflicts in opinion about works and projects, and open system, etc.

9. Organizational development is a continuous process. OD process will always change. Operators must be able to adapt existing strategies when problems arise.

10. Organizational development has center point at the changes of attitude ,behavior and result of operation, instead of individuals. However, some interventions concentrate on individuals.

11. Organizational development uses intervention of practical research. Change leaders will collect data about continuing system, analyze, repeat, and discuss with customers. Then they will work with customers, operate, and analyze again.

12. Organizational development focuses on planning activities, and goal setting. One important qualification of OD project is teaching individual and group to set measurable and attainable goals and change these goals to be well practical.

Organizational development is not administrative development. Administrative development focuses only on improvement of skills, knowledge, and Attitude of each executive, even though OD may partially involve with administrative development. Administrative development will act as a part of goals of improving ability of each department. The word OD should be understood automatically that it is a training to have quick feeling or participation in administration seminar. There are many methods to use OD by depending on needs of organizations. Lastly, OD is different from other change methods used for consulting and studying organization situations. Moreover, giving suggestions to use OD does not provide suggestions in the meanings like in the old days. They will work together closely with organization to help the organization to survive, and be effective in fast changing environment of sciences and cultures.

Most assumptions and definitions of intervention of organizational development will be relevant to theory of behavioral organization of theorists like McGregor Likert, Argyris Maslow Bennis, and Schein French. And Bell set up the

assumption of OD to be much clearer by categorizing types of assumptions relating with people as individual, group members, and organizational members as a whole.

Persons as individuals

1. Most people need growth and personal development.

2. Most people can provide usefulness to their organization more than what the organization opens the opportunities for them. The organization usually halts creative activities of organizational members (such as participation in decision making, and providing suggestions) by not rewarding or punishing them.

People as group members

1. Most people need acceptance and harmony with their work group. The work group will be more effective, if people working together cooperate more.

2. A formal leader of workgroup can not operate his leadership all the time. Therefore, group members will have to help their leader by participating in duty of leadership.

3. Not allowing to express feeling will affect badly the group operation and organizational atmosphere should be opened-wide.

4. Levels of support and confidence among people will be lower than expectation of most organizations.

People as organizational members.

1. Most committees in organizations are workgroup members overlapping and behaviors of group committees will highly affect relationships among groups.

2. What happens in any subsystems of organizations (such as personal study change and goal) will affect and be affected from other subsystems of the entire organization.

3. The end of conflict in the way that one party has more and celebrates, and another party severely lost may be suitable in some situations, but it is not a good way to solve problem for most organizations in long term.

Implementation by targeting

Implementation by targeting is one method of OD, used widely in many organizations in the past 10 years. The implementation by targeting has major components as follows. (Somyos Naveekarn, 1995 : 340)

1. Determining possible and measurable targets
2. Participation of subordinates in determining the goal.
3. Periodic Evaluation of operation is to consider success for the goal.
4. The organization has to commit to the project.

Each executive from top to down level of the organization must set up their goals. These goals must be relevant to the goals of the entire organization and all committees must participate in setting up the goal of higher departments.

Reversion survey

Reversion survey is the systematic method in data collection about the entire organization. The steps of sending back information to all groups at all level of the organization, asking the group to use information as basis in planning and solving, and reversion survey are as follows. (Somyos Naveekarn, 1995 : 341 – 345)

1. Basic planning is done by top committees to consider the appropriate survey for the organization.
2. Questionnaires are sent to all members of the organizations or every department.
3. Analyzed information and problem will be identified.
4. Resubmitting information to each executive is done by inside or outside organizational development experts.
5. Each executive evaluates information and discusses with subordinates for consideration about information.
6. Superiors and subordinates plan to solve problem together.

3.2.2.3 Process Consultation

Process consultation involves changing process used to work for success. The processes of work are form of communication, roles of members,

regulation to solve problem, Standard and rules of group, and relationship in power and duty. Process change will help people to be flexible and workgroup will become more effectiveness. (Somyos Naveekarn, 1995 : 350)

Process consultation requires some outside people (perhaps OD consultant) observe the work of the group. The consultant will consider how communicating group is, how it makes decision, and so on. The consultants also see that who speaks, who listens, who suggests and who makes decision. This information will be resubmitted to groups and members will discuss about weaknesses and strengths of the existing process that the group will develop process to be higher flexible and effective.

From the theory about organizational development and process consultation, it can be applied with this research about environmental factors, including economy, society, and other organizations, which make changes to make organization survive and be effective in work. The researcher takes variables of social environmental factors. Moreover, other organizations have set budget plan to study in this research.

Therefore, **the researcher has set assumption** about knowledge, knowledge assumption, ability, changes, positive attitude, behavioral changes of people and organizations affecting efficiency of the system.

Apart from the theory of organizational structure and the change of organization, there are other theories applied with this research.

3.2.2.4 Organizational theory by Joan Woodward. (Joe Kelly, 1969 : 151)

Joan Woodward demonstrated structural features of organization that have relationship with technology and success of the organization. In the case of using highly of technology and using more equipment, organizational structures should be work-sharing types, assigning tasks according to skills. It indicates clearly commands by power. There are well-patterned and clear rules and regulation. People will know what to do in a certain situation. There exists motivation by using economic system as

relationship links. Inside group relationship will be vertical. For vertical communication, a leader will be a dictator in assigning task.

If the organization is flexible, people have skills to operate highly and to operate by orders or customer's needs.

Applying theories to the research in the concepts that

If studying, learning and producing graduates are to serve the needs of those involved inside the organization should have flexible structures which are

1. Sharing works in many activities, therefore, necessary to be highly responsible.
2. Line of commands has decentralized power and low level workers take part in policy decision.
3. Work and regulations are flexible, when the problem happens with someone, he can fix it himself.
4. Motivation by using economic factors and social acceptance.
5. In-group relationship is horizontal.
6. Democratic leaders give opportunities to subordinates to join decision-making.
7. Communication works horizontally and vertically.

Therefore, the researcher will use leadership factors, power sharing, responsibility sharing, economic system, communication, and proper technology in this research.

Hence, the researcher set up the assumption about work system and structure affecting the changes of attitudes in select quality system.

Organizational theory of Harold J. Leavitt and Ronald A.H. Mueller (Joe Kelly, 1969 : 152)

Harold J. Leavitt and Ronald A.H. Mueller mentioned that forming organization must have structure about communication which is communication with other people about job assignment that might be one way or two ways. Two-way communication can use returned information to fix communication, making

communication more correct and reliable. For one way communication, it provides usefulness in aspect of quickness and accuracy in simple level, such as informing to operate.

Applying theory to use in the research of communication.

Theory can be used for communication and exchange information inside and outside work unit by being both one way and two way communication depending on situation. Furthermore, communication should affect ISO selection. Therefore, the researcher will consider communication factors in this research.

Organizational theory of Frederick W.Taylor (Joe Kelly, 1969 : 5)

This theory stated that naturally people are lazy, do not want to work and to take responsibility, but want high rewards. Therefore, work implementation to achieve goals may be done directly and indirectly. Direct method is to force to work. On the contrary, indirect method is to use economic incentives, such as money reward which would draw the maximum work out of people to have work with effectiveness and frugality.

Applying the theory.

Most people do not want to work and to take responsibility, but want high rewards. This can be applied in that making people to work more effectively should have rewarding, like (2-step) salary promotion which would get evaluated from themselves and committees. Therefore, it might be stated that directing the affairs, control, empowerment, motivation and economy should have effects on ISO application. Thus, the researcher uses factors of directing the affairs, control, empowerment, economic system to study in this research.

Organizational theory of Fayol. Gulick and Mooney. (Ouichai Chaba, 1991 : 158)

This theory believes that people are lazy, avoid responsibility, but want high rewards. Hence, it is the task of the implementation to find the standard method to manage the organization. Henri Fayol used implementation principles

consisting of planning, organizational implementation, directing or ordering, coordination and control. Gulick used principles of POSDCORB, comprised of Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting. Mooney stated that administration is a form of cooperation of people, so it would focus on cooperation horizontally and vertically.

Applying the theory.

Most people are lazy and avoid responsibility, but want high rewards. The good administration will cause high effectiveness of work, and frugality by implementation principles of Gulick and Mooney about cooperation, coordination, and working. Therefore, the research uses factors of planning, directing, control, and budget in this research.

Organizational theory of Mary Parker Follett (Ouichai Chaba, 1991: 162)

M.P. Follett mentioned that conflict is unavoidable. It always appears in human society. Conflict elimination will bring advancement, and solving conflict can be done in three ways.

1. Coordinating the conflict.
2. Compromise
3. Domination by leader

Applying the theory

Generally organizations usually have conflicts, but solving conflicts will develop the organizations to be more advanced. Therefore, if conflicts occur, soling by coordinating conflicts will help develop the organization to be more advanced. Thus, the researcher uses factors of coordination, and problem solving in this research.

Theory of social sciences of Barnard (Chester I Barnard , 1938 : 134)

Barnard mentioned that administration should concentrate at Co-Operative System, because organization is system of cooperation of people in the

organization. People will cooperate, because incentives and willingness to work of people by using communication system everywhere.

Applying the theory

This theory focuses on willful cooperation in working, resulting from motivation that leaders use by having communication (command) as linkage. Therefore, the researcher uses factors of cooperation and communication in this research.

Organizational theory of Alfred P. Sloan (Kitti Tayakanon, 1991: 165)

A.P. Sloan originated the concept of empowerment in organization. If the organization has appropriate empowerment by supporting initiative idea, and higher responsibility. This will help separate decisions for the committees at any level. Also, it creates good flexibility and cooperation. In the meaning of A.P. Sloan, it means to hold work principles with (centralized) policy and to decentralize in administration.

Applying the theory

Appropriate centralization will cause good deed in coordinating control, share works by specialization, and generate economies in working. If there is proper decentralization by encouraging the committees to be creative and more responsible, it will help separate decision makings to the implementation at all level. The researcher uses the factors of directing, control, and empowerment to study in this research.

Organizational theory of H.A. Simon (Joe Kelly,1969 : 5)

H.A. Simon concentrated on organization as the organization of living creatures in which people in the organization have need, motivation, ambition, knowledge, limit ability to make decision. Accordingly, this focuses on decision making about choosing to do something relevant to human need and behave in limitation of their understanding and work environment, such as regulations or how

group behaviors are, how they understand these things, how they belive and their behaviors being in that way.

According to H.A. Simon, important factors in decision making are

1. Is there enough information for decision making?
2. If enough, is there ability to study, and research the information ?

Therefore, theory of decision making is that it has clear and narrow point of analysis at people, and has science principles as well as calculation in mathematics to find the best alternatives.

Applying the theory.

Theory of H.A. Simon focuses on people decision making by using science principles and calculation in numbers. In finding the best alternatives, organizational implementation occurs because the result of decision making from numerous data collection. If information implementation is effective (having collection tools and good analysis), decision making for alternatives will provide ultimate results. Thus, the researcher uses decision-making factors to study in this research.

Theory of Elton Mayo (Joe Kelly, 1969 : 7)

Elton Mayo, one of the founders of human relation process, stated the concept of open communication between supervisors and subordinates. Giving opportunities to subordinates to participate in decision making democratically, taking care, and friendliness will increase productivity.

Applying the theory

If applying human relation process correctly, it will help improve the atmosphere in organization, directing all parties to work together at the best. When people are highly satisfied, productivity will increase. It can be said that giving opportunities to subordinates to participate democratically, and taking care of and

accepting them will improve the work. Thus, the researcher uses directing factors to study in this research.

Organizational theory of K. Lewin (1951 : 175)

K. Lewin is an behavioral scientist. He had studied small group of people to understand the advantages of participating in the group and increasing interaction between group members. If there is atmosphere creation to fit the work by allowing each party to give opinions freely, it would lead to cooperation in problem solving of the organization.

Applying the theory.

Cooperation of people in the group, giving opportunities to everyone to give opinion freely, and trust in one another lead to better change and have effects to develop organizations. The researcher uses factors of cooperation and problem solving to study in this research.

Organizational theory of F. Herzberg (1959 : 9)

Frederick Herzberg created motivation theory in working to increase productivity in the organization and good relationship among personnel. The factors motivating work are success, giving responsibility, advancement to be satisfied with work.

Applying the theory.

Giving responsibility, advancement, or success is motivation to create job satisfaction which would increase productivity in work and build good relationship among personnel. The researcher uses factors of empowerment, sharing responsibility, position, and duties to study in this research.

Organizational theory of E.L. Trist and K.W. Bamforth (Kitti Tayakanon : 1991 : 179)

E.L. Trist and K.W. Bamforth indicated that group power comes from closeness, understanding and dependence among people. Besides, relationship

from rules and regulations has relationship with performance in productivity increase and will power of people in the organizations.

Applying the theory.

Social components have effects on morale and willpower of people in the organization which should consider about external environment, a social component from group of people outside the organization.

External economic factors	=	characteristics of input and output like people, objects, money, and guest speaker.
Internal economic factors	=	Principles in internal resource implementation.
	=	Pension system about salary, position promotion, and other rewards.
External political factors	=	People interested in the issues have benefits from policy of internal political factor units
	=	Ways of empowerment practice and responsibility.
	=	Grouping and separation
	=	Hand-over position system
	=	Regulation system

Therefore, the researcher uses factors of environmental factors in social sciences to study in this research.

Organizational theory of J. Thompson, Katz and Kahn. (Joe Kelly, 1969 : 10)

J. Thompson, Katz and Kahn concentrated on the organization in open system, in which reaction among components and the whole part of organization and economic, social, and political environments in policy setting.

Applying the theory.

It is the organization study which is open system affected by external environment, such as society, economy, and politics. It generates understanding to decision making in policy setting. Moreover, external economic factors of the organization need to have import factors and to try to sell more manufacturing products. Thus, the researcher uses environmental, economic, and social factors to study in this research.

Therefor, from all organizational theories, the research has assumptions that factors about people, work system, structure, technology, and environment have effects on the changes of attitude, behaviors, and efficiency of system.

4 Related research about quality assurance selection.

Before Nursing Colleges under Pra-borommarajanock Institute will choose the appropriate quality assurance system, they should study many quality assurance systems that could be used with their organizations and generate highest benefits. Moreover, the quality assurance systems in other countries have been studied as follows.

4.1 Quality assurance system of other countries.

4.1.1 Quality assurance system of England

England is a country that has educational implementation for many centuries. Two first universities of England are Oxford University and Cambridge University, found in 12th Century and have operated until now. There are very few changes in educational implementation system, because conception of conservative educator views that the university should maintain the community of academics and value of original education more than to let the flow of industrial development of government to intervene, and change the roles of the university from origin. (Vipan Watanacheep, 1998 : 13)

In educational administrative system, England still maintains history and origination of institutions. Universities in England have quite high freedom to manage their education. Furthermore, British government has financial supports for more than 80 percent of budget, and it merely took part in university affairs seriously around World War II, by setting up Ministry of Education in 1944. This considers being the start of administrative system by central part of the country. (Vipan Watanacheep, 1998 : 14)

Regarding the practical patterns of the educational quality assurance, they consist of having the external inspectors, using the "Her Majesty Inspector" system, that provides inspectors who will go to inspect the educational standard by checking the standard of student acceptance, the lecturer quality, the readiness of places, studying tools and resources of school, and the courses of study. These were not the central standard. Later, the educational system had been reformed and set "the National Council for Technology Awards" for granting certificates and guarantee curriculum, lecturer and educational resource as well as criteria of certificate granting. Such National Council is the first central unit of the higher educational standard control. (Power, 1995 : 95)

The British quality assurance is the inspection from the external and internal institutions with the 3 key procedures as follows; (Kasem Wattanachai, 1995 : 7)

1. Quality Control is the responsibility of individual institution in setting methods to control the quality of teaching and studying.

2. Checking the mechanisms of "Quality Control" is the responsibility of central higher education institutions called "Higher Education Quality Council (HEQC)" who stresses on level of institution inspection concerning the suitable quality control methods, and making decisions about patterns which include sub-activities such as information and document aggregation, inspector authorization for those who are educationally qualified and neutral, institution visiting that allows inspectors to meet school implementation, lecturers, personnel and students, paper

reporting concerning opinions to public as the "Public report" which is the result evaluation and giving suggestion by not comparing among institutions.

3. Study Quality Assessment is the responsibility of higher education budgeting unit named "Higher Education Funding Council (HEFC)" and it is the assessment in discipline levels by focusing on the study effectiveness, and making decision on contents , which are a collection of information or paper document of itself assessment. This Council will consider reports, if they are satisfied, they need not to go checking. If not satisfied, they will assign inspectors to go visiting and examination then, conclude the score level and report as well as publish as "Public report".

4.1.2 Quality assurance system of the United States

In the beginning stage of the educational administration of the U.S., it adapted patterns from England in both educational arrangement implementation and educational quality assurance that is having "the Board of examination" who are educationally qualified from outside, lecturers, implementation of educational institute, and oral test for the last-year students (Vipan Wattanachieep, 1998 : 17)

At present, the structure of American educational implementation has been applied for the whole 50 states. Moreover, there are laws in each state that give mentoring and controlling power as well as development of the state higher education. However, practically, governmental implementation organization does not totally perform such duties, it allows each educational institution to perform tasks freely. This results the high competition and development among educational numerous institutions without encumbrance. This turns out various patterns of courses of study. The patterns of educational quality assurance becomes the self-directing.

The institutions performing the main duty of the educational quality assurance of the state higher education are

1. The nationally and regionally educational accreditation association. This organization is the key unit in the educational quality assurance and independent unit, setting from the aggregation of grouping of higher education institutions with the objectives to coordinate, control, monitor the educational standards among

educational institutions. This is to diminish the intervention of government sectors by emphasis on readiness checking and ability of implementation skills of educational institutions.

2. Professional association is the autonomous unit. This is the aggregation of professionals from each discipline or organization in the related discipline to control the educational standard and making a living in that profession. This unit aims to inspect the readiness and ability of educational implementation in each area to certify the educational course level of study in each professional area.

3. The Educational Section of each State is one of units that has roles in the higher education quality assurance and perform the duty to license the new higher education institutions or new curriculum setting.

4. Internal inspection for higher education institutions. Quality maintenance mechanism inside the institutions is self-checking for the institutions, considering the most important part for accreditation system. It makes the institutions develop form and quality checking method, which are in the form of course of study evaluation follow-up by external unit focusing on the institutions to have self-study.

4.1.3 Forms of educational quality assurance of American higher education are

1. Approval for setting up institutions and opening courses of study

2. Accreditation. When the institutions are approved to operate, they have to file in for accreditation from accreditation associations in national and regional level as well as professional association, including

- Certified-standard preparation
- Self-study report preparation
- Appointing qualified committees in disciplines to visit the institutions.
- Voting for approval.

After operating for a certain period, the institutions must file in for accreditation evaluation again to assure that the institutions still maintain the educational quality.

4.1.4 Educational quality assurance system in Australia.

Educational implementation in Australia follows British style, focusing on evaluation and activity checking by internal units. Cuttance (1993) described the quality assurance process that it comprises of two activity evaluation.

1. Quality Audit is the process in checking mistakes in operation by comparing with the set standard for the operation process.

2. Quality Review is the process in improving product design checking. This process or system has the purpose to make highest effectiveness. Therefore, Quality Review is responsibility of each institutions and work groups consisting of people from outside and inside the schools to provide basic services supporting school development. It causes grade improvement with 10 steps, as followings. (Cuttance, 1993 : 774)

- Setting the formal checking by quality assurance units
- School preparation for checking and self-evaluation.
- Choosing the proper methods for inspection.
- Scheduling for self-inspection with working group.
- Reviewing the inspection.
- Preparing preliminary report
- Identifying suggestions to develop further
- Conclusive report by working group to do the report within 22 days from checking day.
- Sending back the report
- Operation, after checking, by the schools within 4 weeks

4.1.5 Quality assurance system for higher education in Thailand

Higher Education is the highest education intending to develop people to various disciplines. The graduates are considered those who have knowledge in sciences that have been studied sufficiently to be basis for making a living. Moreover, They can be the keys to develop Thailand. (Wanchai Sirichana, 1996 : 6)

Therefore, the work units involved must try to produce quality graduates for society and for the institutions to administer education with quality and effectiveness. With focusing on improving education, it needs to have proper quality assurance system to be tools to operate further. Setting quality assurance system must set internal quality assurance inside the institutions by three steps.

1. Quality Control
2. Quality Assessment
3. Quality Audition

Good quality assurance must result from willingness and needs to control quality on the basis that if educational institutions have quality and standard in studying implementation and related components, they will produce quality graduates.

Forms of educational quality assurance of colleges in association with Ministry of Public Health.

Quality assurance of Nursing Colleges under Pra-borommarajanock Institute, Ministry of Public Health, consists of three operation parts.

1. Internal Quality Control is the most important part of quality assurance system and standard of the institutions. Nursing colleges have set internal quality control system by components, including philosophy and objectives, course of study, personnel, administration and budget, building and educational facilities, library and educational media, activities, students, research measurement and evaluation, relation communities, and also setting monitoring system and internal operation evaluation. Moreover, they have prepared operation report which is the way of development and improvement for all drawbacks to generate effectiveness and efficiency.

2. Quality Auditing is the monitoring from qualified committees from outside the colleges to work in monitoring quality of educational implementation of colleges by studying data from self-evaluation report and visiting the colleges.

