Total quality management practices of NCR SUCs and their relationship to school performance inputs for continual improvement of programs

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ARTICLE INFORMATION

ABSTRACT

This study aimed to determine the total quality management (TQM) practices of seven State Universities and Colleges at the National Capital Region, Philippines and their relationship to their school performance during school year 2012-2013, as assessed by the administrators, faculty and non-teaching personnel in terms of six dimensions anchored on Deming's principles of TQM. These are quality planning, customer satisfaction, employee involvement, continual process improvement, performance measures, and supplier relationship.

The descriptive method of research was used with the validated questionnaire as the data gathering instrument. The respondents comprised 156 administrators, 290 faculty member and 208 non-teaching personnel who had plantilla items. Their responses were treated using the mean, Pearson r and one-way analysis of variance.

The study revealed that the TQM practices such as quality planning, customer satisfaction, employee involvement, continual process improvement, performance measures and supplier relationship are being observed at a high extent in the NCR- SUCs, as assessed by the administrators, faculty and non-teaching Personnel.

Moreover, the findings revealed that there is a significant difference in the assessment of the three groups of respondents, but there is no significant relationship between the TQM practices and school performance except for continual process improvement as assessed by administrator respondents. To the faculty respondents, there is a significant relationship between the TQM practices and school performance. In sharp contrast, the non-teaching personnel assessed that the TQM practices of their Universities/Colleges are not related to employee involvement and supplier relationship.

Based on the findings, the following conclusions were drawn: 1) The SUCs have very good TQM practices, 2) The administrators, faculty and non-teaching personnel have varied views on the extent of their TQM practices; 3) The TQM practices of the SUCs affect their school performance.

Keywords
TQM Practices, SUC-NCR, School Performance, Quality Education

Introduction

Quality education is the focus not only in basic education but also in higher learning institutions, as stipulated under RA 7722 also known as Higher Education Act of 1994. In the state's declaration of policy, it stresses that, "The State shall protect, foster and promote the right of all citizens to affordable quality education at all levels and shall take appropriate steps to ensure that education shall be accessible to all."

As Lazo (2006:350) remarked, the State should envision an educational framework for all citizens conducive in attaining a quality educational service. He further elaborated that the nation should

guarantee the right of all citizens to quality education and make this service available to all. He then commented that free quality education is provided to all citizens of the Republic in order to have a quality foundation of education as the learner faces the reality of life.

Lucas (2009:272) said, on the other hand, "a customer's perception of quality service is often one of the prime reasons for his or her return." This can also be applied in education because the quality graduates by an institution serves as one of the indicators for parents in entrusting their children to a particular institution. In a similar vein, Vega, et.al (2009:144) held that quality education is the main goal of every educational learning institution and an ultimate goal of every nation worldwide so as to address the demand for global economic competitiveness. They further averred that "Globalization brings about opportunities for education particularly in the way that new technologies can be put to work to improve both the quality and quantity of education worldwide."

Reeves (2009: 43-44) viewed that competition is a part of the educational landscape which is not only among students but also among educational institutions, especially on how they cater the need for a quality output among their students. He went on to say that this is necessary to improve the competitive success among leaders as well as the system of management in all levels of learning institutions.

To cope with the demand for competition in education, Reeves also stressed, "When the standards are sufficiently high, leaders who appear to be better than their competitors on the latest school ranking will continue to challenge for continuous improvement." He explained that continuous improvement is a TQM philosophy, a management system which emanated from Japan after World War II, when the Japanese government hired an statistician expert from United States named Edward Deming.

Ramasamy (2009: 1.3) clarifies Total Quality Management as "customer-oriented management philosophy and strategy." He claimed that it is centered on quality so as to result in customers delight. To him the word *total* implies that all members of the organization make consistent efforts to achieve the objectives of customer delight through systematic efforts for improvement of the organization.

Rue and Byars (2009:436) remarked that quality is determined in relation to the specifications or standards set in the design stage-the degree or grade of excellence specified.

Total Quality Management integrates and performs all quality-related activities and makes decisions that influence quality, irrespective of position within the organization. TQM, therefore, as commented by Dam and Marcus (2007:322) should be adopted by all levels of the organization, from top management down to the work force. In education, customers can also be applied to students as the main customers, suppliers, as well as co-workers.

Lucas (2009: 22-23) holds that there are two types of customers, the internal and external customers. Internal customers are co-workers, employees of other departments or branches and other people who work in the organization while external customers are those people outside the organization. He said that all aspects of the service organization revolve around the customer. Without the customers, there is no reason for any organization to exist. He reiterated that since all employees have customers, there must be a continuing consciousness of the need to provide exceptional enthusiastic customer service.

