Full Length Research Paper

Application of total quality management system in Thai primary schools

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The present study seeks to develop a total quality management (TQM) system that can be applied to primary schools. The approach focuses on customer orientation, total involvement of all constituencies and continuous improvement. TQM principles were studied and synthesized according to case studies of the best practices in 3 primary schools (small, medium, and large) I Inputs were defined as (organizational leadership and organizational resources. Processes were defined as existing in five subsystems, strategic planning, student and stakeholder focus, knowledge management and measurement, staff focus, and process management. Output consisted of education towards excellence and improved performance of the students as the result of the work of subsystems. The application of TQM to improve quality of education in the school system provides a high quality gradient focusing on improvement in student performance in terms of academic achievement, key competencies and scores on achievement tests in reading, critical thinking and writing

Key words: Total quality management, school system, primary, application.

INTRODUCTION

Organizational management and development is one of the important missions of the organization to focus on improving the quality of the organization to increase competitiveness for excellence and achieve the set goals. In management of the organization, leaders must find innovative ways to develop a work system within their own organizations to increase their ability to compete. For these purposes, many organizations have adopted the concept of Total Quality to make changes and develop the organization. Initially, the concept of total quality was introduced in business and industrial organizations

(Deming, 1986; Jazzar and Algozzine, 2005; Juran, 1988, 1989; Scherkenbach, 1991; Scrabec, 2000). Its evolution began as Quality Inspection, Quality Control, a process with an emphasis on error detection or reduction to a minimum called "Zero Defect" (Crosby, 1979: 19). This concept began to change to provide Quality Assurance in the organization and more attention to customers (Sallis, 2002: 17). Total Quality Management (TQM) is a basic philosophy of creating a culture for organizational change, focusing on how to improve the quality continuously, with the participation of stakeholders and

focus on customers. TQM is an activity that can be integrated into all parts of the organization (Pool, 2000: 37). The concept of Total Quality Management was introduced in the organizations, as a tool for building quality and management solutions to control the quality and to guide the restructuring of organizational performance to achieve organizational quality, which is beneficial to the organization as an alternative. TQM practices help an organization gain an advantage in the competition and move forward. Total Quality Management in an organization is one of several management systems based on the philosophy that, "if you are able to create products or services to the satisfaction of customers, they should come back for more ". With this concept, it is actually possible to rely on the cooperation of all personnel in the organization for behavioral modifications. The application of TQM to improving quality of education in the school system provides a high quality gradient focusing on steep-slope improvement in quality performance (Audette, 1992; Audette and Algozzing, 1992,1997; Baugher, 1992; Cohen, 1991; Downey et al., 1994; Hau, 1991; Heverly, 1992; Jazzar and Algozzine, 2005; Scrabec, 2000; Murgatroyd and Morgan, 1994). In this study, TQM is the holistic management system or holistic TQM which means everything and everyone in the organization are involved in a continuous improvement. In countries like USA and Australia, TQM has been applied to raise the quality standards for higher education.

Total Quality Management is a modern management system in the tradition of neo-liberalism. In TQM, it is important to focus on improvement and commitments to continuous quality improvement. TQM is used in education as a strategy to make continuous changes and improvement in the education system (Schomoker and Wilson, 1993). Therefore, the quality of education has to be modified and improved to make appropriate and timely changes in the globalized world. In the case of Thailand, striving to become a knowledge-based society and economy are the key reasons that the quality of education needs to be improved. For Thailand to join the ASEAN Community, all educational institutions and schools need to educate and prepare Thai youths for effective competition and cooperation. As a result, the system of education in all schools of Thailand needs to be updated with the changes. Because educational institutions are the key places to put educational reform policies into practice to achieve the goals set forth in the strategic educational reform in the second decade (2009 - 2018), it is necessary to improve the system to achieve quality by building a quality culture in schools. One process that can create a quality culture is to develop the

organizational quality management system in the management of educational institutions, thus resulting in a change management system. (Boyer, 1995; Tyler, 1949). In addition to meeting the policy of educational reform, it responds to the need for Thailand to join the countries of the ASEAN Community. In other words, Thailand has to adjust itself to compete for survival in the community. However, change requires leadership to improve the quality management system to have the organizational capacity to compete, especially the development of quality management systems in schools. If organizations do not pay attention to the dimensions of educational quality and customers (in this case, parents and teachers) do not care about the students, it is a risk to the survival of the organization. In that case, education is the key issue to turn the public's attention to the quality of the organization. This is done by developing a system with the goal of improving the performance of students so as to increase Thailand's potential to enter the competition in ASEAN Community.