3. Quality Assessment is the evaluation of monitoring results. It is the evaluation of educational quality assurance for entire project to lead to develop and improve educational quality assurance system.

4.2 Related research about selection of high educational quality assurance system. (Abstract Quality Systems and ISO 9000 in higher education, 1996)

From related research about quality, the concepts about quality widespread and accepted. In this report, it focuses on general quality system, and ISO 9000. From the report of higher education institution survey, some institutions use ISO system and some can be accredited, some are working on it. ISO system can be used with some parts of the institutions, not entire institutions. There are suggestions that it is possible to use ISO system with some parts, not the entire institutions. (Robert, 1996 : 3)

Therefore, this research focuses on where, why and how the institutions uses some parts of ISO as standard. This can be described broadly.

- ISO system is widely used in United Kingdom, AUSTRALIA / NEW ZEALAND and it makes the institutions accredited. Therefore, they use this system for the remained ability.
- The institutions have numerous sub work units. Thus, they have appropriate quality system. However, there are differences, so they use it for some work units.
- Higher education institutions have different and various activities, so they should have system to have the same standard.
- Asking for accreditation by monitoring from outside people. In fact, this should be checking system and more participation in operation.
- Using for generating systematic work.
- Using to have effects in internal quality inspection, making customer confident.
- Using it to create quality to system. It can be found all the operation.
- The system will operate well, with time, resources, and cooperation with all parties. And when they use the system, there are more questions for example,
- Can quality system generate people's responsibility?
- When it is used, is there continuous development?
- Can we use this system to ask for accreditation from higher education organizations or work units?

4.3 Related research with industrial quality assurance system.

Somchai Puakbuaksook (1998) studied and analyzed the results of using group activities, quality in industrial business, the results of using quality group activities or QC activities in business and industries in Thailand. The analysis is evaluating the efficiency received from quality group activities. The research found that industrial businesses that have quality activities, making good benefits to product quality. There is quality development happening all the time. Delay in sending products to customers or consumers, cost of production reduce. Products have more quality in standard. Therefore, to make manufacturing industries have continuous development, quality group activities are necessary to be used widely in production services. At present, there are few QC activities in industrial businesses after comparing with the number of the whole industries of the country. It is because entrepreneurs do not see true advantages and no serious support from the government.

From studying basic information, it is found that quality group activities affect ISO certification. Industrial businesses having continuous standard group activities mostly accept ISO standard. To maintain ISO standard, quality group activities are necessary.

From studying theories, textbooks, and related documents and researches domestically and internationally reviewed previously, it can be concluded major factors related to this research as followings.

Table 2 : Quality implementation factors in relation to quality implementation theories, researches and concept.

Related Quality Implementation Theories and Researches	Quality Implementation Concept	Quality Implementation Factors
1. Decision Making Theories	- Activities about selection that the committees choose one practical method from many methods to find the best alternatives.	- Decision Making
1.1 Rational Choice Theory	- Factors having relationship with action selections that are satisfaction, opportunity, and benefits.	- Decision Making
1.2 The Multiple Factors Theory of decision making and social action	Pulling actors about value, reinforcement factors from supervisors and colleagues, including expectation, ability related to action, and decision making.	- Cooperation in group - Position and Duty
2. Organizational Structure	- Setting up the organization needs planning, Empowerment, and sharing responsibility appropriately to achieve the targeted objectives.	- Planning - Empowerment - Sharing responsibility

Table 2: Quality implementation factors in relation to quality implementation theories, researches and concept.(Cont.)

Related Quality Implementation Theories and Researches	Quality Implementation Concept	Quality Implementation Factors
3. Leadership theories	- Ability to lead others to follow in making changes intentionally. Sometimes it might need to use power inside the project or proper process.	- Leader characteristics - Problem solving
4. Organizational change	- The changes in the organizations have to change firstly at people insider the organizations about changes in knowledge, attitude, people behavior, and group or organization.	- Cooperation in group - Value - Communication - Directing affairs - Control
5. Organizational development	- Is the process changing systematically to increase effectiveness and advancement of the organization. It must be planned ahead and cooperate both inside and outside organization.	- Planning - Budget - Social system - Other organization

Table 2: Quality implementation factors in relation to quality implementation theories, researches and concept.(Cont.)

Related Quality Implementation Theories and Researches	Quality Implementation Concept	Quality Implementation Factors
6. Giving suggestion	- Giving suggestion about process involved with work process change. It might be people from inside or outside organization.	- Social system - Other organization
7. Organizational theory of Joan Wood ward	- Organizational structure and technology related to success of work and organization.	- Empowerment - Sharing responsibility - Economic system by money promotion as motivation. - Leader characteristics - Communication Proper technology
8. Organizational theory of Harold J.Leawitt Ronald A.H. Mueller Chester I Barnard	- Setting organization must have structure in communication. It might be one way or two ways to cooperate in building success and quickness of work.	- Communication

Table 2: Quality implementation factors in relation to quality implementation theories, researches and concept.(Cont.)

Related Quality Implementation Theories and Researches	Quality Implementation Concept	Quality Implementation Factors
9. Organizational theory of - Frederick W. Taylor - Gulick and Mooney - A.P. sloan	- People do not want to work and be responsible, but want high rewards. Therefore, rewarding and salary promotion by self assessment and committees' evaluation will improve effectiveness of work. Besides, it has to have good administrative principles following POSDCORB principle.	- Economic system - Planning - Empowerment - Sharing responsibility - Directing affairs - Control - Budget
10. Organizational theory of Mary Parker Follett	- Creative conflicts create advancement for organizations, solving problem from conflicts by which coordinating the conflicts will highly help creative.	- Problem solving - Cooperation
11. Organizational theory of H.A.Simon	- Decision making of people by using scientific principles calculating into numbers to find the best solution.	- Decision making

Table 2: Quality implementation factors in relation to quality implementation theories, researches and concept.(Cont.)

Related Quality Implementation Theories and Researches	Quality Implementation Concept	Quality Implementation Factors
12. Organizational theory of - Elton Mayo - K. Lewin	- Widely Open communication between superiors and subordinates and giving subordinates opportunities to make decision. While each party freely give opinion, it will lead to solve problem of the organization.	- Cooperation in group - Problem solving
13. Organizational theory of F. Herzberg	- Success, advancement, and assigning responsibility are motivations generating satisfaction in work.	- Sharing responsibility - Empowerment Position/duty
14. Organizational theory of E.L.Trist and K.W. Bamforth	- Socially group power which have closeness and dependence among one another, including willpower to work.	- Social system
15. Organizational theory of J. Thompson Katz and Kahn	- An organization is open system relevant to external environment in economic and social system.	- Economic system - Social system
16. Selected researches about quality assurance system selection of Robert	- Studying ISO quality assurance system about that it is possible to use with educational system	- Other organizations

Table 2 : Quality implementation factors in relation to quality implementation theories, researches and concept.(Cont.)

Related Quality Implementation Theories and Researches	Quality Implementation Concept	Quality Implementation Factors
Lundquist, 1996. Related researches about industrial quality assurance of Somchai Puakpuaksook, 1998	- Quality activities affect ISO standard certification.	- Other organizations

5. Concept frame development

From theoretical concepts and related researches about factors related to selection in this research, they are applied as followings.

Age is number showing living and existing in terms of years. Growing older indicates passing life for a certain period, and increasing by periods. Moreover, in everyday and every time of growing older, More stories pass in life and these stories are builder of more life experiences to learning more about life and facing problems and obstacles. Therefore, age should be related to experiences about selection and changes which would happen.

Working time is a factor related to work units or organization in respect of commitment to the organization. Working people must be bound to the organization more than those who work for the organization in shorter period and they know about information system, operation, nature and components of the organization.

Position and duty are activities or operations in the organization of people in similar of different characteristics which would affect selection that could be the same or different for inside and outside the organizations by their positions and duties.

Cooperation is to provide joint action and assistance to work units or institutions and to practice by rules. If there are more cooperation in any unit, it would help that unit to achieve the objectives of work quickly. Therefore, cooperation is important and should exist in any work units and in any kind of work.

Problem solving is problem analysis, finding ways to solve problems, choosing the way to solve problem, and take the way into action. If the chosen way to solve problem is the best solution in that time, it would make changes into better track.

Decision making is thoughts and actions leading to choosing an alternative from many to find the good and proper way by solving conflicts with hope to create highest benefits to the organization.

Leadership is characteristics of leadership in which previously in Thai society, leader will determine operating policies and changes, which need policies from the leader. If the leader is democratic, or autocratic, it would have an impact on that organization.

Values toward institution is the concept about people that should feel or behave. If any organization has similar value of people in the organization, it would affect the changes to be in similar and in positive way.

Communicating is the contact between people, organizations, or networks, which is a part of knowing, receiving, and exchanging knowledge and information. This would affect selection and changes.

Directing affairs or command, job assignment, and empowerment is a part affecting objective accomplishment. If the committees are able to motivate and persuade people in the organization to accept work and operate to achieve objectives.

Directing affairs or command, job assignment, and empowerment is a part affecting objective accomplishment. If the committees are able to motivate and persuade people in the organization to accept work and operate to achieve objectives.

Controlling is action to adjust or fix any operation to reach determined objectives or goals by using information as basis. Therefore, control is a factor related to operation of the organization to work in the same form.

Budgeting is a plan showing objectives and goals of projects of the organization in terms of numbers (money). Mostly if there are budgets, the operation will be smooth, and there is opportunity to succeed. However, if there is low budget or no budget, it would affect selection and changes as well.

Planning is the process in decision making in advance about what to do, when to do, and who to do. If the organization has good planning, it means there are people operating in the tasks to achieve objectives. If there is poor planning or no planning, the organization would be definitely struggled.

Sharing responsibility is sharing works proportionally based on specialization of each party. It is shared responsibility in the organization to work together, because sharing works by specialization will help to accomplish objectives and using people to match with the jobs and practitioners are satisfied and accept assigned tasks.

Technology is knowledge and method used to change inputs to be services or good outputs. Using new technology, using tools, and development with sciences to be modern will help learning and getting information to make the organization to be modern and to change appropriately for present world.

Economic condition is the system about expenses. If expenditures are more expensive and higher, it would affect selection to have more expenses. The higher the living expenses, the more the impact on selection. Moreover, for selection, the people

who choose may depend on principles of frugality, worthy value, and cost effectiveness.

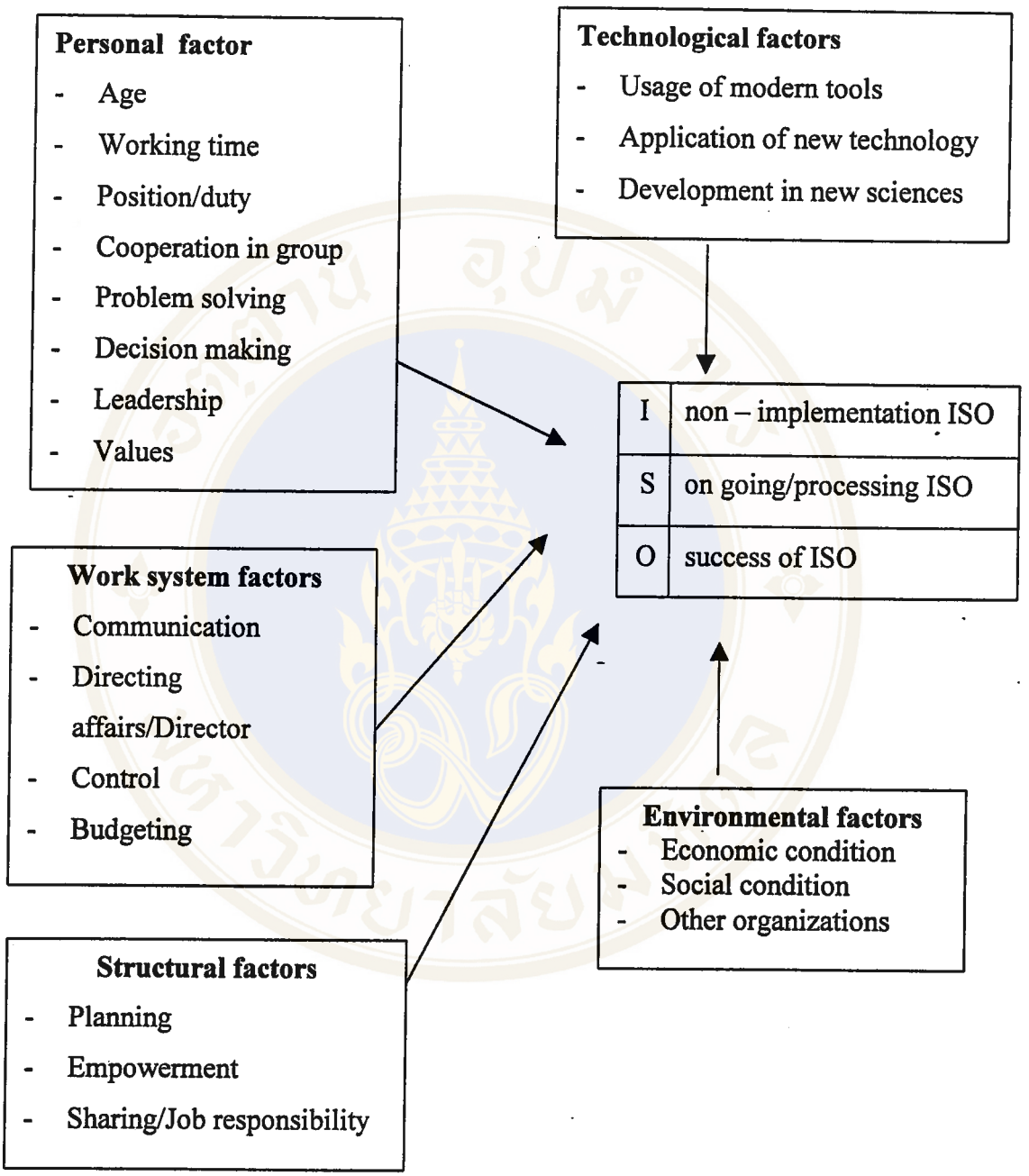
Social condition Thai society in the past was the society of leader and follower. The leader will manage every affairs in the work units. If the leader have knowledge and vision, it would help to develop the organization, but the trend of Thai society has been changed. Therefore, the committees might manage by giving workers to express their opinions and participate in determining objectives and the way to work more and in administration and implementation .

Other organizations. Each organization has different way to manage internal resources. In present world, there are more competitions. Organizations compete to make their organizations acceptable to external world. Therefore, It is necessary to have comparison of their organizations. If internal resource implementation of the organization has less quality comparing to other organizations, it needs to improve and develop quality of its organization to be more than others.

The concept frame of research

In this research, the researcher uses the concept of social science theory, organizational theory, and psychological theory as the core of explanation. The concept frame is shown as in Picture 5.

The concept frame of research



Picture 5 The concept frame of research

CHAPTER III

RESEARCH METHODOLOGY

The objectives of this research are to study the factors that relate with the success of ISO system of the committee of Nursing Colleges under Praborommarajanock Institute, Ministry of Public Health. By studying from the deep interviews about knowledge, competency, intention, changes in individual behavior, and changes in organization behavior, there are effects on organizational changes and it is expected to have relationship with the success of using or implementation ISO system.

1. Population and sampling
2. Tools for research
3. Finding quality of tools
4. Data collection
5. Data analysis

1. Population and sampling

Population in this study are committees of Nursing Colleges under Praborommarajanock Institute, Ministry of Public Health, which are 35 locations in every part of the country. They are 12 in Middle region, 2 in Eastern region, 7 in Northwestern region, 8 in Northern region, and 6 in Southern region, with 1,400 personnel.

Determining Sample Size In this research, sample size is determined by specification.

1.1 Nursing Colleges that do not choose the ISO quality system by random method from each region are Borommarachonanee Phayao Nursing College, Sri-Mahasaracharm Nursing College, Borommarachonanee Chonburi Nursing College

and Borommarachonanee Trung Nursing College. All 4 colleges use other quality systems which are not ISO system. Thus, the researcher selects all 4 colleges by random method (to draw lots) by using 10 – 15 samples for each group.

1.2 Starting from selecting Nursing Colleges that choose ISO quality system, then each Nursing Colleges will have a group of quality committee. These committees will have different positions, including chairman, vice chairperson, secretary, and committees, totaling 10-15 people. After asking, the Nursing Colleges that choose ISO system are as followings.

1. Borommarachonanee Bangkok Nursing College
2. Borommarachonanee Ratchaburi Nursing College
3. Borommarachonanee Nakornratchasrima Nursing College
4. Borommarachonanee Saraburi Nursing College
5. Borommarachonanee Nopraratratchatanae Nursing College
6. Borommarachonanee Chai-Nart Nursing College
7. Borommarachonanee U-Dontanee Nursing College

All 7 colleges are under operation. Therefore, the researcher selects all 7 colleges by using the 8-10 samples at each college.

Afterwards, the researcher monitors on each group as followings.

Group 1 : non – implementation of ISO includes Borommarachonanee Phayao Nursing College, Sri-Mahasaracharm Nursing College, Borommarachonanee Chonburi Nursing College and Borommarachonanee Trung Nursing College with total of 50 questionnaires.

Group 2 : processing in implementation of ISO consists Borommarachonanee Nakornratchasrima Nursing College, Borommarachonanee Saraburi Nursing College, Borommarachonanee Nopraratratchatanae Nursing College, Borommarachonanee Chai-Nart Nursing College and Borommarachonanee U-Dontanee Nursing College with total of 44 questionnaires.

Group 3 : success of ISO comprises of Borommarachonanee Bangkok Nursing College and Borommarachonanee Ratchaburi Nursing College with total of 31 questionnaires.

2. Tools for research

Tools for this research are the tools that the research creates as followings.

2.1. General information about characteristics of a person such as age, gender, working period, position in the organization, the name of the organization, around 8 questions.

2.2. Questionnaires for opinion are for choosing to answer with 5 rating scales, which include

2.2.1 15 Questions about individuals

2.2.2 15 Questions about working system and technology

2.2.3 15 Questions about structure

2.2.4 15 Questions about environment

Total questions are about 4 opinions that involve using quality system, amounting to 60 questions.

Answering styles in the questionnaires are 5 Rating Scales, as followings.

Very agree	5	points
Agree	4	points
Uncertain	3	points
Disagree	2	points
Very disagree	1	point

2.3. Questionnaires are about details of reasons in choosing or not choosing ISO quality assurance system by Nursing College committees.

2.4. Interviews by structure are to interview only board of committees of Nursing Colleges which utilize ISO quality system about feeling, readiness, usefulness, problems, solutions, effects, and supporting factors for success.

3. Validity and reliability of tools

This step is to bring the questionnaires to test validity and reliability of the tools.

3.1 The experts in quality assurance and education to test the validity according to the contents do finding validity of the tools.

The researcher brought the opinion and suggestion of the experts to improve the tools before testing.

3.2 Finding reliability. When the measurement has been adjusted, it is sent for the committee at Nurse College, where its tasks are similar to Nursing College. With 30 Samples in Nursing Colleges under Pra-borommarajanock Institute, Ministry of Public Health, the calculation is done for confidential level by Alpha Coefficient, which is adjusted appropriately before real usage. The result of analysis is the confident level of questionnaires = 0.869

3.3 Data collection

After preparing the tools, the researcher collects data as the following process.

1. The researcher sends the request to Nursing Colleges under Pra-boromarajanock Institute, Ministry of Public Health. Letters are sent to the Nursing Colleges, which are samples, for indication and appointment date to collect data for the committee of the Nursing Colleges.

2. Data collection had been done from the committee of the Nursing Colleges at the appointment period, 3 April – 30 April 2000

3. Collected data are separated into 3 groups; first group is the group which does not use ISO quality system, second group is the group which is working on ISO quality system, and third group is the group that has already finished ISO quality system.

3.4 Data preparation

Data preparation is the process of preparing data for analysis as the following process.

1. To check the completion of the data about general information, information about opinions and reasons from the each samples.

2. To classify into 3 groups by categorizing data from prepared analyzing plan.

3. To analyze data with the concept of research.

3.5 Analysis of data

The researcher processes and analyzes data with SPSS/PC$^+$ as followings.

1. Basic statistics is to analyze data of samples categorized by characteristics of population such as age, gender, working period, and job position, with the usage of frequency, percentage, and mean.

2. Analyzing relationship between every independent variable and the usage of ISO system by Chi-square.

3. Analysis of the relationship among dependent variables is about the success of ISO system to all indicated independent variables. It also includes analysis and classification of group which is operating ISO quality system and the group accomplishing ISO quality system by using Discriminant Analysis to compare levels of significance of factors about how much influence it has on efficiency of group classification. Furthermore, there is analysis for Standardized Canonical Discriminant Function Coefficient to understand the power of group classification of independent variables.

4. In-depth interview is the way to analyze field information in qualitative research relevant to the objectives of research.

3.6 Presentation of result of data analysis

The presentation of data analysis shows quantitative data in tables, while qualitative data is displayed in descriptive presentation with explanation of interviews, especially in part of presenting the analysis of factors that have relationship with success of ISO quality system.