According to Williams (2009:30), "Good management matters because it will lead to satisfied employees who, in turn, provide better service to customers". Thus practicing Total Quality Management will enhance the quality of education among higher learning institutions especially subsidized by the government.

Ali and Shastri (2010:9) elaborate that the system of higher education is found efficacious in making available to the society a dedicated, committed, devoted and

professionally sound team of human resources to decide the future of any nation. This is possible only when the principles of quality management are inculcated in the system of higher education. Total Quality Management (TQM) is inevitably a common factor that shapes the strategies of higher educational institutions in their attempt to satisfy various stakeholders as a whole.

Ali and Shastri (2010:12) stress that in higher education, the students are considered as end customers. Harvard University defines its customer as those who are provided information or service; hence, students who use the school services and employees who are consumer of students are regarded as customers.

TQM practices among business sector have been proven many times to be effective, yet in education, several management strategies have been implemented in order to produce a world class competitive quality graduates. Most commonly, private higher institutions aim to be accredited by several accrediting agencies do not only give quality education to their clientele but also a way of marketing their institution. Also, State Universities and Colleges express eagerness to make their programs to be accredited.

For these reasons the researcher became interested in conducting this study on the existing Total Quality Management practices that SUCs in the National Capital Region are implementing.

Statement of the Problem

Mainly, this study aimed to determine the total quality management (TQM) practices of SUCs at the National Capital Region and their relationship to their school performance during the school year 2011 to 2012.

More specifically, it sought answers to the following questions:

1. What is the extent of the Total Quality Management practices of NCR SUCs, as assessed by administrators, faculty members and non-teaching personnel in terms of the following dimensions? (a)Quality Planning, (b)Customer satisfaction, (c)Employee involvement, (d)Continues process improvement, (e)Performance measures and (f)Supplier relationship.

2. Are there significant differences on the assessment of the three groups of respondents on SUCs TQM practices as to: (a)Quality Planning, (b)Customer satisfaction, (c)Employee involvement, (d)Continues process improvement, (e)Performance measures and (f)Supplier relationship?

3. What is the level of performance of the SUCs as regards Licensure Examination for school year 2009-2011?

4. Is there any significant relationship between the SUCs TQM practices and their performance?

5. What continual improvement program can be proposed based on the result of the study?

Significance of the Study

This study is significant because of the benefits that it could offer to various groups, as follows:

To the students, to ensure quality instruction and facilities. To the teachers, it could provide some of their strengths and weaknesses. The school administrators will be able to identify those areas in their institutions that need to be further improved. To parents, many become aware of the areas where they could contribute for the improvement of their children's learning environment. To the country, the effect of a better quality education could redound to the improvement of its economy. To the future researchers, this study could assist them conduct parallel studies.

Related Literature

Rue and Byars (2009:437) shared their view that Total Quality Management (TQM) is a management philosophy that

emphasizes "managing the entire organization so that it excels in all dimensions of product and services that are important to the customer." In essence, TQM, as they further remarked, is an organization-wide emphasis of quality as defined by the customer. They also said that under TQM, everyone, from the Chief Executive Officer down to the lowest-level employee, must be involved. They summarized TQM with the following actions: 1) Find out what customers want through surveys, focus groups, interviews, or some other techniques that integrate the customers' voice in the decision-making process; 2) Design a product or service that will meet or exceed what the customers want; 3) Design a production process that facilitates doing the job right the first time, determine where mistakes are likely to occur, and try to prevent them. When mistakes do occur, find out why, so that they are less likely to occur again. Strive to mistake-proof the process; 4) Keep track of results and use those results to guide improvement in the system. Never stop trying to improve; and, 5) Extend these concepts to suppliers and to distributors

Similarly, *Witcher* and *Chau* (2010:134) remarked that Quality Management is not an absolute product or service attribute. It is possible to have poor quality in a luxury car, as it is to have high quality in an economy car. They claimed that if a customer's expectation is not being met, then quality is poor. The word "total" means that the philosophy must apply at every business level and to every process. Quality is only as good as the weakest link in the quality chain. Every part of the production and delivery chain has to be good enough to give the next work process exactly what it wants for it to be able to produce what is exactly needed by the following process, and so on.

On the other hand, *Williams* (2009:551) posited that TQM is an integrated organization-wide strategy for improving product and service quality. Instead of being viewed as a specific tool or technique, TQM is an over-all approach to management characterized by three principles, namely: customer focus and satisfaction, continuous improvement, and teamwork. He defined customer focus in an entire organization as from top to bottom, results on customers

satisfaction which occurs when the company's products or services meet or exceed their expectation. Continuous improvement is an ongoing commitment to increase product and service quality by constantly assessing and upgrading the processes and procedures used to create those product services. Besides higher customer satisfaction, continuous improvement is usually associated with a reduction in variation a deviation in the form, condition, or appearance of a product from the quality standard for that product.