Challenges

The main problems regarding Thai education capacity comprise education opportunities, quality of students' performance, and effectiveness of instruction which are unsatisfactory and low compared to previous years. The performance of Thai children has continually gone down. This can be gauged from various forms of the national standardized test known as Ordinary National Educational Test (O-NET). It was found that the scores of Thai students who took the test in 2010 were lower than 50%. Grade 9 students passed in just one subject: Health Education. The results of O-NET in 2011 showed that grade 6 students secured scores higher than 50% in Mathematics, Social Studies, Culture and Physical Education; however, their scores were lower than 50% in English and art (National Institute of Educational Testing Service, 2012). In terms of primary school assessments, the external assessment conducted by the Office of National Education Standards and Quality Assessment during 2006-2010 showed that the average value in 14 standards was satisfactory. Among the total of 12,268 Thai primary schools, 79.10% were accredited and 20.93% were not accredited. The poor performance of Thai primary schools in administration and management was indicated in the second round of external quality assessment. This poor performance was caused by the poor quality standard of student development competencies such as: critical thinking and practical capacity, problem solving abilities, curriculum-based outcomes,

learning commitments, and lifelong learning (Office of National Education Standards and Quality Assessment, 2010).

Organizational leadership

This is the most important factor affecting the performance of the organization focusing on making the aims and objectives of the activities successful and quality-oriented. Mortimore et al. (1993) proposed many essential factors as indicators of the effectiveness and quality of school, one of which is leadership of school administrators in academic administration, content guidance, and instructional strategies. Photiwat (2004) conducted research on the effectiveness of the policy of learning reforms in the Northeast primary schools in Northeastern Thailand and found that leadership and motivation directly affected the learner-centered learning approach, achievement, behaviors, and satisfaction. Thus, it can be seen that the leadership of school administrators is an important factor that affects directly and indirectly the total quality management system of a school. In other words, the school leader must have vision and determination to accomplish its mission, encourage staff and colleagues to participate and continuously improve the quality of instruction. It can be concluded that leadership refers to the ability to use relevant skills and competencies to guide and direct all participants to achieve the end results.

Organizational resources

This is the factor that affects and challenges the results of operations of the school or the effectiveness and efficiency of the school process. Steers (1977) discussed the four factors that affect and influence the organizational effectiveness as follows: 1) Organizational Characteristics (Structure, Decentralized Control, Level of Task Specialization, Formalization, Span of Control, Organization Size, Work-Unit Size), 2) Environmental Characteristics: a) External Factors covering Complexity, Stability, Uncertainty, b) Internal Factors consisting of Achievement Orientation, Employee Centeredness, Reward - Punishment Orientation, Security vs. Risk, Openness vs Defensiveness, 3) Employees' Characteristics (Organizational Attachment, Attraction, Retention, Commitment, Job Performance, Motives, Goals, Needs, Abilities, Role Clarity), and 4) Managerial Policies and Practices (Strategic Goal Setting, Resource Acquisition and Utilization, Creating a Performance Environment, Communication Processes, Leadership and Decision Making, Organizational Adaptation and Innovation). Kaufman and Zahn (1993) discuss the application of the input factors that affect the quality management in the school, such as the objectives, rules and regulations, budget, equipment, materials, faculty, students, learning resources, and community. Chandawanich (2004) describes the concept of a quality school as arising from the need to improve the quality of education as a system with the aim to bring equality of educational services to children in Thailand. Therefore, analyzing the quality of a school is associated with various components or contexts of the school which are the input factors: 1) good external environment of the school conducive for quality education, 2) sufficient number of teachers, administrators and education professionals, 3) physical characteristics of school standards, 4) courses appropriate to the learners and local community, 5) advanced media/technology, equipment, 6) various learning resources in the school, and 7) result-oriented budget.

Development system as transformational tool

Chaleo (2002) states that system is a "working unit" composed of a number of subsystem units. This means when the system is analyzed to identify a component, it is found to consist of a number of small units or subsystems with input, process, and product. Being a subsystem unit of a supra system unit means the system is part of the meta-system, the units of which are larger than this unit. Such a meta-system is composed of subunits or subsystems where a member or all of these components will work together to produce the results in a total yield of the meta-system. The development of the total quality management system for basic education under the Basic Education Commission is the research and development process which the researcher benefited from the system development process in these three steps: 1) System Investigation and Analysis, 2) System Design and Verification, 3) System Implementation and Evaluation, according to Edwards (1985), Stair (1996), Avison et al. (2003) and O'Brien et al. (2008).