CHAPTER IV

RESULTS

The analysis of factors relating to the success of ISO 9000 implementation at Nursing Colleges affiliated to Pra-borommarajanock Institute, Ministry of Public Health was done as well as data was collected by using questionnaire and in-depth interview technique. The research's Samples population is Nursing Committee of each college. The findings has shown as the following details;

1. The analysis of factors relating to the implementation of quality assurance system functioning by the committees from nursing colleges affiliated to Pra-borommarajanock. And the reasons to select ISO 9000 implementation at nursing colleges.

2. The analysis of factors relating to the success of ISO 9000 implementation at nursing colleges.

1. Factors relating to the implementation of quality assurance system functioning by the committees from nursing colleges.

In this study, the general information of the Samples related to five factors were analyzed and presented by number and percentage as follows;

1.1 Personal factor

The results about age, working time, position, co-operation, problem solving, decision making, leadership and values are identified as follows:

Age

Nursing college's committee in this study is divided by ages in four groups are 24-30 years-old, 31-40 years-old, 41-50 years-old, and 51-60 years-old. The result is described in table 3.

Table 3 : Number and Percentage of the Samples Classified by Age groups According to the system of ISO 9000 Implementation

Age (years)	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
24-30	11(22)	10(22.7)	4(12.92)	25(20.0)	66.437	0.04
31-40	27(54)	19(43.19)	8(25.84)	54(43.2)		
41-50	6(12)	12(27.24)	14(45.22)	32(25.0)		
51-60	6(12)	3(6.81)	5(16.15)	14(11.2)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 3, the chi-square analysis found that the purpose of age is significantly difference in ISO 9000 implementation at statistically significant level equals 0.05, which is in accordant with the hypothesis concerning to age that associated to ISO 9000 implementation.

Working Time

Nursing college's committee in this study is divided by working time in three groups are 0-10 years, 11-20 years, 21-30+ years. The result is described in table 4.

Table 4 : Number and Percentage of the Samples Classified by Years of Working, and system of ISO 9000 Implementation

Working Time (years)	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
1-10	33(66)	19(43.13)	10(32.3)	62(49.6)	91.964	0.008
11-20	14(28)	19(43.13)	13(41.95)	46(36.8)		
21-30+	3(6)	6(13.62)	8(25.84)	17(13.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 4, the chi-square analysis found that the purpose of working time is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to working time that associated with the ISO 9000 implementation.

Working Status (Position)

The Samples of this study is divided into five groups are Director, Deputy Director, Head of department, Quality Committee, Lecturer. The results are described in table 5 to table 8.

Table 5 : Number and Percentage of the Samples Classified by a group of Director according to ISO 9000 Implementation

Status Director	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Director	1(2)	1(2.27)	1(3.23)	3(2.24)	1.512	0.470
Other	49(98)	43(97.73)	30(96.73)	122(97.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 5, the chi-square analysis found that the purpose of director is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the director that associated with the ISO 9000 implementation.

Table 6 : Number and Percentage of the Samples Classified by Head of department according to ISO 9000 Implementation

Status Head of Department	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Head of Dept.	14(28)	11(24.97)	5(16.15)	30(24)	1.516	0.468
Other	36(72)	33(74.91)	26(83.93)	95(76)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 6, the chi-square analysis found that the purpose of Head of department is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to head of department that associated with the ISO 9000 implementation.

Table 7 : Number and Percentage of the Samples Classified by Quality committee according to ISO 9000 Implementation

Status Quality Committee	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Quality Committee	8(16)	12(27.24)	15(48.45)	35(28)	9.974	0.007
Other	42(84)	32(72.64)	16(51.68)	90(72)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 7, the chi-square analysis found that the purpose of quality committee is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the Quality Committee that associated with the ISO 9000 implementation.

Table 8 : Number and Percentage of the Samples Classified by Lecturer according to ISO 9000 Implementation

Status Lecturer	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Lecturer	27(54)	22(50)	17(54.91)	66(52.8)	0.219	0.896
Other	23(46)	22(50)	14(45.22)	59(47.2)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 8, the chi-square analysis found that the purpose of lecturer is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the lecturer that associated with the ISO 9000 implementation.

Co-operation

The Samples in this study is divided in three groups are Quality Committee, User and Stake-holder. The results are described in table 9 to table 11

Table 9 : Number and Percentage of the Samples Classified by Quality Committee according to ISO 9000 Implementation

Co-operation Quality Committee	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Quality Committee	28(56)	24(54.48)	17(54.91)	69(55.2)	0.022	0.989
Other	22(44)	20(45.4)	14(45.22)	56(44.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 9 the chi-square analysis found that the purpose of Quality Committee is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the Quality Committee that associated with the ISO 9000 implementation.

Table 10 : Number and Percentage of the Samples Classified by User according to ISO 9000 Implementation

Co-operation User	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
User	14(28)	18(40.86)	20(64.6)	52(41.6)	10.516	0.005
Other	36(72)	26(59.02)	11(35.53)	73(58.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 10, the chi-square analysis found that the purpose of user is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the user that associated with the ISO 9000 implementation.

Table 11 : Number and Percentage of the Samples Classified by Stake Holder according to ISO 9000 Implementation

Co-operation Stake Holder	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Stake Holder	15(30)	8(18.16)	11(35.53)	34(27.2)	3.079	0.214
Other	35(70)	36(81.72)	20(64.6)	91(72.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 11, the chi-square analysis found that the purpose of Stake Holder is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the Stake Holder that associated with the ISO 9000 implementation.

Problem Solving

The Samples in this study is divided into three levels of opinion about problem solving are disagree, uncertain and agree. The result is described in table 12

Table 12 : Number and Percentage of the Samples Classified by Opinion in Problem Solving according to ISO 9000 Implementation

Problem Solving Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	2(4)	3(6.81)	1(3.23)	6(4.8)	2.004	0.735
Uncertain	13(26)	7(15.89)	6(19.38)	26(20.8)		
Agree	35(70)	34(77.18)	24(77.52)	93(74.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 12, the chi-square analysis found that the purpose of problem solving is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the problem solving that associated with the ISO 9000 implementation.

Decision Making

The Samples in this study is divided into three levels of opinion about decision making for conflict management are disagree, uncertain and agree. The result is described in table 13

Table 13 : Number and Percentage of the Samples Classified by Opinion in Conflict Management according to ISO 9000 Implementation

Conflict Management Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	12(24)	7(15.89)	2(6.46)	21(16.8)	15.800	0.003
Uncertain	26(52)	12(27.24)	10(32.3)	48(38.4)		
Agree	12(24)	25(56.75)	19(61.37)	56(44.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 13, the chi-square analysis found that the purpose of decision making for conflict management is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the decision making that associated with the ISO 9000 implementation.

Leadership

The Samples in this study is divided into three levels of opinion about communication of the leaders are disagree, uncertain and agree. The result is described in table 14.

Table 14 : Number and Percentage of the Samples Classified by Opinion in Communication according to ISO 9000 Implementation

Communication Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	8(16)	2(4.54)	2(6.46)	12(9.6)	14.280	0.006
Uncertain	15(30)	9(20.43)	1(3.23)	25(20)		
Agree	27(54)	33(74.91)	28(90.44)	88(70.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 14, the chi-square analysis found that the purpose of the communication of the leader is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the communication that associated with the ISO 9000 implementation.

Values

The Samples in this study is divided into three levels of opinion about values are disagree, uncertain and agree. The result is described in table 15.

Table 15 : Number and Percentage of the Samples Classified by Opinion in Values according to ISO 9000 Implementation

Values Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	4(8)	1(2.27)	1(3.23)	6(4.8)	5.5930	0.232
Uncertain	4(8)	3(6.81)	4(12.92)	11(8.8)		
Agree	42(84)	40(90.8)	26(83.98)	108(86.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 15, the chi-square analysis found that the purpose of the values is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the values that associated with the ISO 9000 implementation.

1.2 Working System Factors

In working system factors are composed of communication, direction, control and budget. The results about communication, direction, control and budget are;

Communication

The Samples in this study is divided into four groups, internal consultants, external consultants, nursing networks, and certificate awarding. The result is described in table 16 to table 21.

Table 16 : Number and Percentage of the Samples Classified by Opinion in Internal Consultants according to ISO 9000 Implementation

Internal Consultant Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	13(26)	9(20.43)	3(9.69)	25(20)	15.418	0.004
Uncertain	18(36)	6(13.62)	14(12.92)	28(22.4)		
Agree	19(38)	29(65.83)	24(77.52)	72(57.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 16, the chi-square analysis found that the purpose of internal consultants is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to internal consultants that associated with the ISO 9000 implementation.

Table 17 : Number and Percentage of the Samples Classified by Opinion in External Consultants according to ISO 9000 Implementation

External Consultants Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	18(36)	2(4.54)	1(3.23)	21(16.8)	38.241	0.000
Uncertain	17(34)	7(15.89)	3(9.69)	27(21.6)		
Agree	15(30)	35(79.45)	27(87.21)	77(61.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 17, the chi-square analysis found that the purpose of external consultants is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to external consultants that associated with the ISO 9000 implementation.

Table 18 : Number and Percentage of the Samples Classified by Opinion in Nursing Network according to ISO 9000 Implementation

Nursing Network Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	4(8)	6(13.62)	6(19.38	25(20)	15.418	0.004
Uncertain	3(6)	7(15.89)	11(35.53)	28(22.4)		
Agree	43(86)	31(70.37)	14(45.22)	88(70.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 18, the chi-square analysis found that the purpose of nursing network is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to nursing network that associated with the ISO 9000 implementation.

Table 19 : Number and Percentage of the Samples Classified by Opinion in Quality Form according to ISO 9000 Implementation

Quality Form Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	2(4)	1(2.27)	5(16.15)	8(6.4)	15.744	0.003
Uncertain	3(6)	4(8.96)	8(25.84)	15(12.0)		
Agree	45(90)	39(88.53)	18(58.14)	102(81.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 19 the chi-square analysis found that the purpose of internal consultants is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the quality form that associated to the ISO 9000 implementation.

Table 20 : Number and Percentage of the Samples Classified by Opinion of the Outsiders to do system according to ISO 9000 Implementation

Outsiders Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	14(28)	13(29.51)	18(58.14)	45(36.0)	9.404	0.05
Uncertain	14(28)	13(29.51)	7(22.61)	34(27.2)		
Agree	22(44)	18(8.53)	18(58.14)	102(81.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 20 the chi-square analysis found that the purpose of outsider to do system is significantly difference in ISO implementation at statistically significant level equals 0.05, which is in accordant to the hypothesis concerning to the outsider to do system that associated to the ISO 9000 implementation

Table 21 : Number and Percentage of the Samples Classified by Opinion on improvement of working system according to ISO 9000 Implementation

Improvement of quality system Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	7(14)	1(2.27)	1(3.23)	9(7.2)	18.123	0.001
Uncertain	17(34)	11(24.97)	1(3.23)	29(13.2)		
Agree	26(52)	32(72.64)	29(93.67)	87(69.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 21, the chi-square analysis found that the purpose of working system improvement is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the improvement of working system that associated to the ISO 9000 implementation

Director (Directing affairs)

The Samples in this study is divided into four groups for their opinion on continuous assessment, facilitated environment, available time, time consuming, and sufficient staff to handle the quality system. The result is described in table 22 to table 26.

Table 22 : Number and Percentage of the Samples Classified by Opinion in continuous assessment according to ISO 9000 Implementation

Continuous assessment Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	10(17)	4(9.08)	1(3.23)	15(12.0)	22.994	0.000
Uncertain	17(34)	18(40.86)	1(3.23)	26(28.8)		
Agree	23(46)	22(49.94)	29(93.67)	74(59.2)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 22, the chi-square analysis found that the purpose of continuous assessment is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the continuous assessment that associated to the ISO 9000 implementation

Table 23 : Number and Percentage of the Samples Classified by Opinion on Facilitated Environment according to ISO 9000 Implementation

Facilitated Environment Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	9(18)	7(15.89)	1(3.23)	17(13.6)	16.954	0.013
Uncertain	16(32)	11(24.97)	6(19.38)	33(26.4)		
Agree	25(30)	26(59.02)	24(77.52)	75(60.0)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 23, the chi-square analysis found that the purpose of facilitated environment is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the facilitated environment that associated to the ISO 9000 implementation

Table 24 : Number and Percentage of the Samples Classified by Opinion on Available Time according to ISO 9000 Implementation

Available Time Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	17(34)	13(29.51)	3(9.69)	33(26.4)	18.914	0.01
Uncertain	18(36)	11(24.97)	8(25.84)	37(29.6)		
Agree	15(30)	20(45.4)	20(64.6)	55(44.0)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 24, the chi-square analysis found that the purpose of available time is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the available time that associated to the ISO 9000 implementation.

Table 25 : Number and Percentage of the Samples Classified by Opinion on Time Consuming according to ISO 9000 Implementation

Time Consuming Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	17(34)	13(29.51)	3(9.69)	33(26.4)	18.914	0.01
Uncertain	18(36)	11(24.97)	8(25.84)	37(29.6)		
Agree	15(30)	20(45.4)	20(64.6)	55(44.0)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 25, the chi-square analysis found that the purpose of time consuming is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to time consuming that associated to the ISO 9000 implementation

Table 26 : Number and Percentage of the Samples Classified by Opinion on Sufficient Staff to Handle the Quality System according to ISO 9000 Implementation

Sufficient Staff Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	12(24)	6(13.62)	2(6.46)	20(16.0)	18.805	0.006
Uncertain	14(28)	13(29.51)	4(12.92)	31(24.8)		
Agree	24(48)	25(56.75)	25(80.75)	74(59.2)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 26, the chi-square analysis found that the purpose of sufficient staff to handle the quality system is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to sufficient staff to handle the quality system that associated to the ISO 9000 implementation.

Control

The Samples in this study is divided into two groups for their opinion on readiness of team working and ability of team work. The result is described in table 27 to 28.

Table 27 : Number and Percentage of the Samples Classified by Opinion on Readiness of Team Work according to ISO 9000 Implementation

Readiness of Team work Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	11(22)	7(15.89)	1(3.23)	19(15.2)	10.393	0.05
Uncertain	21(42)	15(34.05)	9(29.07)	45(36.0)		
Agree	18(36)	22(49.94)	21(67.83)	61(48.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 27, the chi-square analysis found that the purpose of readiness of team work is significantly difference in ISO implementation at statistically significant level equals 0.05, which is in accordant to the hypothesis concerning to the readiness of team work that associated to the ISO 9000 implementation.

Table 28 : Number and Percentage of the Samples Classified by Opinion on Ability of Team Work according to ISO 9000 Implementation

Ability of Team Work Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	5(10)	1(2.27)	1(3.23)	7(5.6)	14.436	0.006
Uncertain	16(32)	8(18.16)	1(3.23)	25(20.0)		
Agree	29(58)	35(79.45)	29(93.67)	93(74.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 28, the chi-square analysis found that the purpose of ability of team work is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the ability of team work that associated to the ISO 9000 implementation.

Budget

The Samples in this study is divided into three groups are need of much budget, enough money, and spent much money for quality system management. The result is described in table 29 to table 31.

Table 29 : Number and Percentage of the Samples Classified by Opinion on Need of Much Budget according to ISO 9000 Implementation

Need of Much Budget Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	10(20)	2(4.54)	1(3.23)	13(10.4)	26.877	0.000
Uncertain	19(38)	8(18.16)	1(3.23)	28(22.4)		
Agree	21(42)	34(77.18)	29(93.67)	84(67.2)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 29, the chi-square analysis found that the need of more budget is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the need of much budget that associated to the ISO 9000 implementation.

Table 30 : Number and Percentage of the Samples Classified by Opinion on Enough Money according to ISO 9000 Implementation

Enough Money Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	4(88)	5(11.35)	1(3.23)	10(8.0)	25.647	0.000
Uncertain	21(42)	23(52.21)	1(3.23)	45(36.0)		
Agree	25(50)	16(36.32)	29(93.67)	70(56.0)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 30, the chi-square analysis found that the purpose of enough money is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the enough money that associated to the ISO 9000 implementation.

Table 31 : Number and Percentage of the Samples Classified by Opinion on Spent Much Money for Quality System Management according to ISO 9000 Implementation

Spent much money	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
Opinion Levels	Non implement	Processing	Success			
Disagree	12(24)	4(9.08)	1(3.23)	17(13.6)	27.692	0.000
Uncertain	22(44)	21(47.67)	9(9.69)	46(36.8)		
Agree	16(32)	19(43.13)	27(87.21)	62(49.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 31, the chi-square analysis found that the purpose of spent much money for quality system management is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to spent much money for quality system management that associated to the ISO 9000 implementation.

1.3 Structural Factor

The Samples in this study is divided into three groups for their opinion on policy, planning and empowerment in quality system. The result is described in table 32 to table 34.

Table 32 : Number and Percentage of the Samples Classified by Opinion on Clarify Policy according to ISO 9000 Implementation.

Clarify Policy Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	4(8)	2(4.54)	1(3.23)	7(5.6)	17.575	0.02
Uncertain	12(24)	9(20.43)	1(3.23)	22(17.6)		
Agree	34(68)	33(74.91)	29(93.67)	96(76.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 32, the chi-square analysis found that the purpose of the clarify policy is significantly difference in ISO implementation at statistically significant level equals 0.05, which is in accordant to the hypothesis concerning to the clarify policy that associated to the ISO 9000 implementation.

Table 33 : Number and Percentage of the Samples Classified by Opinion on Planning according to ISO 9000 Implementation

Planning Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	3(6)	2(4.54)	1(3.23)	6(4.8)	18.986	0.005
Uncertain	9(18)	13(29.51)	1(3.23)	23(18.4)		
Agree	38(76)	29(65.83)	29(93.67)	96(76.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 33, the chi-square analysis found that the purpose of planning significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to planning that associated to the ISO 9000 implementation.

Table 34 : Number and Percentage of the Samples Classified by Opinion on empowerment in Quality System according to ISO 9000 Implementation

Sufficient processing Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	3(6)	1(2.27)	1(3.23)	5(4.0)	24.018	0.002
Uncertain	5(10)	7(15.89)	1(3.23)	13(10.4)		
Agree	42(84)	36(81.72)	29(93.67)	107(85.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 34, the chi-square analysis found that the purpose of empowerment in quality system is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to sufficient processing in quality system that associated to the ISO 9000 implementation.

Job Description

The Samples in this study is divided on their opinion in working security. The result is described in table 35.

Table 35 : Number and Percentage of the Samples Classified by Opinion on Working Security according to ISO 9000 Implementation

Working Security Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	10(20)	1(2.27)	1(3.23)	12(9.6)	26.183	0.000
Uncertain	20(40)	8(18.16)	3(9.69)	31(24.8)		
Agree	20(40)	35(79.45)	27(87.21)	82(65.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 35, the chi-square analysis found that the purpose of working security is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to working security that associated to the ISO 9000 implementation.

Job Responsibility

In this study, job responsibility by working team was investigated according to ISO 9000 implementation.

Table 36 : Number and Percentage of the Samples Classified by Opinion on Job Responsibility by Working Team according to ISO 9000 Implementation

Job Responsibility Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	3(6)	1(2.23)	1(3.23)	5(4.0)	46.458	0.01
Uncertain	11(22)	3(6.81)	1(3.23)	15(12.0)		
Agree	26(72)	40(90.8)	29(93.67)	105(84.0)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 36, the chi-square analysis found that the purpose of job responsibility by working team is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the job responsibility by working team that associated to the ISO 9000 implementation.

1.4 Technological Factors

In this study, technology factor is divided into three groups are modern technology, application of new technology and well-development in new sciences. The result is described in table 37 to table 39.

Table 37 : Number and Percentage of the Samples Classified by Opinion on Modern Technology according to ISO 9000 Implementation

Modern Technology Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	5(10)	4(9.08)	1(3.23)	10(8.0)	16.965	0.018
Uncertain	13(26)	5(11.35)	3(9.69)	21(16.8)		
Agree	32(64)	35(79.45)	27(87.21)	94(75.2)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 37, the chi-square analysis found that the purpose of modern technology is significantly difference in ISO implementation at statistically significant level equals 0.05, which is in accordant to the hypothesis concerning to modern technology that associated to the ISO 9000 implementation.

Table 38 : Number and Percentage of the Samples Classified by Opinion on New Technology according to ISO 9000 Implementation

New Technology Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	5(10)	1(2.27)	1(3.23)	5(4.0)	14.259	0.007
Uncertain	15(30)	7(15.89)	2(6.46)	24(19.2)		
Agree	30(60)	40(90.8)	28(90.44)	94(74.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 38, the chi-square analysis found that the purpose new technology is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to new technology that associated to the ISO 9000 implementation.

Table 39 : Number and Percentage of the Samples Classified by Opinion Well-development in new sciences according to ISO 9000 Implementation

Well-developed Knowledge Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	8(46)	7(15.89)	1(3.23)	16(12.8)	15.412	0.004
Uncertain	28(56)	20(45.4)	8(25.84)	56(44.8)		
Agree	14(28)	17(38.59)	22(71.06)	53(42.4)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 39, the chi-square analysis found that the purpose of well-development in new sciences is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to well-developed knowledge that associated to the ISO 9000 implementation.

1.5 Environmental Factors

The environmental factors in this study are divided into three groups are economic condition, social condition and other concerned organizations. the results are described in table 40 to table 42.