From another view, *Kinicki* and *Kreitner* (2009:12) identified four common TQM principles: 1) Do it right the first time to eliminate costly rework; 2) Listen to and learn from customers and employees; 3) Make continuous improvement and everyday matter; and, 4) Build teamwork, trust, and mutual respect.

They also commented that both producers and costumers of high-quality goods and services are matters of personal importance.

TQM principles also apply to human relations, according to Lamberton and Minor (2007:222). These ideas for quality organizations include the following: a) Do not accept poor quality workmanship in products and services; b) Measure efficiency and quality in all phases of production, not just in post production; c) Use supplier with high-quality goods, rather than shopping around for lower price; d) Train and retrain employees to improve quality, rather than relying on slogans; e) Encourage employees to feel that they are part of the organization and allow them to report poor quality conditions; and f) Train managers to find, measure, and eliminate sources of mediocre quality.

They also elaborated that quality organizations create loyalty and commitment among employees. This also increases their self-confidence and self-esteem. When comparing a quality organization management style with the more traditional style of management, that is, constant surveillance of employees and analysis of product quality only after production, it is easy to see why management and employees

alike prefer a well-managed quality organization environment.

For their part, *Van Dam and Marcus* (2007: 322) shared the view that quality standards include planned and systematic checks necessary to verify that the product comes up to standard. In other words, quality standards underpin quality control.

Ivancevich, *Konopaske* and *Matteson* (2008:25) remarked that for an organization to survive, it must design products, make products, and treat customers in a close-to-perfection way which means that the quality is now an imperative. To illustrate this concept, they cited that the Japanese people had risen from the ashes of World War II to economic giant with products of superior quality, because they centered on the notion of quality as it relates to the customer's perception. Customers compare the actual performance of the product or evaluate the service being provided to their own set of expectations. The product or service either passes or fails. Thus quality has nothing to do with how shiny or good looking something is or with how much costs. Quality is defined as meeting customers' needs and expectation.

To *Lucas* (2009:272), a final strategy for helping to increase customer loyalty relates to the quality of service that the organization provides.

In this regard, *Ramasamy* (2009: 5.4) sees service is important to TQM. It is the result generated by activities at the interface between the organization and the customer and by the organization's internal activities, to meet customer needs. The result generated in the case of manufacturing is a product. However, in the case of service, it may be a product or may not be a product at all.

He also mentioned numerous service providers, such as colleges, schools, internet café, hospitals, restaurants, hotels, banks, government departments, etc.

Berns (2007:250) pointed out that the school as a service organization provider is an agent of socialization, a setting for intellectual and social experiences from which children develop the skills, knowledge, interest, and attitude that characterize them as individuals and that shape their abilities to perform adult rules.

He went on to say that schools influence children through their educational policies, leading to achievement through their formal organization, introducing students to authority and through the social relationship that evolve in the classroom. The primary purpose of education from society's perspective is the transmission of the cultural heritage-the accumulated knowledge, values, beliefs and customs of the society. To transmit culture and maintain it, society must be provided with trained people who can assume specialized roles as well as develop new knowledge and technology. The function of education from the individual's perspective is to acquire the skills and knowledge needed to become self-sufficient and to participate effectively in society.

Vojtek and *Vojtek* (2009:8) characterized a school conducive for learning: it must make the learner feel warm, welcome, and happy. No matter how hard to put ones finger on what it is, but one knows the difference the moment he steps inside.

Related Studies

To gain better insights into the practices of Total Quality Management, a number of studies were perused but the more relevant ones are hereunder presented.

One of the reviewed related studies is that of *De La Cruz* (2002) on the "Development and Validation of a Proposed Assessment Instrument on the Total Quality Environmental Management (TQEM) for Higher Educational Institutions". His respondents were administrators and faculty members of selected colleges and universities in Metro Manila as respondents. He utilized a descriptive method of research with a survey questionnaire. In the treatment of data, he used the statistical tools of percentage, mean, and ranking. In one of the findings of the study, the components of the proposed assessment instrument, namely: institutional concept of environment water conservation, energy conservation with its sub-components,

information dissemination, Lighting, Air-conditioning and Ventilation, Computers, and internal communication and dissemination and protection; and air/atmosphere management are valid indicator of TQEM for HEI's. He recommended that the proposed assessment instrument on TQEM be used as inputs by CHED or different accrediting agencies in their evaluation of school applying for permit, or recognition through accreditation of various courses/programs of HEI's without prejudice to environment.