THEORETICAL FRAMEWORK

Conceptual framework for Total Quality Management of Deming's PDCA or Deming Cycle: Plan - Do - Check - Act was applied in the design of a quality management system in the selected primary schools. It was used as an
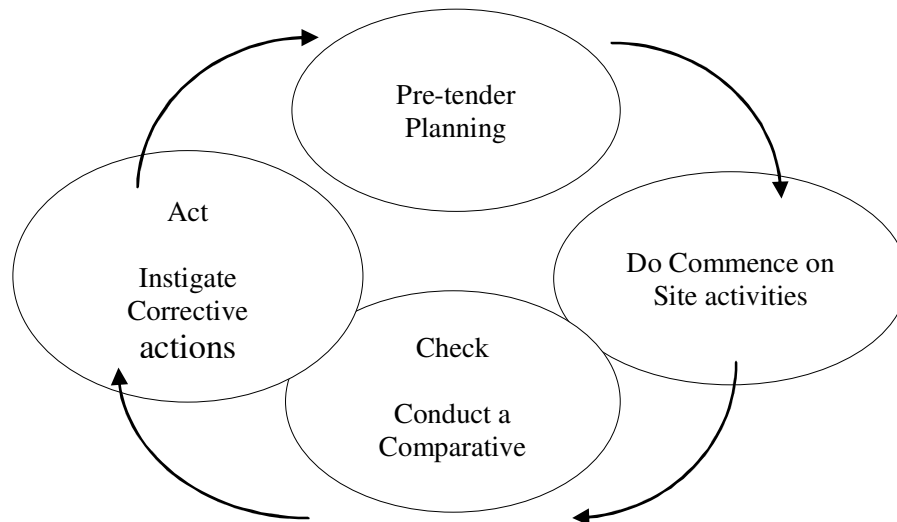
Figure 1. Deming Dynamic Control Loop Cycle.

open system in society consisting of four important elements: 1) Input, 2) Process, 3) Output and 4) Feedback. There are important characteristics of an open system with the management and control system that control the structure and design of subsystems in the organization. This leads to effectiveness and efficiency in achieving the goal of learners' quality. A school system is a system with workflows and continuous quality following PDCA or Deming Cycle as shown in Figure 1.

1. Plan: Identify students' and stakeholders' needs and expectations, set strategic objectives
2. Do: Implement and operate processes
3. Check: Collect the quality of students, monitor and measure the processes, review and analyze
4. Act: Continually improve process performance.

Mulcolm Baldrige National Quality Award: MBNQA,

There are seven categories that make up the Baldrige criteria. These criteria are the basis for choosing the award recipients and were designed to enhance competitiveness. More importantly, these criteria provide a framework which an organization can use to improve overall performance. The criteria are given in Table 1.

The researchers have applied this conceptual framework for developing a quality management system in the target primary schools under Department of Basic Education by synthesizing the following seven

components of the Total Quality Management:

1) Organizational Leadership: Vision, communication, policy, good governance
2) Strategic Planning: Strategy and gold, action plan
3) Students' and Stakeholders' Focus: Students' and stakeholders' needs and expectations, involved stakeholders
4) Knowledge Management, Analysis and Measurement: Monitor and measure the processes, review and analyze
5) Staff Focus: Human recourse, teamwork
6) Process Management: System and procedure, continuous improvement
7) Output and Outcome: Student result, student quality, academic achievement, key competencies and scores on achievement tests in reading, critical thinking and writing

Objectives of research

The objectives of this research were: 1) to study the components of a total quality management system in primary schools under Office of the Basic Education Commission, 2) to study the current situations and problems, and offer suggestions to improve the total quality management system in primary schools under Office of the Basic Education Commission, 3) to develop and implement a total quality management system in primary schools under Office of the Basic Education, 4) to study the effects or results of the total quality

Table 1. The 1992 Baldrige award criteria (1000 points total).

Leadership (90 points)	Management of process quality (140 points)
Senior executive	Design and introduction of products and services
Management for quality	Process management-production and delivery
Public responsibility	Process management-business and support
	Supplier quality
Information and analysis (80 points)	*Quality and operational results* (180 points)
Scope and management of quality and	Product and service quality
Performance data	Company operations
	Business process and support services
Competitive comparisons and benchmarks	Supplier quality
Strategic quality planning (60 points)	*Customer focus and satisfaction* (300 points)
Strategic quality and planning process	Customer relationships
Quality and performance plans	Commitment to customers
Human resource development and management (150 points)	
Human resource management	Customer satisfaction results
Employee involvement	Customer satisfaction comparisons
Employee education and training	Future requirements and expectations
Employee well-being and morale	

Source: George (1992).

management system implemented in primary schools under Office of the Basic Education Commission.