Table 40 : Number and Percentage of the Samples Classified by Opinion on Economic Condition according to ISO 9000 Implementation

Economic System / Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	7(14)	3(6.81)	13(10.4)	5(4.0)	2.08158	0.721
Uncertain	13(26)	9(20.47)	29(23.22)	15(12.0)		
Agree	30(60)	32(72.64)	83(66.4)	105(84.0)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 40, the chi-square analysis found that the purpose of economic condition is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the economic condition that associated to the ISO 9000 implementation.

Table 41 : Number and Percentage of the Samples Classified by Opinion on Social Condition according to ISO 9000 Implementation

Social Condition Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	5(10)	1(2.27)	1(3.23)	7(5.6)	12.275	0.01
Uncertain	13(26)	3(6.81)	1(3.23)	16(12.8)		
Agree	33(66)	40(90.8)	29(93.67)	102(81.6)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 41, the chi-square analysis found that the purpose of social condition is significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis concerning to the social condition that associated to the ISO 9000 implementation.

Table 42 : Number and Percentage of the Samples Classified by Opinion on Other Concerned Organization according to ISO 9000 Implementation

Other Concerned Organizations Opinion Levels	ISO 9000 Implementation			Number & Percentage	Chi-square	Sig.
	Non implement	Processing	Success			
Disagree	5(10)	5(11.35)	3(9.69)	13(10.4)	0.813	0.937
Uncertain	10(20)	7(15.89)	4(12.92)	21(16.8)		
Agree	35(70)	32(72.64)	24(77.52)	91(72.8)		
Total	50(100)	44(100)	31(100)	125(100)		

Remarks : Number in the brackets are percentage

From table 42, the chi-square analysis found that the purpose of other concerned organizations is not significantly difference in ISO implementation at statistically significant level equals 0.01, which is in accordant to the hypothesis

concerning to the other concerned organizations that associated to the ISO 9000 implementation.

In this study, the result of research from table 3 to table 42 was summarized in 5 factors that was significantly difference in ISO implementation at statistically significant levels equals 0.01 as follows.

1. **Personal factor :**
   - working time
   - quality committee
   - user
   - decision making for conflict management
   - communication
2. **Working system factors :**

Communication in

- external consultants
- nursing network
- internal consultant
- outsiders to do
- improvement of working

Director

- continuous assessment
- facilitated environment
- available time
- time consuming
- sufficient staff

Control

- readiness of team work
- ability of team work

Budget

- need of much budget
- enough money
- spent much money

3. **Structural factors :**
   - planning
   - empowerment
   - working security in job description
   - job responsibility
4. **Technological factors :**
   - new technology
   - well development in new sciences
5. **Environmental factors :**
   - social condition

1.6 Reasons of selecting ISO 9000 implementation at Nursing College.

The results derived from the analysis of five factors in part I are related to ISO 9000 implementation and success at the nursing colleges. In part II, the study of reasons to select ISO 9000 implementation by using questionnaire with the processing and success groups. The analytical result is described by frequency and percentage in the range 1 to 5. The details of reasons to select ISO 9000 implementation is described in table 43.

Table 43 : The Sequence of Reasons to Select ISO 9000 implementation

Sequence	Reasons to select	Number	Remarks
1	- wanted to work in the system	67(89.3)	see table 21
2	- has a policy to implement	66(88.0)	see table 32
3	- formalizes with the existing system; standardized and clearer procedure	62(82.6)	see table 34
4	- believed that it is a standard system	59(-78.6)	-
5	- internal quality audit is very valuable and less wasteful processes.	56(74.6)	see table 22

From table 43, it has shown the reasons to select ISO 9000 implementation those are wanted to work in the system, has a policy to implement, formalizes with the existing procedure, standardized procedure and clearer procedure. As most of the respondents believed that ISO 9000 is a standard system. In part II, there are reasons that in accordance with the analytical results in part I. as well as also in accordance to the hypothesis concerning to factors relating the success of ISO implementation at nursing colleges.

In the same way to study the reasons of not select ISO 9000 implementation by using questionnaire, which most of the Samples can select more items for the reasons. The analytical result is described by frequency and percentage in the sequence ranging from 1 to 5. The detail of reason for not select ISO 9000 implementation is described in table 44.

Table 44 : The Sequence of Reason to not Select ISO 9000 Implementation

Sequence	Reasons to select	Number	Remark
1	- has a policy to implement other system	35(70)	see table 32
2	- Quality of education must be considered at the whole system but not specifically considered only its process.	29(58)	see table 34
3	- more documents, spent much time	27(54)	see table 24
4	- can develop the quality system to TQM without ISO 9000 implementation	25(50)	see table 39
5	- working in the system is not refer to quality system	20(40)	see table 21

From table 44, the reasons for not select ISO 9000 implementation are such having a policy to implement other systems, quality of education must be considered at the whole system but not specifically considered only the process, more document, spent much time, can develop the quality system to TQM without ISO 9000 implementation and working in the system is not refer to quality system. The reasons in part II are in accordant to the analytical result in part I, which is in accordant to the hypothesis concerning to factors relating to the success of ISO 9000 implementation at nursing colleges.

In this study, the reasons to select the quality system are classified by factors relating to the success of ISO 9000 implementation at nursing college by using questionnaire and in-depth interview technique. The result is described by seven factors as followings;

Factor 1 : Leadership

Leadership is composed of various variables as followings details;

- Personnel in the organizations have knowledge about ISO 9000.

- Most of the respondents believed that personnel in the organization have ability and intend to do ISO 9000.
- Personnel in the organization have a self-control and able to success in ISO 9000 implementation.
- Everyone is apart of works and cooperation in works.
- The quality committee is a good model.
- The Quality Management Representative is a good facilitator.
- Directors have realized in the importance of ISO 9000 system, so they support time, food and meeting places.
- Directors have exchanged information both inside and outside organizations.

Factors 2: Process

The process is composed of various variables as the following details;

- Government's plan for co-operation with other concerned organizations .
- Clarify documents, standardized procedure
- Continuous assessment can improve, decrease and correct the working errors.
- The existence of an external consultant.
- The existence of an exchanging information.
- There is continuous development for TQM
- Competition for front line of quality service

Factors 3: System

The system is composed of various variables as the following details;

- To be believed that ISO 9000 is a standard system
- Wanted to work in the system.
- Wanted to develop the quality system for attaining to TQM.

Factors 4: Believes & Values

The believes and values are composed of various variables as the following details;

- Their organizations have a specific policy to implement
- Their organizations have a similar structure, then they can do so.
- ISO 9000 is a controlling process. If the process is good, so that the service is good too.
- ISO 9000 is a protective system for prevention of loss or deficiency of product.
- ISO 9000 is effective, potential and costly.
- ISO 9000 is a standard system for further development.

Factors 5: Ability

The ability is composed of various variables as the following details;

- Most of the organizations have a similar structure, then they can do so.
- Wanted to work in the system.
- ISO 9000 is a controlling process. If the process is good, so that the service is good too.
- ISO 9000 is a protective system for prevention of loss or deficiency of product.
- ISO 9000 is effective, potential and costly.
- ISO 9000 is a standard system for further development.
- Wanted to engage in the competition for front line of quality service.

Factors 6: Policy

The policy is composed of various variables as the following details;

- Their organizations have a specific policy to implement the ISO 9000 system .
- Everyone is a part of work
- Wanted to engage in the competition for front line of quality service.

Factors 7: System Development

System development is composed of various variables as the following details;

- Their organizations have a specific policy to implement the ISO 9000 system .
- Wanted to develop the quality system until attaining to TQM.

The analytical result of factors related to reasons given by Nursing College Committee in ISO 9000 implementation are classified in six aspects; personal factor, process factor, system factor, believes and values factor, ability factor, policy and system development factor that in accordant to the analysis of variables concerning to Nursing College Committee's attitude about ISO 9000 implementation in three factors those are personal factor, process factor, and system factor.

2. Factors relating to the success of ISO 9000 implementation at Nursing Colleges

2.1 This purpose concerning to the hypothesis that factors relating to the success of ISO 9000 implementation by using simple correlation in the part I, then using these variables for classification by discriminant analysis.

The variables used to classified processing group and success group are age, working time, position, co-operation, problem solving, decision making, leadership, values, communication, director, control, budget, planning, job description, job responsibility, new technology, application of new technology and development in new technology, economic system, social system and other concerned organizations.

Table 45: Multivariate Results for Two-groups Discriminant Analysis

Discriminant Function	Eigenvalve (X)	Cumulative C %	Canonical Correlation (RC)	Wilk's Lamda	Chi-square	df	sig
1	1.010	100.0	0.709	0.498	48.512	7	0.00

From table 45, it contains the results for the canonical discriminant functions. Note that the functions are statistically significant, as measured by the Chi-square statistic, and that the function accounts for 100 percent of the variance. The information are the discriminant functions for the predictive models. The results show that significant difference in ISO 9000 implementation at statistically significant level equals 0.05, which is accordant to the hypothesis concerning to the classification for processing group and success group in ISO 9000 implementation, and the function accounts for success at 50.27 percent (RC = 0.709)

The canonical discriminant analysis found that seven variables are entered into the canonical discriminant procedure. The seven variables are working time, leadership, decision making, co-operation in ISO implementation, communication, director, and planning. Each variable is not significant difference in ISO 9000 implementation at statistically significant level equals 0.05, then there are no need to interpret the function. The results of Standardized and Unstandardized Canonical Discriminant Function Coefficients are shown in table 46.

Table 46: Multivariate Results for Standardized and Unstandardized Canonical Discriminant Function Coefficients.

Independent Variables	Discriminant Function Coefficients	
	Standardized	Unstandardized
1. Working time	0.427	0.051
2. Cooperation	0.377	0.765
3. Decision Making	0.391	1.265
4. Leadership	- 0.718	- 0.137
5.Communication	- 0.609	- 0.178
6. Direction	0.600	0.159
7. Planning	0.850	0.490
Constant		- 3.272

From table 46, it shows that the discriminant functions achieve a high degree of classification accuracy of processing and success groups in ISO 9000 implementation. The results show the discriminant function coefficients for the predictive models. The results show that significant difference are planning, leadership, communication, direction, working time, decision making and co-operation, these seven groups are used in the model by sequence. The results indicated that the discriminant functions are based on seven independent variables with the canonical discriminant function to develop a structure matrix. The first linear composite is developed to explain the largest amount of variation (difference) in discriminant groups. The sequence of variables for the predictive models to test for significant difference in processing and success groups in ISO 9000 implementation as show in following

Standardized

Y = 0.427 Working time + 0.377 Cooperation +
0.391 Decision making - 0.718 Leadership +
- 0.609 Communication + 0.600 Director +
0.850 Planning

Un standardized

Y = -3.272 + 0.051 Working time + 0.765 Cooperation +
1.265 Decision making - 0.137 Leadership +
- 0.178 Communication + 0.159 Director +
0.490 Planning

From Fisher's Linear can arrange in processing and success groups in ISO 9000 implementation equation to :

Processing group = 0.615 Working time + 6.683 Cooperation +
2.284 Decision making + 0.288 Leadership +
2.634 Communication - 0.938 Director +
3.115 Planning - 67.006

Success group = 0.718 Working time + 8.223 Cooperation +
4.830 Decision making +
.00112 Leadership +
2.276 Communication - 0.617 Director +
4.103 Planning - 73.945

Then take raw scores to replace in two equations, the results from calculated shows more values in equation (processing or success). They are the member of the more equation.

When we take two equations to calculated for the member of processing or success group, we must determine that the functions are valid predictors.The results are shown in table 47

Table 47: Classification Matrices for Two-groups Discriminant Analysis Processing and Success Sampless

Actual Group	Predicted Group Membership		Number of Cases
	Processing	Success	
Processing	38	6	44
	(86.4%)	(13.6%)	(100%)
Success	6	35	31
	(19.4%)	(80.6%)	(100%)

Percent of "grouped" cases correctly classified: 84 %

From table 47, it shows that the discriminant function achieve a high degree of classification accuracy. The hit ratio for the analysis Samples is 84 percent. From the equations, percent of "processing grouped" cased correctly classified 86.4 percent and percent of "success grouped" case correctly classified 80.6 percent, so we conclude that the discriminant model is valid based on this measures. The discriminant analysis can confidently be described as predicting group membership in a high degree of classification accuracy.

From table 46 to table 47, we can conclude that the seven variables: planning, leadership, communication, director, working time, decision making, and co-operation are variables related to the success in ISO 9000 implementation by using the discriminant analysis. The sequence of variables from maximum to minimum for predictive models to test significant difference in processing and success groups in ISO 9000 implementation. Then, we take these predictive variables into the equation

(Discriminant Function). The discriminant function can predicted percent of grouped cases correctly classified 84 %.

2.2 The in-depth interview concerning factors that relate to the success of the application of ISO quality system.

In collecting data by questionnaire asking, the researchers interviewed the target Samples who are in the quality management groups of all 7 nursing colleges that performing the ISO quality assurance. These such 5 institutions are in the process of ISO quality system preparation. They have produced manuals and processes and, then, prepared to apply such tools for the internal quality audit. The other 2 institutions are the ones who already applied and succeeded the ISO quality system. They produced the quality manuals, and all process manuals as well as performed both internal and external audit. And they were already certified passing the ISO 9002 quality standard from TISI. From the interview of the quality management team of such 7 institutions, there were 8-13 persons from each institution, which were 50 persons in total. These could be separated to be 2 groups - the group, 25 persons, from the institutions that are in the process of performing the ISO quality system, and the other 25 persons from the institutions that are already successfully applied the ISO quality system. This interview used the in-depth questions (details as supplement Kor) as the frame of asking. From the research, the result has been categorized to 8 topics as follows;

1. Attitudes to the ISO quality system
2. Preparation prior to the quality system application
3. Opinions about the benefits of applying ISO quality system to oneself and work units
4. Problems and obstacles in application or preparation of the ISO quality system / Solution
5. Effects of ISO quality system on oneself and on work units
6. Supporting/ the most essential factors assisting ISO quality system success.

7. Obstacles/ the most essential factors deterring ISO quality system success.
8. The need for assistance in the ISO quality system preparation

2.2.1 Attitudes to the ISO quality system

2.2.1.1 Before applying the quality system

Since Pra-borommarajanock Institution, Ministry of Health, has accepted the policy of the Study Quality Assurance System from the Ministry of University Affairs, 2 colleges, Boromarajachonnanee Ratchaburi Nursing College, and Boromarajachonnanee Bangkok Nursing College, were the pilot projects that applied the ISO quality system. The other 33 colleges have been allowed to choose freely for their own quality systems. Therefore, Boromarajachonnani Ratchaburi Nursing College, and Boromarajachonnanee Bangkok Nursing College, have operated the quality system since January 1998, and coordinated with the 1st intake TISI Later, the 2nd intake has started to operate the quality system since October 1999. Until now, the 1st intake pilot colleges are already certified the ISO 9002 standard from TISI and the 2nd intake are in the process of operations.

The attitudes concerning the ISO quality system of these 2 groups are similar as follows;

The positive attitudes are;

" feel that the ISO quality system is the international and systematic standard.."

" ...is the image building for institutions"

" feel good... having quality process... so personnel can work effectively"

" prefer to perform ISO quality system since it gives them chances to learn new things and develop teaching and learning tasks"

" Uncertain, I'm afraid, sometimes...because it's substantial matter, but I also feel challenged. If we could make it, it would be famous."

" It's the system that help adjusting the system. Lecturers can follow the designed regulations and ISO is the controlling tool for maintaining the quality."

" feel great because they have chances to perform something qualified and feel good to be part in the quality system..."

" It's interesting because it receives the good acceptance from others."

" ISO is the standardized system..is the standard that is accepted by international countries.. is the policy that has to perform."

The positive attitudes different among institutions processing working on the ISO quality system are;

" Working has exact pattern, and it is tangibles."

" having literary pattern"

" ISO considers at the process."

The positive attitudes different among institutions already successful applied the ISO quality system are;

" try "

" good...good to develop"

The negative attitudes that are the same between these 2 groups are;

" Workload is increased, more difficult and complicated but it has to perform."

" It is the documentary system. If it is not taken to apply, it's worthless. It's a waste of using document. Why should we give the importance of such document using?"

" Increase tasks...So workers have to spend the family time for such work. It's too much concentrated and overlapping."

" Don't want to apply this quality system because they know that it's too much confused...too many paper document...Why have to?"

" It should be used for goods production or apply in factory. To use for the teaching and learning, it is not certain if it is really good."

" Don't understand what the ISO is"

" Disagree with performing this but it's the policy...so it can be done because it has to but quality is not so good."

" Having no good or bad feelings about this because they do not know such system"

The negative attitudes different between institutions already successfully applied the ISO quality system and that are in the process of ISO quality system operation are;

" They are the trading tools of foreigners. We need to purchase the system."

" Think that it does not concern with employees"

From the interview of personnel from these 2 groups of institutions for both positive and negative attitudes prior to performing the ISO quality system, there was one point that could be concluded, which was even tough they had negative attitudes about such quality system but they had to perform it since there was the policy to force them and they did not have a chance to select for their own quality system. In the big picture, most personnel feel good to the ISO quality system as the international system and having the clear processes, having literary instructions and being tangibles. This can help to develop the teaching and learning quality as the society accepts. It is the building of good image for institutions.

2.2.1.2 During and after applying the quality system

As the 2 groups of colleges have applied the ISO quality system, even though they started at the different times, they began writing the quality manuals and process manuals. During the ISO operation time, there are various attitudes of both positive and negative aspects as follows;

The positive attitudes that are the same between these 2 groups of institutions are;

" It is the better and clearer system. Working is more systematic, standard and literary."

" Decrease conflicts... but sometimes, it might increase conflicts if there is no acceptance among personnel."

" Communication by the same language... knowing more about the others' works... having same disciplines and processes of working that makes more efficiency of working"

" Increase better attitudes about this ISO quality system as being one part of the quality"

" Adjusting the system concerned with many groups of workers so it is the driving force for them to follow the right working procedures."

" How to work for being accepted and be happy in the same time, feel that how they can write correctly if they do not have the direction"

" Feel certain that they can make it.. feel proud of doing this.. and when starting, it has to be finished and needed to spend money."

" It's the thing that needs cooperation so they feel alert to co-work and feel united."

" It's the system that has criteria and process of working."

" Good, because it can be examined by the internal audit as the review system and warning the mistakes"

The positive attitudes different between institutions already successfully applied and that are in the process of the ISO quality system, the successful group has more positive attitudes as the following aspects;

" Can see the full capacity of lecturers in terms of the intention"

" Afraid that he will be blemish… has to be careful"

" Better than the other systems since it is more observable"

" Personnel have more disciplines."

" Need to perform this system because it is the policy and the external factors force to do it"

" Students gain benefits since there are manuals."

The negative attitudes of these 2 groups while operating the ISO quality system that are the same are;

" Confusing, too much of using document...and it's a waste."

" Know and understand ISO system not so well…do not realize its importance and top management do not give it the importance"

" Feel that it is difficult to adjust all systems together, making it complicated… It should be done one by one department."

" Feel discouraged, intense, bored, tired of doing this"

" It consumed too much time that need personal time to do it."

" The work is too much in details so they get difficult since the details are too much."

" Not sure if this system can be well applied to the academic institutions as much as be used for industrial section"

" Feel distressed since it is difficult. There are many trial and error stages so they feel uncomfortable."

However, the negative attitudes of personnel during the process of performing ISO quality system of the successful group are much more in terms of the followings;

" More works"

" Waste the time because they do not study before"

" Feel uncomfortable since they have to co-work with the others departments to maintain the quality"

" Do not think that it is the necessary system"

" Lack of public relations to inform that there are changed"

" Too confused and tired because it has to be done hurriedly, and has more coordinating work"

"People get more troubles because they have to work harder."

" Disadvantage in trading"

" Difficult to perform and feel disagreed with this system so they do not write to cover everything"

From the attitude analysis of both groups in all positive and negative aspects while these personnel were performing the ISO system, the group successful in ISO quality system felt much more in both positive and negative aspects. In big picture, it was the feeling of the system application, so the positive and negative feelings came from taking the written ISO system to apply in reality. It is certain that the successful group must feel more than the groups working on ISO quality system yet still did not take the written manuals to actually apply. In general, the positive ideas concerned the ISO quality system on systematic patterns of working, decrease conflicts by following the working patterns as the same directions. The works were more efficient and personnel had more disciplines. It also had examination process so it reduced defects. It was the system that was the clearest system and most application than others. For the negative attitudes, they usually concerned the workload that was

heavier by performing ISO quality. It needed to spend more time of writing, examination, trial and error working until they felt discouraged, bored and got intense as well as wasting the time.

2.2.2 Preparation prior to the quality system application / implementation.

As the Pra-borommarajanock Institute, Ministry of Public Health has co-project with TISI, there are 10-month training course for students of nursing colleges under the Pra-borommarajanock Institute. These nursing colleges will send 1-2 students to be trained for the 2-day period. This training provides the knowledge concerning the ISO quality system. After these students have finished the training, these so-called quality representatives will forward and perform the ISO quality system, co-working with the outside consultants that TISI assigned to be consultants for each college. There will be co-plan setting between outside consultants and the college quality representatives to design the methods of work in 1- month after that 10-month, the outside consultant project will be ended. Each college has to perform the ISO quality system by using their own capability. Therefore, personnel preparation for performing ISO system will be the key process that links to the success of this system. There are some similar preparations prior to the quality system application as follows;

" Self-study from other document, text or other electronic media"

" Arranging training as the designed project - - co- seminar with other institutions"

" Study from the person who already successful performed"

" Co-meeting and reading thoroughly instructions to understand work details"

" Pre-planning"

" Workshop camping"

" Trial and error"

" Mental preparation before applying system by making understanding all process until it is ready to do it"

" Attitude preparation"

From the interview about the preparation prior to the quality system application, both groups revealed that they had to get ready in physical and mental aspects that were preparation of knowledge and understanding about the ISO quality system and their own institutions. There were meetings among departments, reading through all details of work and understanding them. After that, they had to analyze the ISO quality system by joining workshop camping and co-plan setting. Concerning the mental preparation, it is the understanding and acceptance making until they are ready to perform ISO quality system.