METHODOLOGY AND DATA ANALYSIS

Techniques of Research and Development (R&D) were employed for this study by using mixed methods research techniques by collecting data through quantitative as well as qualitative technique. This study investigated the development of an effective TQM to be employed in primary schools in Thailand. The research proceeded in three phases as shown in Table 2.

Phase 1: Systems Investigation and Analysis: This is the study and analysis of the total quality management system in primary schools under Office of the Basic Education Commission, current situation, and offers suggestions, consisting of the following steps:

Step 1: Study of concepts and theories from various documents and research in different countries, synthesize important elements to develop a total quality management system
Step 2: Monitoring and evaluation of the components of the total quality management system in key pilot schools by 5 experts.
Step 3: Surveying of the current situation, problems and suggestions regarding the implementation of a total quality management system in primary schools from the samples of 936 school administrators, academic staff, and teachers who were respondents by using a questionnaire scored according to a 5 Level Likert Scale. Data were analyzed by calculating the Mean and Standard Deviation

Phase 2: System Design and Verification. The aim of this phase

was to design and monitor the total quality management system in the primary schools under the Basic Education Commission, with the following detailed steps:

Step 1: Studying of the best practices in 3 primary schools (small, medium, and large) under Office of the Basic Education that have been granted a Royal Recognition Award during academic year 2011. The focus was to examine how some of the concepts, systems theory, administrative principles and guidelines for the management of schools can be fused with teaching excellence to improve student performance within the development of the total quality management system.
Step 2: Systems Design. This is the process of fusing different elements or components of the total quality management system in primary schools under Office of the Basic Education. The researcher used the results of the analysis and synthesis of papers and related research, taking into account the components of total quality management system, current problems, suggestions, and samples of the best practices in 3 primary schools (small, medium, and large) that received the Royal Recognition Award from Ministry of Education as the guidelines for designing and developing the total quality management system and preparing the manual of the total quality management system in primary schools under the Office of the Basic Education.
Step 3: System Verification. This step is to propose the developed design of the total quality management system in primary schools under Office of the Basic Education to 9 experts for examination and verification. The design will then be improved based on the comments and recommendations of those experts.

Phase 3: System Implementation and Evaluation. This step implements and evaluates the total quality management system in the selected primary schools under Office of the Basic Education

Table 2. phases of study.

Phase	Step	Person/Sample	Procedures/ collecting data	Result/outcome
1. Systems Investigation and Analysis	1. Study of concepts and theories from various documents and research	Researcher	Study and analysis data	Conceptual framework
1.1 Study the components of TOM,	2. Monitoring and evaluation of the components	key pilot schools by 5 experts.	the semi-structured interview	Components of TOM,
1.2 Survey of the current situation, problems and suggestions	3. Survey of the current situation, problems and suggestions	936 school administrators , academic staff, and teachers	the questionnaires 5 Level Likert Scale	Current situation, problems and suggestions TQM System in primary school
2. System Design and Verification	4. Study of the best practices in 3 primary schools (small, medium, and large)	School member administrators , academic staff, and teachers	Observations, interviews, the field notes record and audit trail,	Total Quality Management System in Primary schools
	5. Draft model of TQM. System 6. System Verification	9 experts for examination and verification	The system draft evaluation form	The manual for usage
3. System Implementation and Evaluation.	7. Implementation in 2 primary schools	Participant using system were 25 administrators, teachers and school members	The satisfaction level form, Documentary analysis,	Level of satisfaction
	8. Study of the effects of TQM System		O-NET examination report, and analyzing data by comparing to previous years	Score of academic achieve

after the system has been tried out, with these detailed steps:

Step 1: Application of the developed system in 2 primary schools under Office of the Basic Education؛ one is small with fewer than 120 students and the other is medium-sized with 120 – 300 students.

Step 2: Studying of the effects of the total quality management system piloted with the primary schools under Office of the Basic Education Commission.

Research instruments

Two types of research instruments were used: the instrument for work development and the instruments for data collection. They included the following: the semi-structured interview; the questionnaires; the field note record; the system draft evaluation form and the satisfaction level form, documentary analysis, and O-NET examination report.

RESULTS

Data consisted of semi-structured interviews. The results found that 5 experts mostly were in agreement about the components of a total quality management system in primary schools under the Office of Basic Education Commission found that inputs consist of 1) organizational leadership and 2) organizational resources, processes consist of 1) strategic planning 2) student and stake-holders focus 3) knowledge management analysis and measurement 4) staff focus and 5) process management.

Outputs consist of 1) learning achievement 2) core competency and 3) desired behaviors according to National basic curriculum and 4) student reading ability critical thinking and writing ability, as shown in Table 3.

Table 3. The results of agreement about the components of a total quality management system by 5 experts.

| Data	Components of a total quality management system	Agreement	Percentage
Semi-structured interview	1. Input Factor	5	100%
	1.1 Organization leadership	5	100%
	1.2 Organization resources	5	100%
	2. Process Factor	5	100%
	2.1 Strategic planning	5	100%
Semi-structured interview	2.2 Focus on students and stakeholders	5	100%
	2.3 Knowledge management measurement , analysis,	5	100%
	2.4 Staff focus	5	100%
	2.5 Management process	5	100%
	3. Output Factor	5	100%
	3.1 Academic achievement	5	100%
Semi-structured interview	3.2 Key competencies	5	100%
	3.3 Desirable characteristics of basic education in 2008	5	100%
	3.4 The ability to read, think critically and writing of students	5	100%

Table 4. The results of current situations and problems to improve the total quality management system in primary schools.

Components of a total quality management system	Current situations			Problems		
	$\overline{X}$	S.D	Level	$\overline{X}$	S.D	Level
1. Input Factor	3.92	0.66	More	2.15	0.68	Less
1.1 Organization leadership	3.98	0.65	More	2.21	0.67	Less
1.2 Organization resources	3.86	0.68	More	2.09	0.69	Less
2. Process Factor	3.90	0.66	More	2.13	0.72	Less
2.1 Strategic planning subsystems	3.69	0.67	More	2.13	0.77	Less
2.2 Focus on students and stakeholders subsystems	3.63	0.76	More	2.08	0.70	Less
2.3 Knowledge management measurement , analysis, subsystems	4.08	0.70	More	2.17	0.75	Less
2.4 Staff focus subsystems	3.86	0.63	More	2.16	0.70	Less
2.5 Management process subsystems	4.26	0.57	More	2.13	0.69	Less
3. Output Factor	4.46	0.55	More	2.30	0.74	Less
3.1 Academic achievement	4.28	0.58	More	2.52	0.72	Moderate
3.2 Key competencies	4.49	0.55	More	2.23	0.61	Less
3.3 Desirable characteristics of basic education in 2008	4.42	0.61	More	2.13	0.78	Less
3.4 The ability of students to read, think critically and write	4.68	0.46	Most	2.35	0.85	Less
Overall	4.07	0.62	More	2.20	0.71	Less

The current conditions of Total Quality Management System in Primary Schools under the Office of Basic Education Commission and each dimension were in level of "more" ($\overline{X}$ = 4.07) and total problems and each dimension were in level of "less". ($\overline{X}$ =2.20) as shown in Table 4.

According to this study, a total quality management system for primary schools focusing on the customer
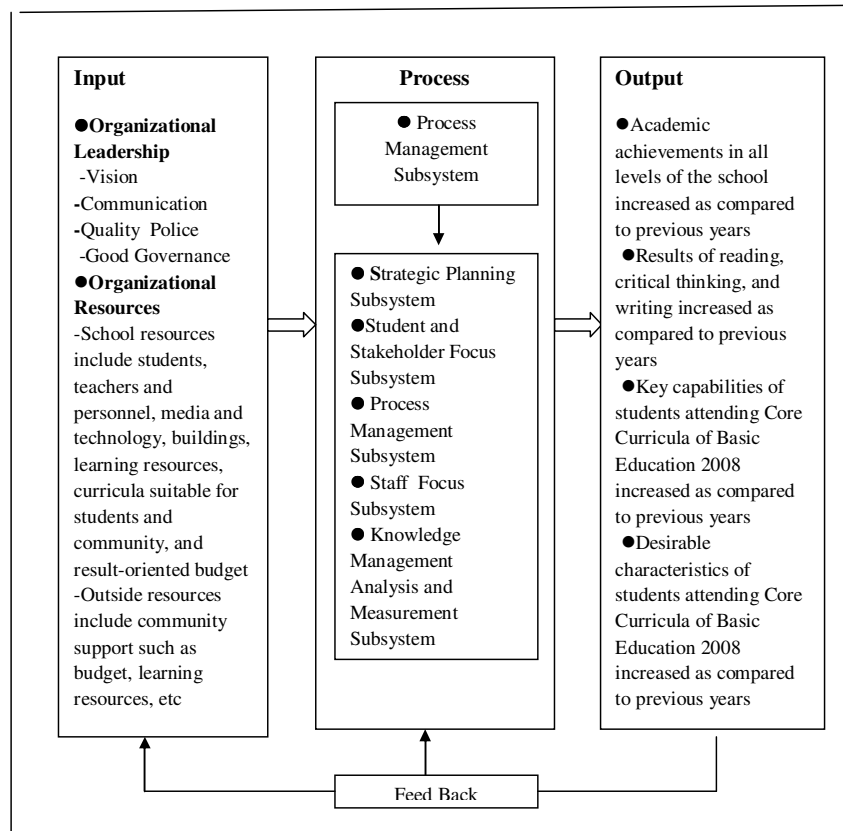
Figure 2. Total Quality Management System in primary schools under Office of the Basic Education Commission.