2.2.3 Opinions about the benefits of applying ISO quality system to oneself and work units

As the Ministry of Public Health has policy to perform the quality assurance system in each college, such college can be reliable and accepted from the society that it is qualified. Therefore, the Pra-borommarajanock Institute has policy for all colleges in network to freely perform their own quality assurance system. The ISO quality system is one of many assurance systems that are to insure the institutions' qualifications. Therefore, the nursing colleges that are the groups working on and the group successful in ISO quality system in this research had the similar ideas of benefits of ISO quality application as follows;

" The working becomes more systematic, international and process."

" Help reducing conflicts of working by using the same written direction"

" Help developing teaching and learning to be more systematic and better quality for students"

"Communication by the same language so it is easier to work together"

" Working and document are more tangibles, literary. There are also the evaluation and plan setting."

" There is the selling point. Students want to study at such college as it is accepted by the outsiders."

" For the survival of institution in society"

" The document system also concerns with the quality process, more than just to keep the document systematically and to use them easily."

" Help to control working as agreement... work is done correctly as direction. There is the distinct motive that is internal audit."

" Encourage to be co-working, co-understanding and also know the others' works"

" Create the feelings of acceptance... Everybody feels himself important and helps one another to correct the misunderstanding to the right one and be moral."

" It is the evidence of working, having records and information documentation."

" Decrease the time of working because it is worked as the system, making it faster. Knowing the time of working starting and finishing"

" Create the systematic working behavior and encourage personnel to work with mental disciplines'

" Create and perform work as the same direction... can work well among personnel... This is because the written regulation of working is the frame to perform for the standard."

" It's the system that can be examined, followed, and rechecked."

" If it is applied successfully, it will be up-to-date and can catch up the world."

" There is the clear method and it can correct the improper system that has no transparency."

" Can be developed to TQM with the continuous improvement because there is the operations of prevention"

" Good image of being the international standard"

" If the institution is ready to perform, working as a team will be beneficial."

" Can revise the old system, no need to abandon old work"

" It's the key manual that has to follow...cannot leave"

From the interview of these 2 groups, they realized similarly about the benefits of the successful ISO quality system application. However, for the group successful in ISO quality system, they viewed additional benefits as follows;

" If it was written flexibly, it will be convenient to use and be happy."

" If we correct the problems while we are working, it creates knowledge."

" Personnel work more carefully."

" There is the system of document devastation clearly."

" There is the work supporting arrangement such as security work."

" There is the system that assists one another."

" Help adjusting the organization chart (in management level)"

" There is more plan setting."

" Feel more proud to be accepted from the outside society"

" Create the good attitudes to students"

" Realize the value of resource utilization"

" Feel alert and ready to change"

From the interview result, it was found that the group, successful in ISO quality system and were certified ISO by TISI, more realized the benefits of applying the ISO quality system. This was the consecutive result from the working on such system to apply. There were trial and errors as well as corrections for maintaining the situation for a period of time so the personnel in the organization could better learn and followed the system and other agreements as written. They could perform as manuals more effectively. This successful groups are ready to change for the constantly development.

2.2.4 Problems and obstacles in application or preparation of ISO quality system/ Solutions

2.2.4.1. Problems and obstacles in application and preparation of ISO quality system

From the study of the operation of ISO quality system preparation, both groups have faced similar problems and obstacles in the operation of preparation as follows;

" There is no specific department for public relations to work at full capacity. The public relations team should operate more actively than this."

" No reading the working steps causes conflicts. Some people try to work by shortcut, and they have to waste time to redo the task"

" Spending too much time in writing, need to correct many times, no work progress"

" Increase workload, have to do it out of working hours, reduce personal time, too much workload and want to quit"

" Work effectiveness declines because routine jobs are affected, and quality is not at full capacity."

"Spending too much money and budget as well as wasting materials and tools"

" Lacking cooperation (= 10%) or knowing but not cooperating... Some groups that are not cooperating will have to use internal audit system and the system will force them to do."

" Can't make it in specific time. They agreed in the meeting, but practice differed from the agreement. Conflicts occur."

" Not sure about the regulations, writing many documents, and many steps"

" People don't understand (causing them losing confidence). Don't see its importance. It needs to spend time to make people participate and realize the importance."

" Overlapping tasks... Need to choose what is important and what's not... Can't find time to do this from routine work (do many things at the same time)..."

" Too many people... it's hard to inform everyone clearly and having more people requires more time to do this."

" Work adjustment for themselves is not good, e.g. somebody has poor planning."

" Not concise language is used. Lacking consistency of using words...they need to mark the words."

" The directors and committees lack preparation, planning, knowing, welfare, food, drinks. If the committees don't see it important, this will make the work more difficult."

" Low budget, no investment"

" Too many documents, no jobs done, no cases to file document."

" Lacking clear coordinators... ISO needs everyone to know, because it might have problems in delivering information and co-meeting will help."

" Should be used with business... Can't be used with academics, because there are many other factors such as spirit."

From the similar concepts of both groups, the group working on ISO quality system has problems different from the group successful in ISO quality system, as the followings;

" All tasks that the committees involved will be slow."

" Not continuous operation"

" Lacking of typists"

" No certain destination (don't know when to get there)"

" Outside consultants don't understand the work and, rarely come."

" Not ready to work"

The group successful in ISO quality system has problems different from the group working on ISO quality system as follows;

" Not helpful in study tour…just some groups can go"

" Trial-and-error, and keep on trying… It takes too much time."

" The committees don't have fair practices for all employees. Some workers will be treated specially."

" Lacking of interests (miss concentration)…They have to have a meeting outside location."

" A great deal of data, such as, assessment. Therefore, it spends long time. They require more people to reduce the burden of work."

"Internal audit is quite inflexible. It causes stress. Therefore, there should be psychology in examination."

" The relationship and work involvement are more. Therefore, it will be difficult to work step by step."

" Some people have bad attitudes. Don't want to work…"

" The job involving with outsourcers, such as, training sources will have many problems. Therefore, it's necessary to help one another and make a deal first."

" No sacrifice in the team like not attending the meeting"

The results from the interview of both groups show that from the operation of ISO quality system preparation, there will be problems about quality system taking a long time, rewriting the monitoring for many times. This increases burdens. It's trial-and-error, feeling weak, wanting to quit, spending too much time and having no time for family, affecting routine jobs, and decreasing work quality. Moreover, it concerns spending too high budgets, wasting materials and tools, no attention and supporting from the executives like food, drinks, no cooperation and no recognition of importance of people, not continuous operation, internal consultants

lacking coordination, and external consultants not understanding works of the institutions.

2.2.4.2 Solutions for problems in application and preparation of ISO quality system

Table 48 : Solutions for problems of the group working in processing of ISO quality system and the group successful with quality system.

The group working in processing of ISO quality system	The group successful with ISO quality system
1. More tasks. One person handles many tasks. They want to increase workers to be 1:10. 2. People don't cooperate by helping to do it, giving suggestions, and motivating. 3. Use supporting method. 4. It is difficult to listen to 100% people's opinions. The solution is to make most people know and if it is necessary, they should use the working time to do it, if possible. 5. In cases of supervising the students (routine jobs on the building), this can be adjusted by using spare time from working with ISO. Try to supervise within morning and afternoon. 6. People do not understand. This is to assign to study further and motivating by supporting talks.	1. The work is not done in time. Too much burden of work. From many tasks, the director solves problems by taking them to be solved by the team. So, the decision of the director is strict. 2. Trial-and-error. Relying on experience. Therefore, they need the consultant of the department to give the right answers. 3. No planning. Thus, it requires motivation for planning and working by the plan. 4. Problems of each person. Everyone should solve his own problem. 5. Misunderstanding. Need to talk and explain. Give some time to make clear and have more joined meeting. 6. ISO is quite fixed in writing. Thus, if it is flexible, people will be happy. 7. Conflict occurs when it firstly has internal audit. Hence, this can be fixed by accepting one another and using

Table 48 : Solutions for problems of the group working in processing of ISO quality system and the group successful with quality system. (Cont.)

The group working in processing of ISO quality system	The group successful with ISO quality system
7. If they are tired, and stressful, they need to have talks, and later go back to work. 8. In case of overlapping of work, it can fix by choosing what is more important. 9. Personal time declines. This can be fixed by thinking that we are not working alone. Everyone helps one another. Then, they will be happy. 10. In case of wasting documents, this can be solved by study and interpretation with having good principles, readiness before working and learning from successful Nursing Colleges(Bangkok, and Ratchaburi) 11. More tasks make it difficult for the whole organization. Therefore, it has no continuous work. The solution is to solve by each work unit by leaving routine jobs to spend time seriously. 12. No understanding of what ISO is. Therefore, they should be prepared and trained.	principles of psychology to reduce drawbacks. 8. Sometimes people do not understand ISO and the consultants can not help to decide. This can be solved by selecting the consultants having knowledge and understanding the tasks of the work unit to be done. 9. Budget. There is a planning in advance for quality. 10. Some groups do not cooperate. It can use internal audit to be a forcing system to work. 11. When they find new problems, the best way is to discuss about them in the meeting. 12. Not knowing information widely. Fixed by putting in the file and distributing to all departments. 13. Having activities (more projects coming), less people. The solution is to increase manpower in the department that has few people and averages appropriately. 14. Writing too much in details, too many steps, having to readjust many times.

Table 48 : Solutions for problems of the group working in processing of ISO quality system and the group successful with quality system. (Cont.)

The group working in processing of ISO quality system	The group successful with ISO quality system
13. The committees agree in policy to do, but it is not inside. Thus, they should have everyone participates and becomes an important person for the job. 14. Guest speakers working as consultants from other fields should partly come from educational institutions, such as Ministry, Ratchapat Institute, or Nursing Colleges. 15. Negative attitudes. This should show the positive benefits until they have positive attitude before working to generate good works. 16. The budget should be planned annually and in the long run. 17. Time and task burdens are not harmonized. To fix this, each person should have his own plans and self-help system, and do only the useful projects, not all projects.	The solution is to think before writing and to write what is possible and convenient to work. If not, they would be stressful and overloaded. 15. Excessive works make people discouraged. This can be fixed by encouraging one another in the groups. 16. About audit, those who can not finish will need to select auditor to help working, checking, and rewriting. 17. The parts that really do not work will have to correct and prevent by reporting the executives. Thus, the committees must be serious about this. 18. About wasting documents. If people understand, the system will reduce the waste of papers. 19. Not ready for the meeting. Excessive work. To solve this is to send representatives to attend. 20. If they are bored, stressful, they should try to think that it is useful, systematic, and checkable. Moreover, it has a good planning and to encourage themselves often.

2.2.5 Effects of ISO quality system on oneself and on work units.

Preparation of ISO quality system is to prepare quality assurance system of the study of the work units or institutions. This is also a increasing task from the routine works, affecting personnel in the institutions. The effect of ISO quality system on personnel in the group operating quality system and the group successful in ISO quality system will also have similar negative effects as follows;

" QMR must brainstorm."

" Must do and check many times. About spending time and being limited by time, they have to use off-work time to do. It wastes personal time."

" It affects routine jobs. People can't work at full capacity and they have to double work in the short time."

" Low quality work...Can't finish in time...Feel bad and difficult..."

" Affect the students' time... The students are affected, while they are operating ISO."

" It affects training sources and the students do not understand, because the teachers will not come to see the students."

" Routine work... It never finish."

" Tired and stressful with work and co-workers... The need psychological mechanism to help adjust, such as encouraging themselves that soon it would be better."

" Difficult, discouraged, and bored because it is really tired"

" More burden.. They have to work harder."

" Wasting time, and paper…because they are not sure about regulations and they do not understand the system."

" About family, they are reduced time, reduced personal time and they also feel uneasy, and confused."

" From the pressure from society to work on quality system"

" Having the joint meeting, public hearing, and sometimes they postpone the appointment"

From the interview results of two groups, the findings were that negative effects are similar. This means making and usage of ISO system affect work. It increases burden of work. More works mean more time to use. It causes reduction in personal and family time. When the students are affected, routine works can not be

done fully. It affects training sources in supervising students. This affects them in that they feel stressful, tired, bored, discouraged, and difficult. Until they use psychological mechanism to help adjust and encourage them that it will be better soon.

From the interview about the effect of application and preparation of ISO quality system, the group successful in ISO quality system has positive effects as follows;

" If they write well, it will be practical. It will be beneficial."

" Knowing to control means having assessment always. Therefore, they must work hard for quality."

" Whatever we do must be careful to be step by step."

" Having changes and adjusting working methods"

" Making acceptance by compromise-warning-report procedure"

" Good to be systematic... So, it's easy to ask for cooperation."

" Firstly, I think the work increased, but later it becomes routine."

" Better work system"

Thus, the effects of application or preparation ISO quality system after operation are positive effects. That is better work system, control, periodic assessment, and more carefulness in work to be as regulations, having cooperation, acceptance in work, having changes and adjustment in working method. Moreover, the positive and negative effects are clear in that firstly they feel works increased, but later it becomes routine.

2.2.6 Supporting/ the most essential factors assisting ISO quality system success.

From the interview of 50 quality administrative committees of both groups, there are opinions of supporting/ the most essential factors that make ISO quality system of the institutions or work units successful. As the quality administrative committees of these colleges are a part of those operating quality system preparations. The quality administrative groups of Nursing Colleges working

on quality system preparation have similar ideas to quality administrative committees of Nursing Colleges successful in ISO quality system as follows;

" Cooperation in the organizations. The team cooperates to reach the goals. They must work hard, be responsible to duties, be honorable (afraid to lose face), reduce their owns defects to the least, and be a model (should be cooperative 50-90 %). The team has unity."

"The committee inside the organization should take part in problem solving, give significance, be serious, make clear plan, dare to do and to decide, motivate, command, and support all things." This is the leader with compromising style (mixed between tyranny and democracy).

"Internal consultants QMR – have knowledge and be a model- determine, have power, be strong, guide to be on the same track- confident personality- listen to others' opinion, sacrifice, make good decision, are the acceptable leaders."

"Depending on the person doing it. Must perform in order to succeed. This is the characters of people in the organization, including high potentials, sacrifice, unity, making clear understanding, responsibility, punctuality, confidence, honesty, enthusiasm, need of good system, determination, and intention."

" After doing, it must be good."

" Self-control, self-discipline, and no procrastination"

" Having zone group connecting all and good relationship of people in the organization…That means the committees to subordinates, QMR to workers, having a role model, good hearted, and caring..."

" Good quality communication, coordination, supporting one another"

" Having public hearing, knowing and bringing into use, listening attentively in the meeting, understanding its importance"

" Wanted to be modern, needed to be famous... The hospital has done it so we should be able to do it."

" People are competent."

" Having good guest speakers, important consultants to help guiding and solving problems"

" Building will power and spirit periodically"

" Clear policy because policy is a forcing factor to make everyone help one another to work"

" Readiness, declaring policy, making it clear what will be doing"

" Budget, because it is very expensive... It needs to use budget to make development. Working systematically... Knowing more about system... People are more careful and the damage will be reduced."

" Love the institutions or the organization"

The group operating in ISO quality system has different ideas from the group successful in ISO quality system as the followings;

" The team must be set up by themselves. Select those who can work together.."

" Have short and long term planning"

" Sharing the same goals is to have quality colleges."

"The seniority should be a role model."

" Support and cheer up by using the encouraging words"

" Seriously provide time to do"

" Having OD as developing shared seminar and relaxation"

" Having high technology"

"Have a share value"

"Continuous process"

" Organizational culture regarding its important"

The group successful in ISO quality system has supporting/the most essential factors to make ISO quality system successful, different from the group operating in ISO quality system to be successful, as follows.

" All teachers should find the way to solve problems for each of them."

" Catalysts are other Nursing Colleges (competitors) also operating."

" Friends are other Nursing Colleges working together (joining in the 1st intake project)."

" Checking system from inside and outside causes quality and society-assistance system."

" Go camping or outside meeting for brainstorming"

" Having internal audit to help check, and report... So, they would start to feel that they do not want to be blamed that they damage the system."

" Helping one another"

"Alertness of each person will force everyone to know. This means the environment will force and they need to learn more knowledge for himself."

"Love himself ... Afraid to lose face"

" Environment beneficial to work"

The interview results of both groups in supporting/ the most essential factors in making ISO quality system successful are similar. It is about cooperation in the organization by having level of cooperation more than half. The leaders pay attention to "compromise" style to support other factors. Characters of personnel in the organization are responsible, potential, determinable to succeed, to have clear policy, to have planning and well cooperative. Otherwise, there are also about providing time to work seriously outside the workplace (camping), love in the organization (institutions), enough budgets, and personnel ready in ISO quality system preparation, having competitors, love in themselves and fear of losing face for inability to do. These factors have parts in supporting to make quality system preparation successful.

2.2.7 Obstacles/ the most essential factors deterring ISO quality system success.

In the study of essential or important factors making ISO quality system successful, which are many factors, both the group operating in ISO quality system preparation and the group successful with ISO quality system. The successful group in ISO quality system has experiences and learns from problem solving for all the time of the ISO quality system preparation process. Thus, this is to offer obstacles or important factors that might be obstacles to success of ISO quality system. If not getting rid of the obstacles, it is difficult to make ISO quality system successful. Moreover, the group operating ISO quality system preparation is facing those obstacles. The concept about obstacles and factors makes ISO quality system unsuccessful, as follows;

" More burden, so they have to do without understanding. Making them get lost and confused in ISO"

" Can not follow the work (they can because of cooperation and limiting time), lack of responsibility, agreeing to do but never do it"

" The work is imperfect. It needs to readjust many times, because they lack cooperation and do not pay attention."

" Discouraged people want to be free like in the past."

" Rarely following the monitoring…Tasks are not continuous."

" The directors and chiefs do not participate. The joining point in administration is not clear."

" Chances to fail is 70%, because discouraged people do not create willpower, work development, human development. If the committees do not work, the subordinates will also not work."

"Poor management… Unclear policy"

"QMR lacks 4M."

"Lacking welling in every level, selfishness and lack of respect... Other people will get troubles and they do not care."

In the group having the successful system preparation, it recommends in ISO quality system unsuccessfully.

" No need. Maybe they don't want to solve, but just save the face."

" Not accepted (opinion)"

" Not as in agreement"

" Access to the committees, but it becomes a delaying factor, causing inequality"

" Not love the institutions"

The results of the interview of both groups offer the concepts that they should not work on ISO. It is not successful. Because there are more supporting factors and obstacles/ problems are fixed always in quality system application period. The chances of failure are possible only in the group operating ISO quality system preparation, but the group successful in ISO quality system should have no problems, except the problem in maintaining quality system in the future. Therefore, the problems of obstacles/the most essential factors make ISO quality system

unsuccessful (which should be eliminated to make ISO quality system successful). Totally, the problems are too much work burdens, fix many times, chances of failure from tired people, no building of willpower, no work development, power management, ambiguous policy, no attention from the leader, lack of cooperation in all level and no continuous work.

2.2.8 The need for assistance in ISO quality system preparation.

Before the preparation of ISO quality system, both groups have trained by projects and got ready before operating. Both groups need assistance in wanting skillful consultants with experiences to teach and advise to see clear picture to be ale to understand the process from 4.1 –4.20 and explain clearly. So, they can be confident that they can do it. There are many documents to study further. Moreover, there is need for special consultants for the specific problems such as measurement and assessment which may be direct consultants or consultants from the Ministry. Moreover, they also need for the clarity from those who know, the experienced, people who have done this, and the form of setting up the work units having done this.

While operating on ISO quality system, both groups need similar assistance as follows;

"The consultants from experienced work units, explicitly, clearly and continuously by needing the consultants that can tell the right things and standard, such as, the standard of the Nursing Council, standard of Ministry of University Affairs. Because they need to write and perform the standardized work in which advisors from other colleges can guide, analyze, and judge.

" See the work of other institutions and then find what is suspicious... Study comparatively to find the better way to improve the existence to be better, such as, looking at Ratchamongkol Institute, Ministry of University Affairs, including documents"

" Manuals for study and center for consultation"

" Internal consultant team helps monitoring by following for each job."

" The committees understand the problem and help subordinates, by understanding that if they work hard, they should build willpower for the subordinates to make good attitudes to make work successful."

" The best is to help ourselves by assisting yourself to build knowledge by having internal committees to aid, believing in our people that we can do it."

"Attention, seriousness, unity in working of everybody"

" Budget to develop the system to enter quality system"

The group successful in ISO quality system wants more similar assistance as follows;

" Want readiness preparation of people in the work units"

" QMR must know various and right things."

" Want to study other quality systems as well"

" Auditor must have psychology to compromise in checking to reduce problems"

" Third party comes for external audit, showing the way."

The interview results find that both groups still need assistance while operating ISO quality system. About internal and external consultants, the work units that can consult and suggest clearly in interpretation, decision making and solving problems in operation need assistance in budget, understanding, attention of committees, cooperation, unity and intention of people in the organization. Moreover, there is need for external units to study and visit and manuals, such as Ratchamongkol Institute, Ministry of University Affairs, and external auditors to suggest the practical ways.

CHAPTER V

DISCUSSION

The discussion on research findings is divided into 4 main topics as follows;

1. The relationship between 5 factors towards the implementation of ISO quality assurance system.

2. Reasons for the implementation of ISO quality assurance system.

3. The influences of different factors that associated with the success of ISO quality assurance system's implementation.

4. Supporting factors for the success of ISO quality assurance system implementation.

1. The relationship of 5 factors towards the implementation of ISO quality assurance system.

1.1 Personal factor

1.1.1 The relationship between personal factor and the implementation of ISO system can be illustrated in 2 categories; working time and the implementation of ISO system. From the analytical result, it has shown that a period of time had been spent for ISO system implementation is statistically different at a level of significance 0.05. It revealed that about 32-34 % of the respondents from the selected educational institutes with an implementation of ISO system have been working there for 1-10 years, while 11-20 years about 41-43 %, 21-30 years about 13-22 %, and 31 years about 3%. As for the group of respondents with non-implementation of ISO system, most of them have been working in those educational institutes for less than 25 years or about 94 %. This findings implied that the most of working experienced could be influencing to the more agreement and success of ISO implementation. So far, there is a theory concerning the organization development has clearly explained this

phenomenon (Anuwatana Suppa-chutikul, 1998 : 82) as it said that the organization development means to a change derived when we followed the plan through a long process of operation as well as on the basis of extensive knowledge

1.1.2 Cooperation in ISO system implementation : Organization is considered as a system with a presence of interrelated activities. A changing of organization might be occurred whether we started at any part of the system and then by mean of the system will be certainly changed. So, any changes could be affecting to the other systems as well (Anuwatana Suppa-chutikul, 1998 : 84). As a result, cooperation from all staff is needed for ISO system implementation. As it was discovered that 64.5 % of the organizations with a good cooperation could attain to the success of ISO system implementation. This is a kind of participation development that will be sustainable and broadly accepted as well.

1.1.3 Making a decision: By the administrator's perspective, decision making can deliver a reduction of conflicts between groups that existing in any institutions (Somyod Naweekarn, 1998 : 49). Actually, organization is composes of many different groups of which are considered as very significant to the success of that organization implementation whether each group has attempted to recognize his goal as the organization's goal as well. By this way, a direct result gained from their working effort is certainly a success of works as well as their ultimate goal will be responded. As it can be seen that 61 % of all decision makings for a reduction of conflicts are accomplished.

1.1.4 Leadership characteristics: The organization's leader in areas of general administration and quality system implementation, could receive many of essential information when both of the intersectoral and intrasectoral coordination are made under their critical commanding (Somyod Naweekarn, 1998 : 15) with an application of any appropriate methods those are instigation, participation or integrated one. This practice is accounted as influencing to working efficacy of their staff. From this study indicated that 90 % of the organization's leaders who could

fulfill the ISO system implementation had been provided with a lot of necessary information. This implied that the success of ISO system implementation depended on a validity and quick of information.

When considering to personal factors pertaining to a duration of working, cooperation, decision making and leadership characteristics, all are factors associated with a progress of organization. Practically, changing of knowledge, attitude and behavior of personals upto of the group and organization under a systematic procedure is particularly required by the leaders. Absolutely, both knowledge and attitude are associated with the personal changes. In a case that the leaders could be well done on exchanging the information concerning ISO system implementation to the other concerned organizations with a fully implementation of it, as well as to make an effort on conflict implementation, these enable the most of staff gaining knowledge, understanding and accepting the changes including having a positive attitude towards the ISO system. Finally, such a good cooperation on implementation of ISO system will be occurred and bound to attaining the perceived goal at the end. Evidently, any persons who have been working in those institutions for many years could be accepted as a group or organization's members as a whole.

As for the other factors such as age, position/function, problem solving and values, these are not associated with the change of aspiration on implementation of ISO system. By this study revealed that both the group with implementation of ISO system and the group without implementation of ISO system are quite similar in term of age, position/function, problem solving and their values. It dues to a similarity of their organizational structure, working style, believes, and values as well.

1.2 Factor related to working system

From this study, it was proved that factors related to the working system such as communication, directing and control are associated with the aspiration on implementation of ISO system.

1.2.1 Communication: This is considered as an essential component comprising in the working process because of information received from both inside and outside the organization or by a type of network are very useful for effective implementation of ISO system. Again, the application of ISO system under a special concern on making a contract and communicate with the outsiders for knowing and accepting each others is a very important approach as well as it associated with the success of working (Somyod Naweekarn, 1998 : 17). Of course, both internal and external consulting agencies could help the communication process going on so well and lead into an accomplishment of task as planned at the end. In addition, existence of network also could deliver such an effective implementation and success of the ISO system. As it has shown that more than 60 % of respondents who could accomplish the ISO system showed their attempted on communicating with departments concerned that included outside, inside and other networking organizations. Therefore, before initiating any activities it is a must to make a proper communication with both inside, outside and networking organization. There is no particular approach but try to select any that can be matching with both your team and the organizational structure, this is a way suggested for building up such a good attitude and universal acknowledge including for their information. As some executive committee said that "Before you starting or assigning any activities, please generally explain whatever your policy, definite procedure and the goal to all, so that you will be able to accomplish your task without conflict but all willing to do.

1.2.2 Directing or facilitating: This particular factor could be identified by several concerned component that is a nice working atmosphere, appropriate timing and manpower including a continuous monitoring and evaluation process. Whereas directing is a beneficial factor contributing to a success of work as it can be seen that over than 70% of the groups with a successful implementation of ISO system were in possession of these mentioned factors especially sufficient time for operation. The implementation of ISO system is accountable as a systematic process enabling to arise such a change within the organization (Anuwatana Suphachutikul, 1998 : 80), however it requiring a proper length of time as well. According to an interviewed of

Quality Management Representative Committee (QMRC), they explained that a length of time for the implementation of ISO system should be only sufficient but not too much. This due to the most of concerned people might be boring or otherwise the uncontinuity of work appeared. Also, readiness of personnel is another significant factor should be prepared before starting to change anything (A-run Raktham, 1991 : 329). One of effective approaches is to provide all personnel with knowledge and understanding about what is the extent of a quality system? What is its necessity and working process?, what kind of cooperation is needed?, how can we do the evaluation? and what is a specific responsibility of each person? If all of these questions are answered, therefore everyone could have an identical perception and cooperation as well as much of the conflicts will be reduced till attaining to the ultimate goal as set.

1.2.3 Controlling : This is another way to manage a quality system by the members of those institutions. As a special attention has to be placed at the readiness and sufficient allocation of personnel. When considering to the group with a success of ISO implementation, it was found that more than 70% of them had been occupied with a readiness and sufficient allocation of personnel. This meant that the accomplishment of task will be occurred whenever a sufficient provision of manpower is done. The readiness of personnel must be prepared in term of knowledge and understanding in their works for a presence of positive attitude, good cooperation, and reduction of conflicts.

1.2.4 Budgeting : It was found that there was no difference of opinions regarding to a budget due to it was thoroughly allocated to all organizations concerned under an identical plan and approval of Pra-borommarajanock institute and the college's administrators. As a result, the most of respondents have had a similar ideas that it is necessary to spend a big amount of budget for implementation of the system.

1.3 Factor related to the organizational structure

From this study, it was discovered that factors related to the organizational structure such as arrangement of plan, delegation of duty and authority had an association with the implementation of ISO system as the following details;

1.3.1 Arrangement of plan emphasizing on the formulation of a distinct policy: Drawing up such an operational plan before the implementation of a quality system was mostly found in the group with a successful implementation of ISO system that was over than 90%. This illustrated that planning is the first order of priority under a principle of organizational implementation (Woraphat Phoocharoen, 1998 : 10) and followed by do, check and action according to the P-D-C-A cycle.

1.3.2 Empowerment It is considered as a significant principle being applied for organizational implementation purpose. As well as, this is in accordance with Joan Woodward's theory (Joe Kelly, 1969 : 51) of which explained about the organizational structure that really required such as a delegation of works by skills, directing and commanding under a distinct authority, including working by regulation, these factors could be affecting to the success of organization implementation. From this study, it revealed a workload of the most nursing colleges that is being administered by a way of empower duties to all people concerned . This approach is perceived as causing a change for a goal of organizational re-engineering with strengthening on the participation of everybody. Accordingly, a change had been occurred in any organizations would be widely accepted and sustainable that is helping to call the attention for further implementation of the quality system.

1.4 Factor related to technology

When the concentration is placed on studying the technology, it refers to the study related to the implementation of modern equipment, application of technology and development of academic substances. As it was discovered that technology was significantly associated with the attitude upon the implementation of ISO system. It dues to the emphasis of ISO system is bounded at its process with the use of written evidences for examining the system. Actually, most of documents are classified in the

classified in the form of both written papers and electronic media. When the ISO system is broadly perceived as a universal standard system, therefore the involvement of modern technology is extremely needed. As it was indicated that over than 70% of the respondents with a successful implementation of ISO system have been using the most of modern technologies and media. Hence, by the age of informative technology, such a different kinds of media and modern technology could be resulting to the compliance upon a implementation of quality system including its success as well. All these because of the most organizations needed to be changed for a goal of development since nowadays is so called the age of not border communication, so it is necessary to bring the modern technology in use.

1.5 Factor related to environment

In this research is not only focusing on studying the environment but also included social, economic and other organization concerned as it could be detected that social system had association with the attitude toward ISO system implementation. And more than 90 % of the groups with successful implementation of ISO system have been possessing such an idea to put forward the petition for approval of the standard accreditation from any domestic organizations concerned. Regarding to a review of social ideology, the Ministry of Public Health had a policy to encourage the most of organizations initiating the quality assurance system as well as especially the academic institutions must be able to stand on their own within the year 2002. Step forward for being self-reliance, firstly each organization requires an operation of internal quality assurance system with strengthening on a gradual monitoring and evaluating process by the appointed committee. Afterwards, inspection from external organization is needed for social acknowledgment as well. When considering to the external inspection, it is probably conducted by domestic or international organizations. Again, by this study it was discovered that most of the groups with existing implementation of ISO system had made an effort on requesting the accreditation particularly from domestic organization because of it will be more economized as well as Thailand is a country with fully authorized in issuing a certificate of quality assurance.

Dealing with the economic system and the existence of organizations concerned, it was proved as significantly associated with the respondent's attitude towards the implementation of ISO system. And when compared to the other available quality assurance systems, it found that there was no difference of opinions. There is a reason to believe that the most of quality assurance systems are also effective and enable to bring about a quality of work at the end whether we are ready and really need to apply any of those systems.

2. Reasons for implementing ISO quality system

According to the analysis of reasons for implement or non-implement of ISO system, it was found that 89.3% of respondents have determined to work in a systematic way and also to follow the government policy. And they believed that ISO system is a beneficial system with an exist of written evidence and a definite working procedure. This information is quite coincident to the results derived from the analysis of relationship between planning and successful of ISO system implementation. As it revealed that a formulation of working plan was significantly associated with the successful of ISO system implementation.

Firstly, a group of administrators had given a reason that they are preferable to work in a systematic way through the application of ISO system. This is found as in accordance with their agreement upon the advantage of ISO system by showing another reason as the ISO system is much more emphasized on written documents, definite working procedure, implementer is a writer, to work as you wrote, and to write what you worked. Simultaneously, a research by Somchai Puak-berksuk (1998 : 2) discovered that all activities done by the quality groups has been affecting to the ISO accreditation awarding. Besides, a presence of systematic work was already included in the Educational Reform Policy that clearly mentioned about the need for reorganization in a current situation. This is conformed to the study of Robert (1996 : 3) as it has shown that the ISO system is feasible to be applied with the educational system for a better implementation of teaching and learning process as well as the customer or learner's need could be responded.

Of the first reason for non-implement of ISO system was drawn out from 70% of the respondents as they were introduced by another policy to use any of other existing quality systems instead of ISO system. The second reason is dealed with the necessity for examining the quality of education as a whole but not only its process. This is found as extremely in accordance with the analysis of organizational structure. While the matters concerning to planning implementation, a formulation of planning policy including a formulation of general policy are suggested as must be conformed with the amount of budget allocated. As a result, the group with non-implement of ISO system must be crucially considering and selecting whatever the best alternative for them. In this study, such a rational choice theory was applied as a guideline for selection of the most appropriate system, At the same time, the organizational theory by H.A. Simon was applied for decision making as it suggested that a decision can be made but must be on the basis of scientific review and numeric calculation for knowing the situation as well as cost-benefit. Again, this group explained that they have to think about all expenses for the implementation of ISO system- such as material cost, time consuming, wages for more typists, food and drinking, payment for conference room and other facilities, honorarium for the trainers of training on ISO system and training of internal auditor, consultation fee including registration fee and payment for the certificate of accreditation. Certainly, there was no definite plan and sufficient budget allocated for the implementation of ISO system, while the other quality systems such as QA., KPI required a smaller amount of budget. Besides, they believed that the ISO system is mostly emphasized the importance of process, so it is probably more suitable for a guarantee of goods than education. A major reason for this owning to the education system must be only applied with human beings and meanwhile they are bounded with various environmental factors such as socio-economic settings, politics, local setting and other situations concerned. Hence, the application of ISO system is seen as not suitable for teaching and learning activities because of it is impossible to produce the same quality of students. Furthermore, they also believed that a quality organization could be appeared under the application of other systems but need not to follow a social current in implementation only the ISO system and particularly we will be not occupied by foreign systems as well.

3. Factors Relating to the success of ISO quality system implementation

Regarding to the result derived from a discriminant analysis of factors associated with the success of ISO 9000 implementation, it was found that structure factor that is an operational planning has the highest discriminant function (0.850). The second is personal factor that is leadership characteristics has a discriminant function of 0.718. This analytical result can be explained under the application of the two major theories; Organizational Structure Theory in planning and Leadership Theory written by Shaw (1981: 54) as its concept described that leadership is only a position within the group. At the same time, Somyod Naweekarn said that being a good leadership should have knowledge and ability in term of diagnosis and operation.

When considering to the organization theories by Henri Fayol, Gulick and Mooney (Ouy-chai Chaba, 1991 : 158), it was seen that Henry Fayol employed the administrative principles which composed of planning, organizing, directing and job control. As for Gulick, he hold another principle so called "POSDCORB" which included planning, organizing, staffing, directing, co-ordinate, reporting and budgeting. Besides, such a psychological theory written by Maslow could help to clarify about job planning, leadership characteristics, directing, communication, and cooperation within organizations. These are considered as a need for the success of ISO implementation. The need of human being by Maslow's theory (Maslow, 1974 : 80) is rather more emphasizing on basic needs particularly physical need, security need, need to love our institution, need to have friendship, prestige and success. Certainly, implementation of ISO quality system needs these 5 components.

4. Factors supporting to the success of ISO system implementation

From this study, factors associated with the success of ISO system implementation are investigated by using in-dept interview technique and can be presented in a sequence as following;

4.1 Cooperation among staff: It revealed that 13 out of 25 staff (52 %) had been strengthening on practicing a good cooperation to success the goal. As for teamwork with requiring the success of ISO implementation, they must be belonging such a sense of willing to work hard with fully responsibility and being a good model, to keep up their dignity (to be afraid of failure, other ones can do so why not they do) and try to minimize their errors.

4.2 Leader in administration: 8 out of 25 staff (36 %) recommended an integrated characteristic of the leader (decisive with democratic) as he/she must work seriously, to formulate a definite policy, sharply decision making and can find solutions, to facilitate all staff in all situations, pay attention to all matters, providing mental support, strong, devote in training and compromise in problem solving.

4.3 Budget: About 28 percent of staff who concerned with ISO implementation always think about the amount of budget as it is necessary and very important for the success of ISO implementation. Due to budget must be spent for human and system development in order to encourage the most of people working carefully as well as to decrease the amount of loss. As a result, budget for the expenses of document, typists, proved and correction of meeting minutes, other facilitating factors, consultant fee, and registration fee for the certificate of accreditation totally cost about 1-2 million baht.

4.4 Quality Implementation Representative (QMR) is a very important facilitator to facilitate, find out the solution, assisting and guiding only the same direction. So far, QMR has to own a strong character with firm, attempt and intend to work, self-confidence, opened mild to listen whatever the others' opinion, scarify, well decision making, knowledgeable and being as an acknowledged leaders.

4.5 Characteristics of manpower in the organization is an essential factor. This is mentioned by the success group of ISO implementation. Evidently, the success of ISO implementation will be attainable if the most of concerned people in any organization

would be owning some of important characters such as a high potentiality, scarify, responsibility, punctual, unite as one, believe that we can do it, honesty, active, need only a good system and be ready to understand and accept other comments.

Not only these 5 major factors, but also there are other opinions that seem to be affecting to the success of ISO implementation as the followings;

- clarify policy enables to encourage all concerned people working together.
- the users of ISO system must be possessing self control and without accumulating of work.
- peer group can help to haste and urge the work up as well as they are competitors in implementation of ISO system.
- Both internal and external auditing system should be applied for promoting the quality of work under the control and assist of social system.
- A conduct of outreach activities such as camping, seminar or meeting for brain storming and behavioral dissolving, these could bring about behavior changes in a better cooperation.
- There are both internal and external consultants who are knowledgeable.
- Recognition of meeting's importance and readiness of meeting is needed with mutual understanding and agreement.
- should not stop the implementation until it finished
- to be loved in institutions
- cooperation, mutual support, mental support
- good relationship between members of organizations such as administrators and subordinates, QMR and teamwork
- all personnel should be alert due to the success of ISO system implementation will be derived under a good cooperation of all member. Thus, everyone should be seeking for knowledge and

performing the internal audit in order to protect themselves from blaming.

5. Conclusion & Discussion

ISO is accounted as a quality system with a quality assurance given by international acknowledgement. Considering to the nursing education which is conducted by nursing colleges affiliated to Pra-borommarajanock Institute, Ministry of Public Health, it can be seen that in some colleges had already implemented the ISO as one of their educational quality systems. On the other hands, some colleges had never employed such the ISO quality system for any purpose. Since 1998, the ISO system was introduced to be applied in nursing colleges and it was found that the most of colleges with implement of ISO system could be successfully implemented. Accordingly, it is necessary to study the factors related to the success of ISO implementation. The findings of this study showed that structural factors concerning to the operational planning had the highest association. And when the reasons to implement the ISO system was analyzed, it was discovered that the most of reasons are in accordant with the analytical results in term of planning. As for the analysis of factors influencing to the success of ISO system, it indicated that the most of respondents needed of systematic working. Secondly, they agreed that ISO is one of evident system with a presence of clarify documents. All these are considered as concerning with the planning process as well as it showed a statistically association at a level of significance of 0.05. While the first major reason regarding to non-implement of ISO system is the existence of policy to use the other quality system. Another reason is dialed with the way to consider the quality of education as a whole in stead of a consideration only the process. This is in accordant to the fending derived from a discriminant analysis of the group with success of ISO implementation and processing group with non success of ISO implementation. As it was discovered that job planning had a maximum discriminant function, while leadership characteristics is the second.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

The Nursing College of Pra-borommarajanock Institute under the Public Health Ministry has a major responsibility for more than 50 years to produce nursing personnel in order to serve the need of the Public Health Ministry's hospitals. Because of a sufficient number of nursing personnel coupled with a policy from Public Health Ministry in January 1998 to implement quality assurance system in each of its organizations and system selection is allowed independently, the quality, hence, become much more emphasized. Some organizations use ISO as a quality assurance system and achieve within 2 years while some organizations fail due to various factors. Therefore, the researcher is interested in studying factors related to the success of the ISO quality system implementation of the committee of the Nursing College of Pra-borommarajanock Institute of Public Health Ministry. There are two main objectives on this research as follow:

1. To study on various factors namely; personnel factor, working system factor, structural factor, technological factor and environmental factor related to the ISO quality system implementation of the management of the Nursing Colleges of Pra-borommarajanock Institute, Ministry of Public Health. And to study on justification to implement or non implement quality system implementation of the committee of Nursing College of the Ministry of Public Health;
2. To study on factors related to the success of the ISO quality system implementation by considering factors that effect a classification into the ISO quality system success group and on-processing group.

The sample consists of 125 committee of the Nursing Colleges of Pra-borommarajanock Institute of the Ministry of Public Health age between 24-60 years old. Divided into three groups, 50 of them are in the non-implementation of ISO

quality system group, 44 are in the group which is on-processing implementing of ISO quality and 31 are in the ISO quality success group. The committee of Nursing College were interviewed by researcher through questionnaires to obtain general data of the committee of Nursing College, working system, structural system, technological system, environmental system and justification form concerning whether to implement the ISO quality system or not. Only group that implement the ISO quality system was interviewed in depth in terms of preparing process, benefit, effect, problems and obstacles and also supporting factors in achieving/success ISO.

SPSS program was employed to analyze a variable relationship by using Chi-square for analyzing a reason of implementing or non-implementing the ISO quality via frequency and percentage. Discriminant analysis was employed to analyze factors that effect the success of the ISO quality success group and on-processing group.