orientation, total involvement, and continuous improvement applying TQM principles and synthesizing them by case study of the best practices in 3 primary schools (small, medium, and large). The results show that inputs consist of,

1) organizational leadership and 2) organizational resources, processes consist of 5 subsystems. There were Strategic planning subsystem, Student and stakeholder focus subsystem, Knowledge Management Analysis and Measurement subsystem, Staff Focus subsystem, and Process Management subsystem, that change the materials, and need inputs, organizational leadership and organizational resources leading to outputs such as learning achievement, core competency and desired characteristics based on National Curriculum, student reading ability and critical thinking and writing

(Figure 2).

The results of using developed system showed that in the small size primary school and medium size primary school, students presented their learning achievement, core competency and desired characteristics based on National Curriculum, student reading ability and critical thinking and writing increasingly and administrators, teachers and school members satisfaction in using totally and each dimension were in level of "more".

The results of the total quality management system implemented in primary schools showed that in small and medium sized primary schools, students had higher academic achievement, key competencies, desirable characteristics in line with the Basic Education Curricula of 2008, with better ability to read, think critically, and write accurately, and the satisfaction in bringing the system for use in small and medium-sized primary

schools as a whole and in each aspect was at a "more" level. Operation of the developed total quality management system in primary schools, small and medium, under Office of the Basic Education showed the following results:

Students' performance:

1. The average academic achievement in eight subject groups in the class and school was 80% or at a "high" level, which was increased, as compared to previous years.
2. Evaluation results of the key competencies based on the curriculum in five areas, that is, the ability to communicate, to think, to solve problems, to apply life skills, to use technology for learning in each group met the criteria set by the school or educational zone was at a "high" level or 80%, increased as compared to previous years.
3. Assessment of reading, thinking critically, and writing by students showed significant increase in performance at a "high" level or 80% up, as compared to previous years.
4. Evaluation results of the desirable characteristics: students demonstrated eight major desirable charac-teristics according to the Core Curriculum for Basic Education Act 2008: 1) Patriotism, Religiousness, and Loyalty to the Monarch, 2) Honesty and Integrity, 3) Discipline, 4) Inquisitiveness and Curiosity, 5) Self-sufficiency, 6) Hard-working Attitude, 7) Maintenance of Thai Identity, and 8) Public Mind. All of these were at 80% or higher, which was an increase as compared to previous years.

DISCUSSION

According to the research findings, there are interesting issues to be discussed as follows (Table 3).

According to Table 4, the finding of conditions of the total quality management system in primary schools under the office of Basic Education Commission indicated that the overall performance was found at a "more" level, ($\overline{X}$ = 4.07) and problems in implementing the total quality management system in primary schools under the Office of Basic Education Commission was found in the overall at a "less" level ($\overline{X}$ = 2.20). These results may have resulted from Thailand's policy of educational reform, National Education Act 1999 and its Amendment (No. 2) 2002 aimed to raise the standards and quality of education for all, with Section 47 specifying the need for quality assurance with internal quality assurance and external quality assurance systems, where the system for

internal quality assurance focuses on the decentralization of power to the learning institutions providing basic education under Section 48 (2). These allow the learning institutions and schools with jurisdiction over education to have a system of quality assurance in education to reassure stakeholders that all students receive a quality education from schools in order to develop competent and desirable educational standards prescribed in the basic education curricula. So, school is an important agency that must adopt the policy of education reform in the second decade (2009 to 2018) and put into practice to achieve the goals set forth in the strategic education reform in the second decade. It is necessary to improve the system to achieve educational quality by building a quality culture in schools, thus resulting in a change of management system. In addition to meeting the policy of educational reform, all learning institutions and schools must respond to Thailand's preparation to join ASEAN Community. As a result, all learning institutions and schools need to improve the total quality management process in schools more effectively.

The study showed that school systems in primary schools under the office of Basic Education Commission there were eight elements of the system: Two factors under Input 1) Organizational Leadership, 2) Organi-zational resources; five aspects of Process: 1) Strategic Planning Subsystem, 2) Students and Stakeholders Subsystem, 3) Knowledge Management, Analysis and Measurement, 4) Staff Focus Subsystem, 5) Process Subsystem; and one key Output, namely academic achievement, which includes key competencies desirable characteristics based on the Basic Education Curricula of 2008, and demonstrable abilities to read, think critically and write. Results from the study indicated that elements of the system behaved that way because the school is an open social system heavily influenced by the environment. The system relies on the relationship with people, organizations or other entities in such an exchange of mutual benefits and benefits that occur are well balanced. An open system is a living system, with holistic components of the system displaying the quality or holistic features that cannot be minimized or reduced to parts or components. Each system is nested in a hierarchy from a large system into subsystems.

The Input Factor: 1) Organizational Leadership: Administrators must have high academic leadership and vision in leading the organization, with a clear policy of focusing on improving the performance of the learners using participatory processes to keep pace with future changes, using ICT systems in teaching and admini-stration, as well as the principles of good governance in the management, using communication skills well with

those who are concerned in planning, monitoring, controlling, and are driven to achieve the policy goals,

Organizational Resources: The resources of the school for proper administration are an important input in the working process of the system. Schools are required to supply a sufficient amount of resources to enable a subsystem of the system to work effectively. The resources can be divided into two types as follows:

Internal Resources: These are the resources within the school covering: 1) school personnel including a sufficient number of teachers who teach and perform their duties properly, and staff who serve as teaching support team, such as a secretarial teacher, 2) teaching materials including technology media, quality materials, advanced equipment, buildings, the environment within the school conducive to learning, such as learning resources laboratories, libraries that can be used in teaching activities and effective administration, 3) management including organizational management, clear structure of management covering 4 major tasks, namely academic workload, general affairs, personnel, and budget planning, and 4) budget, including the budget adequate for the plans and objectives.

External Resources: These are the resources outside school that affect working processes in the school, including various subsystems to get the cooperation and support of the community in areas such as budget and resources for education, economic, political and technological factors of the community, such as occupations and income, local political groups, technological applications for careers. These constitute the substantive content of the total quality management system in the primary schools under Office of the Basic Education Plan, as shown in Figure 2.

The details explain the functions of each subsystem.

1) Strategic Planning Subsystems: There is a workflow process in the organization through leadership where executives have to define the vision, mission, and goals of improving the performance of the learners. There are also a strategic planning process and an annual operating plan, with the involvement of stakeholders, including teachers, students, school board, parents, community monitoring, reviewing, and adjusting strategies of the school, including communications of the policy and ideas to teachers and concerned parties. Factors that need to run on the system are leadership and organizational resources toward productivity of subsystems. Strategic planning is a strategic plan and school action plans focusing on the performance of learners, the involvement

of stakeholders, and a better understanding of the operational order to reach the desired target, that is, student achievement. The feedback of the system is the result of the effects on the achievements of students in order to analyze the functional subsystems for the next strategic planning.

2) Student and Stakeholder Focus Subsystem: This consists of the work flow process, information management system that involves all stakeholders, communication process that listens to the opinions of students, parents, and community, public relations process that creates knowledge and understanding of the work of the school, process of continuously improving the quality of processes of teaching and learning. All these subsystems will depend on the organizational leadership and resources contributing to the desired output of the subsystem focusing on students and stakeholders: required data on students and stakeholders applied to improve the quality of work, information on the needs, satisfaction and dissatisfaction in order to improve the teaching process, knowledge and understanding of teachers and stakeholders, policy and direction of the school, the yield of the system including improved student performance, such as standardized achievement tests and key competencies and desirable characteristics based on the criteria stated in the Basic Education Curricula of 2008, and the measurable ability to read, think critically, and write, with feedback of the system relating to the quality of teaching and services rendered to students and stakeholders in order to improve the subsystems focusing on students and stakeholders.