Summary, discussion and recommendation of this research are described consequently as below:

Conclusion

The result of research was summarized as following:

1. The result of analysis on relationship between various factors such as personnel factor, working system factor, structural factor, technological factor, environmental factor and the committee of Nursing College's attitude towards the ISO quality implementation.

1.1 The relationship between personnel factor and the selection of the ISO quality system implementation demonstrated that working period, cooperation, decision making and leader characteristics are related to the selection of ISO quality system implementation but position, responsibility, problem solving and values have no relation;

1.2 The relationship between working system factor and the selection of the ISO quality system implementation demonstrates that communication, directing, controlling and budgeting are related to the selection of ISO quality system implementation;

1.3 The relationship between structural factor and the selection of the ISO quality system implementation points out that planning, empowerment and responsibility are related to the selection of the ISO quality system implementation;

1.4 The relationship between technological factor and the selection of the ISO quality system implementation states that an apply of modern technology, application of new technology and development in new sciences are related to the selection of the ISO quality system implementation;

1.5 The relationship between environmental factor and the selection of the ISO quality system implementation demonstrates that social condition is related to the selection of the ISO quality system implementation but economic condition and other organizations have not relation.

1.6 The result of analysis on justification for implementing or not implementing ISO quality system of the committee of nursing college of Praborommarajanock Institute of the Ministry of Public Health.

The reason find most in the ISO quality system implementing group is an intention to work systematically while the reason of the group that does not select the ISO quality system refers to its policy to apply other quality system. These above reasons are in accordance with an analysis on planning. For planning, both clearly policy set up and operation planning have relation to the ISO quality success. The reason of implementing a quality system classify the significant factors such as leader characteristics, planning, working system, values and believes, competence, policy and system development. The analysis on factors related to ISO quality system implementation of the committee of the Nursing College in accordance with the analysis on factors effected on the reasons such as leader characteristics, planning, working system and policy.

2. The result of analysis on factors related to the success of ISO quality system implementation through classifying on processing of quality system group and the ISO quality system success group reveals that classification analysis equation is 84% able to explain membership of group accurately. The analysis of the whole 28 independent variables states that planning variable experiences the highest classification power score (0.850), followed by leader characteristics (0.718). This analysis result is in accordance with analysis on attitude in relation to the justification of the management of the Nursing College of Pra-borommarajanock Institute of the Ministry of Public Health. As it is found that planning and leader characteristics are related to success of the ISO quality system implementation at a significant level of 0.05.

The 0.709 Canonical Correlation reveals that all independent variables in the classification equation have rather high relation to criteria variables. In the other word, several variables in classification equation are able to explain the difference between on-processing quality system group and quality system success group at a percentage of 50.27 approximately. ($R^2_c = 0.709^2$)

Recommendation

This research finding provides a significant basic data for recommendation on planning, managing, operation and organizational development leading to adjustment and change in order to stimulate a continuous development to cope with national educational situation and existing world.

Such research result can be applied to support an organizational change as follow:

1. Planning

Implementing the ISO quality system can enhance the quality of people more quickly than other system as its systematic working system will encourage an adjustment and alertness to reach success, everyone should maintain their good

performances. Holding good quality assurance system can raise the reputation of organization. If the organization can continuously maintain such quality system, it may be able to develop other system as well. This is a good change and encourages development at the same time. However, before implementing any quality system, all personnel must be prepared to realize its advantages and importance. The system understanding will stimulate a need to develop and can accelerate quick advantages. Thus, whenever it is justified to implement this system (or others), one should not be hesitate. Also try to reduce operating procedures, set up both long-term and short-term plans, gradually implementing in each unit until covering all units in the organization. In addition, clear policies and directions must be communicated continuously.

2. Leader

Organizational leaders in management level should participate in all matters such as financial matters. They should listen to reason, be able to compromise and provide periodical moral supports. If both staff and checkers can overcome the pressure, things will get better. Thus, moral support from the committees management is very important. Besides, leaders should behave as samples. They should be tough, devote themselves through anti-actions may be found. Also, open-minded leaders will face with lower degree of negative affects. Such characteristic can help in assigning an appropriate job to an appropriate man lead to benefit management of leader.

Leaders in quality management (the Quality Management Representative) or QMR must be well accepted, gentle, intent, have clear principles, be a good facilitator and able to solve all kinds of conflicts. Furthermore, they should be able to determine penalties on those who ignore or exercise anti-action, solve this problem and provide working motivation. In some case, they must be very strict and very tough, too.

3. Communication

Some educational institutes which already success the ISO 9002 quality system such as Borommarachonanee Ratchaburi Nursing College, Borommarachonanee Bangkok Nursing College, are pleased to be consultants through query or duplicating but photography is not allowed as it does not provide quality.

For the ISO quality system, certificate acts only as working success maintenance and certify a good working system. Therefore, achieving success is meant to work more systematically.

4. Directing

Organization should be ready to change in order to be able to develop continuously. Good working environment and strong commitment from top management through providing facilities such as conference room, time, welfare, food including budget are also important. In addition, budget should be suitable with the selected system.

5. Cooperation

Cooperation of people at all level in the organization should not be less than 70 percent. Leader should have a self control, and get support from their colleagues in every level. Such support may be internal or external training center , external society and organizations. As the ISO quality system can be achieve only through the organizational commitment and strong will to implement it, creating continuous commitment to the quality is very essential (in supporting the conversion into Autonomous Public Organization). The leader should be as a sample, devote herself and has a self control. All in all, she should be a good capable man to lead a strong commitment to the organizational change. Besides, holding meeting to encourage the personnel's participation is also needed as it can help creating positive attitude towards change. Also a periodical quality assessment is essential to the continuous development. To develop quality, an assessment to maintain quality all time is required. Therefore, it is a common responsibility of all people in the organization to accept and cope with change in order to survive. Quality development is not only an innovation for both people and organization but also support building an organizational loyalty.

6. Others

Clear objectives and directions are needed in implementing ISO quality system. Therefore, a project time is crucial since there are many tasks to be completed within 10 months or 1 year increasing a stress and boredom and may end up with abandon. Hence, a suitable time for one who has a consulting company in implementing ISO quality system is 1 $^{1}/_{2}$ - 2 years since boredom may be occurred if the time is too long.

While implementing the ISO quality system, During ISO any problems and obstacles should be discussed together so as to seek a solution and corporate agreement.

Besides, obtaining a standard it is not necessary to depend on the ISO quality system as a controller. Any organization does not need to obtain a system from center but is able to create a system to control standard by itself.

However, since the existing audit system is not reliable enough importing system from aboard is still done. It would be better if we can construct an audit system that is strong enough to audit ourselves. Thus, instructors have to develop themselves continuously.

Suggestion for further research

This research is a descriptive research analyzing current situation on the ISO quality system implementation of educational institute in order to assure quality conforming to the policy of Ministry of Public Health and University affaire. Government organization should prepare itself for converting into an Autonomous Public Organization in year 2002. Quality assurance is one level of organizational preparing, however, this study is only one part of the Thai Educational Institute in view of nursing public health. Other issues for further study in deep details are listed below:

1. This research is only study on some Nursing Colleges of Pra-borommarajanock Institute of Ministry of Public Health that particular employ ISO as a quality assurance system. In fact there are other quality system that some Nursing Colleges of Pra-borommarajanock of Ministry of Public Health employ. Thus, other

quality system achieved employed by those institute and involving factors should be studied in order to compare the result of the research;

2. Samples in this research are limited only as the committee of Nursing Colleges of Pra-borommarajanock of the Ministry of Public Health. In order to exercise benefit of the result of research much more a study should be done on other educational institutes such as Ratchapat Institute, colleges and schools which employ ISO as a quality assurance system in order to compare the result of research.

3. The periodical assessment should be done on the ISO quality system success group so as to assess the maintenance of quality and also time needed to develop from ISO to TQM (Total Quality Management) by mean of making query to institutes that success ISO 9002.

4. According to the government's plan to convert into an Autonomous Public Organization in year 2002, a study on readiness preparation to be an Autonomous Organization of each educational institute should be done.

Obstacles, Problems and Limits of research

This research has some important obstacles and problems as follow:

1. During data collection period, the nursing colleges have conducted many activities and projects in summer such as junior-management training program, camping with aim to screen student for enrollment, personnel development program and so on. These lead to raise of problem in arranging time, so sometimes the interview is done on holiday;

2. Samples are a groups of management committee that are selected or elected also there are different in number and some institutes have many groups of committee such as writing committee and quality audit committee. Therefore, the samples should be selected from the most involve in and relevant with quality;

3. Quality management committee has many task and responsibility and usually is a group of top level of management so there are absence of some committees due to their conference engagement in up country;

4. The selected nursing colleges are located in different area and quite far from each other. Therefore, interviewing in depth takes a long time of travelling (each college has provided accommodation, however).

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Appendix

Direction : The questionnaire about factors relating to success of ISO 9002 implementation of Nursing College's Committee at Praborommarajanock Institute, Ministry of Public Health are divided in three parts

Part I : Population Data.

Part II : Opinion about quality system.

Part III : Reasons of select or not select ISO 9000 implementation.

Part I : Population data.

1. Name of your organization .....
   Time for work .....
2. Age... .....years
3. Sex ( ) Male ( ) Female
4. Your are working in this organization for ..... year.
5. Your position in this organization is .....
   ( ) Director.
   ( ) Head of department.
   ( ) Quality committee.
   ( ) Lecturer.
   ( ) other (define) .....
6. Your participation to do quality system is .....
   ( ) quality committee.
   ( ) user the quality system.
   ( ) stakeholder for use the quality system.
7. Your organization have a quality system.
   ( ) Yes
   ( ) No
8. Your organization select to used ..... (quality system)
   ( ) 5 S ( ) Q A
   ( ) I S O ( ) T Q M
   ( ) K P I ( ) Other (define).....
9. Your organization have..... quality committee.
   ( ) 5 - 10 ( ) 16 – 20 ( ) 25^{+}
   ( ) 11 - 15 ( ) 21 – 25
10. Your organization has.....men.
    ( ) 10 - 20 ( ) 41 - 60 ( ) 80^{+}
    ( ) 21 - 40 ( ) 61 – 80

Part II : Opinion about quality system.

Please check ✓ in the blank for your opinion

score 5 = very agree with.

score 4 = agree with.

score 3 = uncertain.

score 2 = disagree with.

score 1 = very disagree with.

Question (Man)	opinion levels				
	5	4	3	2	1
1. You are accepted from your friends.					
2. You are participating in work in your organization.					
3. You are activated in your work.					
4. You take a continuous development.					
5. You are participation in problem solving.					
6. You are in love with your organization.					
7. You are working for need of organization.					
8. Your committee and participant are friendly.					
9. Your committee are opened mind and received other opinion.					
10. Your administrators give an equal in works for everybody.					
11. Your administrators are clear cut in works.					
12. Your administrators are always consult participant.					
13. Your administrators are get rid conflict in your organization.					
14. Your administrators are open opportunity for participant in work.					
15. Your administrator gave information and co-operation in and out organization.					

Question (Material)	Opinion levels				
	5	4	3	2	1
1. Your organization has a clear policy.					
2. Your organization has a plan.					
3. Your organization has implemented quality system.					
4. Your organization has already to changed and developed.					
5. Your organization has a continuous assessment works.					
6. Your organization has the facilitator factors for works.					
7. Your organization has a competitive system for continuous development.					
8. Your organization has gained a certificate from internal country.					
9. Your organization has gained a certificate from international. (external country.)					
10. You are agree with quality system of your organization.					
11. You are working in team by job description.					
12. You have gained a training and continuous development.					
13. You are secure and safe in your work.					
14. You have balanced in time for working and family.					
15. You have received assignment for property in works.					

Question (Method)	Opinion levels				
	5	4	3	2	1
1. Your organization have a time to do quality system.					
2. Your organization used many time to do quality system.					
3. Your organization has enough workforces to do quality system.					
4. Your quality committee are already to do quality system.					
5. Your quality committee are ability to do quality system.					
6. Your organization has internal consultants to do quality system.					
7. Your organization has external consultants to do quality system.					
8. Your organization does quality system with the net works.					
9. Your organization wanted external consultants to do quality system.					
10. Your organization wanted quality pattern / form for quality manuals.					
11. Your organization wanted external persons to do quality system.					
12. Your organization worked in system after do quality system.					
13. Your organization has received new technology for development.					
14. Your organization has exchanged information to other organizations.					
15. Your organization used modern technology.					

Question (Money)	Opinion levels				
	5	4	3	2	1
1. Budgets are important to do quality system.					
2. If enough budgets, you may do quality system.					
3. If not enough budget, you may beg to help.					
4. Government may support budget to do quality system.					
5. Non government may support budget to do quality system.					
6. Doing quality system spent much money.					
7. If not enough budget, you may not do quality system.					
8. If not enough budget, you may do with others for decrease cost process.					
9. If not enough budget Pra-borommarajanock Institute may has system to used.					
10. Your organization has enough budget to do quality system.					
11. Your organization used much money to do quality system.					
12. Your organization selected quality system follow by budget.					
13. In the present time, economic system has effect to do quality system.					
14. Thai social system has effect to do quality system.					
15. Other organization, government and non government have effect to do quality system.					

Part III : Reasons to select or not select ISO 9000 implementation.

Section I : Groups select ISO 9000 implementation (can chosen more items)

_____ 1. Your organization has a policy to used.
_____ 2. Your organization has a project co-operated with TISI.
_____ 3. Other organization has a same structure that can do, then we can do so.
_____ 4. Men in organization have knowledge to do ISO 9000.
_____ 5. Believes that ISO 9000 is a standard system.
_____ 6. Believes that men in organization are ability and attention to do ISO 9000.
_____ 7. Believes that men in organization have self-control and can process to do ISO 9000 until success.
_____ 8. You wanted to work in a system.
_____ 9. ISO 9000 system has a clear document that showed clarify in process.
_____ 10. You are co-operation and take a part of works.
_____ 11. Quality committees are good models.
_____ 12. Quality Management Representative is a good facilitator.
_____ 13. Director know that ISO 9000 is important, then she facilitated about foods, location for conference both in and outside organization.
_____ 14. Your organization has a continuous internal audit that can correct and improve the works.
_____ 15. ISO 9000 is a process control, if the process is good can help the service good too, and can protect before lost too.
_____ 16. ISO 9000 is a good cost – benefit because it is a standard system and can developed in the future.
_____ 17. Your organization has internal consultants that have knowledges.
_____ 18. Your organization has external consultants.
_____ 19. Your organization has exchange information from others.
_____ 20. You wanted to develop quality system to TQM.
_____ 21. You wanted to competitive for the quality in the first.
_____ 22. Other _____.

Section II : Groups not select ISO 9000 implementation (can chosen more items)

_____ 1. Your organization has a policy to used other quality system.
_____ 2. Your organization has not project co-operated with TISI.
_____ 3. Organization in education of the government has no one success in ISO 9000.
_____ 4. Men in organization has no knowledged to do ISO 9000.
_____ 5. Not believes that ISO 9000 is acceptable in education.
_____ 6. Not believes that men in organization are ability and attention to do ISO 9000.
_____ 7. Not believes that men in organization have self-control and can process to do ISO 9000 until success.
_____ 8. Working in system is not an indicator for quality system.
_____ 9. ISO 9000 has many document, spent much time and many details.
_____ 10. ISO 9000 is a cause of conflict and form subgroup in the organization.
_____ 11. Your organization has not good model to do quality system.
_____ 12. Your organization has not facilitator factors to do quality system.
_____ 13. Director think that quality system is not important, then she has not serve foods and locations for conference.
_____ 14. Internal audit is a find fault with other and cause an increase in conflict.
_____ 15. Education can look all quality system not only in process.
_____ 16. ISO 9000 spent many budget that not cost-benefit to do.
_____ 17. Your internal consultants have no knowledges to do quality system.
_____ 18. Your organization has no external consultants.
_____ 19. Your organization has no exchange information about process to do ISO 9000.
_____ 20. Your organization has no exchange information about process to do ISO 9000 implementation.
_____ 21. You can competitive better other system than ISO 9000.
_____ 22. Other _____.

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เมษายน 2543

เรื่อง ขอความร่วมมือในการกรอกแบบสอบถาม

เรียน ท่านผู้กรอกแบบสอบถาม

ด้วย ข้าพเจ้า นางสาวบำเพ็ญ พงศ์เพชรดิถ เป็นนักศึกษาหลักสูตรศึกษาศาสตร์ดุษฎีบัณฑิต คณะสังคมศาสตร์และมนุษยศาสตร์ มหาวิทยาลัยมหิดล ได้รับอนุมัติให้ทำการวิจัย เรื่อง "ปัจจัยที่มีผลต่อสัมฤทธิ์ผลของระบบคุณภาพ ISO ของคณะผู้บริหารวิทยาลัยพยาบาล ในสังกัดสถาบันพระบรมราชชนก กระทรวงสาธารณสุข" โดยได้ขอความร่วมมือในการตอบแบบสอบถาม จากคณะผู้บริหารวิทยาลัยพยาบาลจำนวน 35 แห่ง เพื่อให้ทราบถึงความคิดเห็นของคณะผู้บริหารวิทยาลัยพยาบาลเกี่ยวกับระบบคุณภาพ ISO แนวทางการจัดทำระบบคุณภาพ ตลอดจนปัญหา และอุปสรรคต่างๆ ซึ่งจะได้นำข้อมูลที่ได้ไปใช้เป็นแนวทางในการพัฒนาปรับปรุง ระบบคุณภาพต่อไป

จึงเรียนมาเพื่อขอความอนุเคราะห์จากท่าน ช่วยกรอกแบบสอบถามที่ได้แนบมาพร้อมนี้ จะเป็นพระคุณอย่างสูง

ขอแสดงความนับถือ
(นางสาวบำเพ็ญ พงศ์เพชรดิถ)

หมายเหตุ กรุณาส่งแบบสอบถามคืนวันที่ .....
ตามที่อยู่ที่ได้จ่าหน้าซองและปิดแสตมป์มาด้วย
หากมีข้อสงสัยกรุณาติดต่อได้ที่ (032) 322-803, (02) 530-1544

เครื่องมือเก็บข้อมูลการวิจัย

เรื่องปัจจัยที่มีความสัมพันธ์กับสัมฤทธิผลของการใช้ระบบคุณภาพ ISO ของคณะกรรมการบริหารวิทยาลัยพยาบาลในสังกัดสถาบันพระบรมราชชนก กระทรวงสาธารณสุข แบ่งเป็น 3 ส่วน

ส่วนที่ 1 ข้อมูลทั่วไป

ส่วนที่ 2 แบบสอบถามความคิดเห็น

ส่วนที่ 3 เหตุผลของการเลือกและไม่เลือกใช้ระบบประกันคุณภาพ ISO

ส่วนที่ 1

ข้อมูลทั่วไป

1. ชื่อหน่วยงาน ..... เปิดดำเนินการมา ..... ปี

2. อายุ ..... ปี .....เดือน .....

3. เพศ. ( ) ชาย ( ) หญิง

4. ระยะเวลาในการทำงานที่สถาบันแห่งนี้ .....ปี .....เดือน .....

5. ตำแหน่ง หน้าที่ของท่านในหน่วยงาน

( ) ผู้อำนวยการ

( ) หัวหน้าภาค

( ) คณะกรรมการบริหารคุณภาพ

( ) อาจารย์ประจำ

( ) อื่น ๆ ระบุ.....

6. ท่านมีส่วนร่วมเกี่ยวกับการจัดทำระบบประกันคุณภาพ

( ) เป็นคณะกรรมการบริหารคุณภาพ

( ) เป็นผู้ใช้ระบบประกันคุณภาพ

( ) เกี่ยวข้องกับการใช้ระบบประกันคุณภาพ

( ) อื่น ๆ ระบุ.....

7. หน่วยงานของท่านมีการดำเนินการเกี่ยวกับระบบคุณภาพ

( ) มี

( ) ไม่มี

8. หน่วยงานของท่านเลือกใช้ระบบประกันคุณภาพ

( ) 5 ส. ( ) QA

( ) ISO ( ) TQM

( ) KPI ( ) อื่น ๆ ระบุ.....

9. คณะทำงานระบบประกันคุณภาพ ควรมีประมาณ

( ) 5 - 10 คน ( ) 16 – 20 คน ( ) มากกว่า 25 คน

( ) 11 – 15 คน ( ) 21 – 25 คน

10.หน่วยงานของท่านมีบุคลากร

( ) 10 – 20 คน ( ) 41 – 60 คน ( ) มากกว่า 80 คน

( ) 21 – 40 คน ( ) 61 – 80 คน

<u>ส่วนที่ 2</u> แบบสอบถามเกี่ยวกับข้อคิดเห็น

กรุณาทำเครื่องหมาย ✓ ในช่องระดับคะแนนจากความคิดเห็นของท่าน โดยพิจารณาจาก

คะแนน 5 = เห็นด้วยอย่างยิ่ง

คะแนน 4 = เห็นด้วย

คะแนน 3 = ไม่แน่ใจ

คะแนน 2 = ไม่เห็นด้วย

คะแนน 1 = ไม่เห็นด้วยอย่างยิ่ง

ข้อ	ข้อคิดเห็น (man)	ระดับคะแนน				
		5	4	3	2	1
1	ท่านได้รับการยอมรับจากเพื่อนร่วมงาน					
2	ท่านมีส่วนร่วมในการดำเนินงานของสถาบัน					
3	ท่านได้รับการกระตุ้นในการปฏิบัติงาน					
4	ท่านได้รับการพัฒนาอย่างต่อเนื่อง					
5	ท่านได้มีส่วนร่วมในการแก้ปัญหาเป็นระยะ					
6	ท่านมีความผูกพันและรักสถาบัน					
7	ท่านทำงานเพื่อตอบสนองความต้องการของสถาบันเป็นหลัก					
8	ผู้บริหารและผู้ร่วมงานมีความเป็นมิตรต่อกัน					
9	ผู้บริหารรับฟังความคิดเห็นของผู้อื่น					
10	ผู้บริหารให้ความเสมอภาคในการดำเนินงานกับทุกคน					
11	ผู้บริหารมีความโปร่งใสในการดำเนินงาน					
12	ผู้บริหารมีการปรึกษางานกับผู้ร่วมงานอย่างสม่ำเสมอ					
13	ผู้บริหารสามารถขจัดข้อขัดแย้งระหว่างกลุ่มในสถาบัน					
14	ผู้บริหารเปิดโอกาสให้บุคคลมีส่วนร่วมในการดำเนินการ					
15	ผู้บริหารเป็นผู้รับรู้ข่าวสาร, มีการประสานงานทั้งภายในและภายนอกสถาบัน					

ข้อ	ข้อคิดเห็น (material)	ระดับคะแนน				
		5	4	3	2	1
1	หน่วยงานของท่านมีการกำหนดนโยบายชัดเจน					
2	หน่วยงานของท่านมีการวางแผนดำเนินงาน					
3	หน่วยงานของท่านมีระบบการดำเนินงานเกี่ยวกับระบบประกันคุณภาพ					
4	หน่วยงานมีความพร้อมจะเปลี่ยนแปลงและพัฒนาอย่างต่อเนื่อง					
5	หน่วยงานมีการประเมินผลการปฏิบัติงานอย่างต่อเนื่อง					
6	หน่วยงานมีบรรยากาศเอื้อต่อการทำงาน					
7	หน่วยงานมีระบบการแข่งขัน เพื่อพัฒนาอย่างต่อเนื่อง					
8	หน่วยงานจะขอการรับรองการทำประกันคุณภาพจากภายในประเทศ					
9	หน่วยงานจะขอการรับรองการทำประกันคุณภาพ จากภายนอกประเทศ					
10	ท่านมีความเห็นด้วยกับระบบประกันคุณภาพของวิทยาลัยฯ					
11	ท่านมีการทำงานร่วมกันเป็นทีม โดยแบ่งความรับผิดชอบ					
12	ท่านได้รับการฝึกอบรม&พัฒนาอย่างต่อเนื่อง					
13	ท่านมีความมั่นคงในการปฏิบัติงาน					
14	ท่านมีความสมดุลยในการปฏิบัติงาน (เวลางาน : เวลาครอบครัว)					
15	ท่านได้รับมอบหมายงานตามความเหมาะสม					

ข้อ	ข้อคิดเห็น (method)	ระดับคะแนน				
		5	4	3	2	1
1	ท่านและหน่วยงานมีเวลาในการจัดทำระบบประกันคุณภาพ					
2	หน่วยงานของท่านใช้เวลาในการจัดทำระบบประกันคุณภาพมาก					
3	หน่วยงานของท่านมีบุคลากรพอเพียงในการจัดทำระบบประกันคุณภาพ					
4	บุคลากร/ทีมในการจัดทำระบบประกันคุณภาพมีความพร้อม					
5	บุคลากร/ทีมในการจัดทำระบบประกันคุณภาพมีความสามารถพอ					
6	หน่วยงานของท่านมีที่ปรึกษาภายในในการทำระบบประกันคุณภาพ					
7	หน่วยงานของท่านมีที่ปรึกษาภายนอกในการทำระบบประกันคุณภาพ					
8	หน่วยงานของท่านมีมีการจัดทำระบบประกันคุณภาพร่วมกับเครือข่าย					
9	หน่วยงานของท่านต้องการบุคลากรในการให้คำปรึกษาการจัดทำระบบ					
10	หน่วยงานของท่านต้องการรูปแบบการประกันคุณภาพเพื่อเป็นคู่มือในการปรับใช้					
11	หน่วยงานของท่านต้องการบุคลากรภายนอกมาจัดทำระบบประกันคุณภาพให้					
12	หน่วยงานของท่านมีการทำงานเป็นระบบมากขึ้นจากการจัดทำระบบประกันคุณภาพ					
13	หน่วยงานของท่านมีการรับเทคโนโลยีใหม่ ๆ เพื่อ การพัฒนา					
14	หน่วยงานของท่านมีการแลกเปลี่ยนข้อมูล ข่าวสารต่างหน่วยงาน/สถาบัน					
15	หน่วยงานของท่านมีการใช้เทคโนโลยี & ทันสมัย					

ข้อ	ข้อคิดเห็น (money)	ระดับคะแนน				
		5	4	3	2	1
1	งบประมาณ (เงิน) มีความสำคัญต่อการจัดทำระบบประกันคุณภาพ					
2	งบประมาณ (เงิน) พอเพียงควรมีการจัดทำระบบประกันคุณภาพ					
3	งบประมาณ (เงิน) ไม่พอเพียงควรขอความช่วยเหลือ					
4	รัฐบาลควรจัดสรร งบประมาณ (เงิน) เพื่อสนับสนุนการจัดทำระบบ ฯ					
5	เอกชนควรจัดสรร งบประมาณ (เงิน) เพื่อสนับสนุนการจัดทำระบบ ฯ					
6	การจัดทำระบบประกันคุณภาพใช้งบประมาณ (เงิน) มาก					
7	งบประมาณ (เงิน) ไม่พอเพียง ไม่ควรจัดทำระบบประกันคุณภาพ					
8	งบประมาณ (เงิน) ไม่พอเพียง ควรร่วมกันจัดทำระบบฯเพื่อลดต้นทุน					
9	งบประมาณ (เงิน) ไม่พอเพียง ส่วนกลางควรมีระบบให้นำไปใช้ได้					
10	หน่วยงานของท่านมีงบประมาณ (เงิน) พอเพียงในการจัดทำ					
11	หน่วยงานของท่านใช้งบประมาณ (เงิน) มากในการจัดทำระบบ ฯ					
12	หน่วยงานของท่าน เลือกใช้ระบบประกันคุณภาพตามงบประมาณที่ได้					
13	ระบบเศรษฐกิจในปัจจุบันมีผลต่อการจัดทำระบบป้องกันคุณภาพ					
14	ระบบสังคม (ไทย)มีผลต่อการจัดทำระบบประกันคุณภาพ					
15	องค์การอื่น, ทั้งของรัฐและเอกชนมีผลต่อการจัดทำระบบประกันคุณภาพ					

<u>ส่วนที่ 3</u> : เกี่ยวกับเหตุผลในการเลือกใช้หรือไม่เลือกใช้ระบบประกันคุณภาพ ISO

ตอนที่ 1 เฉพาะผู้ที่เลือกใช้ ISO (ตอบได้มากกว่า 1 ข้อ)

____1. มีนโยบายให้ใช้

____2. มีโครงการจากหน่วยงานของรัฐ (สมอ) ให้เข้าร่วม

____3. มีหน่วยงานที่มีโครงสร้างคล้ายกันทำแล้ว จึงสามารถทำได้เช่นกัน

____4. บุคลากรภายในมีความรู้เกี่ยวกับระบบคุณภาพ ISO

____5. เชื่อว่าเป็นระบบที่เป็นมาตรฐานสากล

____6. เชื่อว่าบุคลากรภายในมีความสามารถและตั้งใจในการทำระบบคุณภาพ ISO

____7. เชื่อว่าบุคลากรภายในมีความสามารถในการควบคุมตนเองและการดำเนินงานเกี่ยวกับระบบคุณภาพ ISO ได้สำเร็จ

____8. ต้องการให้มีการทำงานเป็นระบบ

____9. มีเอกสารที่ชัดเจนเป็นหลักฐาน แสดงขั้นตอนการดำเนินงานชัดเจน

____10. มีการทำงานร่วมกันทุกคน เป็นส่วนหนึ่งของงาน

____11. คณะกรรมการบริหารคุณภาพเป็นตัวแบบที่ดี

____12. ตัวแทนฝ่ายบริหารคุณภาพเป็นผู้เอื้ออำนวยความสะดวกที่ดี (Facilitator)

____13. ผู้บริหารเห็นความสำคัญโดยมีมาตรการรองรับเช่น จัดเวลาอาหาร และสถานที่ประชุมให้ทั้งภายในและภายนอกสถาบัน

____14. มีการตรวจสอบเป็นระยะๆ ช่วยปรับปรุง & แก้ไขข้อบกพร่องเป็นการลดความผิดพลาดในงานให้น้อยลง

____15. เป็นระบบควบคุมกระบวนการ หากดี ช่วยให้บริการดีด้วย และเป็นการป้องกันก่อนจะเกิดความเสียหาย

____16. มีความคุ้มค่า คุ้มทุน เพราะเป็นระบบรักษามาตรฐาน & พัฒนาในอนาคต

____17. มีคณะที่ปรึกษาภายในที่มีความรู้

____18. มีคณะที่ปรึกษาจากภายนอก

____19. มีการติดตามแลกเปลี่ยนข้อมูล

____20. ต้องการพัฒนาระบบประกันคุณภาพต่อถึง TQM

____21. ต้องการแข่งขัน เพื่อให้มีคุณภาพแถวหน้า

____22. อื่น ๆ ระบุ _____

ตอนที่ 2 เฉพาะผู้ที่ไม่เลือกใช้ ISO (ตอบได้มากกว่า 1 ข้อ)

____1. มีนโยบายให้ใช้ระบบอื่น

____2. ไม่ได้รับการเสนอชื่อเข้าร่วมโครงการกับหน่วยงานของรัฐ

____3. หน่วยงานทางการศึกษาของรัฐบาล ยังไม่มีใครทำได้สำเร็จ

____4. บุคลากรภายในไม่มีความรู้เกี่ยวกับระบบคุณภาพ ISO

____5. ไม่เชื่อว่าระบบคุณภาพ ISO จะเป็นที่ยอมรับทางการศึกษา

____6. ไม่เชื่อว่าบุคลากรภายใน มีความตั้งใจหรือสามารถในการทำระบบคุณภาพ ISO

____7. ไม่เชื่อว่าบุคลากรภายใน จะมีความสามารถในการควบคุมตนเอง และดำเนินงานเกี่ยวกับระบบคุณภาพ ISO ได้สำเร็จ

____8. การทำงานเป็นระบบมิใช่ตัวบ่งบอกคุณภาพ

____9. เอกสารมาก เสียเวลา กับรายละเอียดมากเกินไป

____10. ก่อให้เกิดการขัดแย้งทางความคิด และแตกกลุ่มมากขึ้น

____11. ไม่มีตัวแบบที่ดีในการดำเนินการระบบคุณภาพ

____12. ไม่มีปัจจัยเอื้ออำนวยความสะดวกในการจัดทำระบบคุณภาพ

____13. ผู้บริหารไม่เห็นความสำคัญ และไม่มีมาตรการรองรับ เช่น ต้องหาเวลานัดประชุม หาสถานที่ประชุมกันเอง

____14. การตรวจสอบเป็นการจัดผิดกัน ก่อให้เกิดความขัดแย้งเพิ่มขึ้น

____15. การศึกษา ควรดูที่คุณภาพการศึกษาทั้งหมด มิใช่กระบวนการเพียงอย่างเดียว

____16. ใช้งบประมาณมาก ไม่คุ้มค่า และเวลาที่ทำ

____17. คณะที่ปรึกษาภายในไม่มีความรู้เกี่ยวกับระบบคุณภาพที่ชัดเจน

____18. ไม่มีที่ปรึกษาจากภายนอก

____19. ไม่เคยได้รับข้อมูลข่าวสาร จากการใช้ระบบคุณภาพ ISO

____20. สามารถพัฒนาระบบประกันคุณภาพต่อถึง TQM ได้โดยไม่ต้องใช้ระบบคุณภาพ ISO

____21. การแข่งขันโดยใช้ระบบคุณภาพอื่นทำได้ดีกว่า

____22. อื่นๆ ระบุ _____

<u>คำถามเกี่ยวกับทัศนติและการเปลี่ยนแปลงพฤติกรรมเกี่ยวกับการใช้ระบบประกันคุณภาพ</u>

1. แนวคำถามที่ใช้ถามในช่วงก่อนการทำ (ใช้ระบบคุณภาพ ISO)

1.1 ท่านรู้สึกอย่างไรบ้างก่อนใช้ระบบคุณภาพ (ขอให้เล่าความรู้สึกทั้งหมดอย่างละเอียด)

1.2 ท่านมีการเตรียมตัวก่อนการใช้ระบบคุณภาพหรือไม่ อย่างไร

1.3 ท่านคิดว่าระบบคุณภาพ ISO มีประโยชน์ต่อท่าน / หน่วยงานหรือไม่ อย่างไร. (ท่านคาดหวังกับการใช้ระบบคุณภาพ ISO อย่างไร)

1.4 ท่านมีปัญหาในการใช้ระบบคุณภาพ ISO หรือไม่ อย่างไร

1.5 ท่านคิดว่าระบบคุณภาพ ISO มีผลกระทบต่อท่าน หน่วยงานหรือไม่ อย่างไร

1.6 ปัจจัยส่งเสริมและอุปสรรคในการแก้ปัญหาในช่วง (ก่อนทำ) มีอะไรบ้าง (อะไรที่ช่วยในการแก้ปัญหา หรือ อะไรบ้างที่ทำให้เกิดความยากลำบากในการแก้ปัญหา)

1.7 ท่านต้องการความช่วยเหลือในเรื่องใด จากใคร และอย่างไร

2. แนวคำถามที่ใช้ในช่วงขณะทำ (ใช้) ระบบคุณภาพ ISO

2.1 ขณะทำระบบคุณภาพ ISO ท่านมีความรู้สึกอย่างไร (ขอให้เล่าโดยละเอียด)

2.2 ท่านมีวิธีแก้ปัญหาและควบคุมสถานการณ์ที่เกิดขึ้นได้หรือไม่ อย่างไร

2.3 ท่านมีวิธีการอย่างไรในการทำให้สถานการณ์ต่าง ๆ ดีขึ้น

2.4 ปัจจัยส่งเสริม และอุปสรรคในการแก้ปัญหาในช่วง (ขณะทำ) มีอะไรบ้าง (อะไรที่ช่วยในการแก้ปัญหา หรืออะไรบ้างที่ทำให้เกิดความยากลำบากในการแก้ปัญหา)

2.5 ท่านต้องการความช่วยเหลือในเรื่องใด จากใคร และอย่างไร

3. แนวคำถามที่ใช้ในช่วงทำระบบคุณภาพ ISO เสร็จแล้ว

3.1 ขณะนี้ท่านมีปัญหา หรือความรู้สึกอย่างไร (ขอให้เล่าโดยละเอียด)

3.2 ท่านมีความคิดเห็นอย่างไรต่อระบบคุณภาพ ISO (คิดว่ามีประโยชน์ ผลดี ผลเสีย ตามที่คิดไว้หรือไม่อย่างไร)

3.3 ปัจจัยส่งเสริมและอุปสรรค์ในการแก้ปัญหาช่วงนี้ (เสร็จ) มีอะไรบ้าง (อะไรที่ช่วยให้ท่านแก้ปัญหาต่างๆ ได้ และอะไรบ้างที่ทำให้ท่านเกิดความยากลำบากในการแก้ปัญหา)

3.4 ท่านคิดว่า สิ่งสำคัญที่สุดที่ทำให้ท่านแก้ปัญหาต่าง ๆ ได้ดีในช่วงการทำระบบคุณภาพ ISO คืออะไร

3.5 ท่านคิดว่า สิ่งสำคัญที่สุดที่ทำให้ท่าน หน่วยงานของท่าน ประสบผลสำเร็จในการใช้ (ทำ) ระบบคุณภาพ ISO คืออะไร (ขอให้เล่าอธิบายโดยละเอียด)

3.6 หลังทำสำเร็จ ท่านมีความต้องการความช่วยเหลือหรือ ในเรื่องอะไร จากใคร อย่างไร

รายนามคณะกรรมการบริหารวิทยาลัย ที่จัดทำระบบคุณภาพ ISO สำเร็จ

1. อาจารย์ ชุติมา	ปัญญาพินิจนุกูร	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
2. อาจารย์ ราตรี	ฉันทชล	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
3. อาจารย์ นิทรา	คชรักษ์	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
4. อาจารย์ สุรัตน์	บูรณะวรกุล	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
5. อาจารย์ จุฬาลักษณ์	โชติกสถิตย์	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
6. อาจารย์ อภิญญา	เพียรพิจารย์	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
7. อาจารย์ สมจิต	ชัยยะสมุทร	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
8. อาจารย์ ฟิริยลักษณ์	ศิรศุภลักษณ์	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
9. อาจารย์ พจนา	กิจอาทร	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
10. อาจารย์ อวยพร	สุทธิสนธ์	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
11. อาจารย์ ศิริสุข	มัติวรรณ	วิทยาลัยพยาบาลบรมราชชนนี	กรุงเทพ
12. อาจารย์ พาณี	คงเพ็ชรดิษฐ์	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
13. อาจารย์ วรรณี	ศรีวิลัย	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
14. อาจารย์ รจนารถ	ชูใจ	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
15. อาจารย์ มาลินี	จาเนียร	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
16. อาจารย์ นิศากร	เยาวรัตน์	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
17. อาจารย์ สรัญญา	จิตต์เจริญ	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
18. อาจารย์ วรรณา	รุ่งวณิชชา	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
19. คุณ สุนทรี	เอกกิตติ	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
20. คุณ พิสมัย	อานัญจวณิชกุล	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
21. คุณ ขวัญตา	เพชรมณีโชติ	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
22. คุณ สุพัตรา	ไตรอุดมศรี	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
23. คุณ ปทุมวดี	สีใส	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
24. คุณ จิริยา	อินทะนา	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี
25. คุณ เบญจวรรณ	ศรีโยธิน	วิทยาลัยพยาบาลบรมราชชนนี	ราชบุรี

รายนามคณะกรรมการบริหารวิทยาลัย ที่กำลังดำเนินการจัดทำระบบคุณภาพ ISO

1. อาจารย์ วิมลนิจ	สิงหะ	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
2. อาจารย์ ดวงพร	ปียะคง	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
3. อาจารย์ สุรีย์	จินเรือง	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
4. อาจารย์ เยาวลักษณ์	มหาสิทธิวัฒน์	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
5. อาจารย์ ประนอม	อิ่มเอม	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
6. อาจารย์ ประกริต	รัชวัต	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
7. อาจารย์ เพ็ญศรี	จึงธนาเจริญเลิศ	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
8. อาจารย์ พนิตนาฎ	ชำนาญเสือ	วิทยาลัยพยาบาลบรมราชชนนี	สระบุรี
9. อาจารย์ ผจงจิตร	ไทยอุดม	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
10. อาจารย์ ภิรมย์ลักษณ์	มีสัตยานันท์	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
11. อาจารย์ อรอนงค์	ทวนพรมลาศ	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
12. อาจารย์ ประไพ	สุวรรณรัตน์	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
13. อาจารย์ อภิรดี	สุขแสงดาว	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
14. อาจารย์ ศรีเกียรติ์	อนันต์สวัสดิ์	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
15. อาจารย์ ประนอม	คมพยัคฆ์	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
16. อาจารย์ สายสวาท	เผ่าพงษ์	วิทยาลัยพยาบาลบรมราชชนนี	นครราชสีมา
17. อาจารย์ พิมพรรณ	รัตนโกมล	วิทยาลัยพยาบาลบรมราชชนนี	ชัยนาท
18. อาจารย์ ดวงใจ	สุขสวัสดิ์	วิทยาลัยพยาบาลบรมราชชนนี	ชัยนาท
19. อาจารย์ สุรีรัตน์	เตี้ยอนุกูล	วิทยาลัยพยาบาลบรมราชชนนี	ชัยนาท
20. อาจารย์ ประไพจิตร	โสมภีร์	วิทยาลัยพยาบาลบรมราชชนนี	นพรัตน์ราชธานี
21. อาจารย์ วนิดา	เชื้อพราหมณ์	วิทยาลัยพยาบาลบรมราชชนนี	นพรัตน์ราชธานี
22. อาจารย์ วิบูลย์รัตน์	ปรียาวงศากุล	วิทยาลัยพยาบาลบรมราชชนนี	นพรัตน์ราชธานี
23. อาจารย์ สุดารัตน์	ดวงแก้ว	วิทยาลัยพยาบาลบรมราชชนนี	นพรัตน์ราชธานี
24. อาจารย์ ประภาศรี	จิระยิ่งมงคล	วิทยาลัยพยาบาลบรมราชชนนี	นพรัตน์ราชธานี
25. อาจารย์ หทัยรัตน์	บุษยพรรณพงศ์	วิทยาลัยพยาบาลบรมราชชนนี	ชัยนาท

BIOGRAPHY

NAME	Miss Bampen Phongphetdit
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