3) Knowledge Management, Analysis and Measurement Subsystem: This comprises a workflow process, knowledge management and information technology management, grading operations of the organization as compared to the target set, analysis, review and improvement of the operations to further improve the quality of instructional process on a continuous basis. This will depend on several factors, such as organizational leadership and resources to reach the desired output of the subsystem for knowledge management, analysis and performance evaluation activities that include knowledge storage systems that contribute to improved performance, gathering the knowledge of how to use best practices in their work, the past performance when compared to the goals set to improve work processes, feedback or information that reflects back to improving student performance, achievements, desirable characteristics, and increased measures of key competencies of learners, including abilities to read, to think, critically, and to write, with feedback of the system which includes results of the development of knowledge management in the school and student performance as

compared to the targets set in the school strategies, and the results of performance measurement to improve the achievements of students in the past academic year and improve the work processes, knowledge management, analysis and performance of the organization.

4) Staff Focus Subsystem: This consists of a workflow process, planning, human resources, teamwork, performance evaluations and subsequent consequences for students, and creation of motivation and commitment to the organization among staff in the school. These will lead to desired outputs of the subsystem that focuses on staff, such as teacher development based on school strategies where teachers are developed to their full potential to meet the needs and fit the system of the school as it responds to school strategies, teachers' teamwork and team development, results of performance measurement, information technology for the development of teachers, teachers' satisfaction and commitment in organizations, improved working environment leading to the continuous development and progress of students, depending on the operational factors of organizational leadership and resources, and feedback of the system, including the quality of instruction and the commitment of personnel to improve the staff focus subsystem.

5) Process Management Subsystem: This includes a workflow process, system analysis, and a school system design which covers all four missions, namely teaching, student care, student activities, and support system-information technology. Process Management also includes evaluation, ongoing supervision, monitoring, reporting, communication and publicizing the workload to the relevant parties. This should lead to the desired output of the subsystem, namely, workload and job descriptions which are, appropriate for the management of primary schools focusing on the main systems of teaching, student care, student activities, and personnel management. Staff should be prepared with the knowledge and understanding of the burden of responsibility, operations manual, performance calendar, reduction of duplicated effort; teachers should understand and work towards the goal of student achievement.

Conclusion

The results of this study indicated that; the school administrator must have high academic leadership and the ability to develop quality in school, be able to manage environment and resources, both within and outside the school, to meet the quality of the students, be able to design strategic plans and annual operating plan, adhering to the principle of stakeholder involvement, with

the important goal of improving the achievements of students, process management to improve the quality continuously, development of schools as a learning organization, personnel teamwork, key processes of school administration covering four missions: academic, personnel, general administration, budget planning. These are the main functions of a school administrator whereas the teaching-learning process is the main function of the teachers.

School Administration System: It is the main duty of the executives to manage the organizational structure of the school administration consisting of Academic Affairs, Personnel, General Affairs, Budget Planning, using the PDCA cycle in the management of the subsystems at every step.

Monitoring and Reviewing of Performance Quality. This is to show the feedback at every stage, with effective internal quality assurance system. Internal Supervision: This is to monitor and follow up on the implementation of the project or plan to ensure the desired results of the students.

Participatory Work Process: This is to create networks of involvement by community agencies, both public and private, providing opportunities to listen to the opinions of students, parents, and community, based on Home-Temple-School trinity of cooperation to receive information from the lower levels to the upper levels.

Teaching: is the main function and importance of teachers in the school system. Teachers need to be prepared to teach, plan the lesson for knowledge management, consistent with the learning differences that exist between individuals. Therefore, the student supervising system should be a priority in the school system in order to help students thoroughly focus on the lessons.

Support Process: This includes the information technology system. The school should have information on school environment, inputs as the resources for school administration, both internal and external, that affect all the subsystems in the school useful in the strategic planning of the school. If the school has these conducive and beneficial factors, it will greatly benefit the work of the school system.

RECOMMENDATIONS

Applications

Applications should be done in the first semester of an academic year following the strategic planning and action

plan of the school. Leadership is needed focusing on the total quality management, good role model in creating corporate success value for achievements and results, vision, and actual use of existing database. The Office of the Educational Zone can apply the results of this study and use the developed system to train the staffs in creating an awareness of instructional quality and quality management leading to global standards.

Recommendations for future research

Subsystems should be studied in details as to what, why and how. Total Quality Management at other institutions should be studied using action research process to obtain an appropriate model for the school or learning institution. In-depth study of methods of collecting qualitative data for best practices should be conducted to understand how things work for best practices in terms of excellence in quality.

Conflict of Interests

The authors have not declared any conflict of interests.

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