This study is relevant to the present study because it also attempted to focus on TQM. However, the reviewed study focused only on environmental management whereas the present one dealt with the ten areas of accreditation of SUCs. The former was a mere development and validation of a proposed assessment instrument while the present research attempted to determine the TQM practices of SUCs, as assessed by administrators faculty members and non-teaching personnel.

Gonzales (2001) conducted a study on "The Management styles of the Principals in Selected Secondary Schools in Region III: Basis for a Proposed Total Quality Educational Management Model", using respondent's representative private and public secondary school principals and teachers in certain divisions in Region III. Utilizing a descriptive type of research with survey questionnaire as her instrument, she treated the data focusing on percentage, ranking and weighted mean. Based on the findings of the study, the secondary school principals exhibited the consultative democratic and participative-democratic management style in carrying out their duties and responsibilities as school managers. The school operates with in the spirit of a big family where the members participate in the planning and executing of family matters, making teachers become more productive and earnest in their work when they are directly made a part of the activities undertaken by the school. The more the principals involve the teachers in school activities, the higher the effectiveness of management. The finding of Gonzales simply signifies that the involvement of teachers in planning and implementing programs in their respective schools manifests that they

practice TQM. Her study relates to the present study, as it also dealt with TQM. It differs, however, from the present study, because it attempted to identify the TQM practices of selected secondary principals, while the present research on selected SUCs at NCR.

Another related study was that of Reves (2005) on the "Principals' Empowerment and Performance of Public Elementary Schools in the Division of Rizal: Inputs for Total Quality Management in Education". The study employed the descriptive normative design in determining the extent of principals' empowerment and performance of public elementary schools. The questionnaire and documentary analysis were utilized to gather pertinent data. The stepwise multiple regression analysis helped determine the influence of the independent and dependent variables. The reviewed study recommended that: 1) There is a need to upgrade the quality of teaching by employing appropriate teaching strategies in accordance to the needs, abilities and capabilities of the pupils and the sense of responsibility and commitment among teachers and school heads should be enhanced; 2) The principals should be made to exercise fully their administrative functions; 3) Efforts have to be exerted to improve the teaching competencies and achievement test results by way of conducting intensive training; 4) Close monitoring and supervision should be undertaken to properly identify the real factors that brought about the declining performance of teachers and pupils.

The study of Reves is also related to the present study because it tried to find out the areas of improvement to achieve the Total Quality Management practices of public elementary schools while the latter sought to find out the TQM practices of SUC's.

Fainsan (2002) in her study on the "Total Quality Service: Its Implications to the Management of the Electrical Engineering Program of E.A.R.I.S.T.". The study used the descriptive research method with the questionnaire as the data gathering instrument. Her respondents consisted of the 48 academic staff of the whole college and fourth and fifth year students of the Electrical Engineering program, with 21 academic staff

and 43 students taken as sample respondents. The statistical techniques used were weighted mean and Z-test.

The study aimed to ascertain the extent to which Total Quality Service (TQS) can be applied to improve the services in the area of faculty and to find out the status of the program vis-a-vis employability rate and board examination performance of the Electrical Engineering graduates of the College of Engineering of Eulogio "Amang" Rodriguez Institute of Science and Technology.

The major findings and conclusion of the study show that Total Quality Services (TQS) was implemented to a great extent in the area of faculty particularly in the EE program. Recommendations were also drawn by the respondents, as follows: a) Hold regular professional faculty development meeting; b) Be professional and objective in rating and evaluating the faculty; c) Proper dissemination of information and instruction pertaining to works; d) Enough funds must be provided to allow the faculty to attend seminars, training and conferences; e) De-load the faculty members with designation.; f) Strictly follow the admission policies pertaining to number of students to compose a class, which is maximum of 40; g) Encourage the faculty members to pursue graduate studies in other institutions; h) Increase budget allocations for professional and career development; i) File complaints to proper forum for proper investigation; and j) School should institutionalize faculty development that focuses on the development of the communication skills of the faculty.

Faisan's study is relevant to the present study because it also focused on Total Quality Management. The two studies are related to each other because they both dealt with TQM practices. They differ though from each other in terms of the scope and delimitations of the study since that of Faisan was done only in the Engineering department of EARIST, while the present focused on the different SUCs in the National Capital Region where EARIST is also included.

Timbol's (2002) research on the "Social Security System (SSS) Management Practices vis-à-vis Total Quality Management (TQM)"is another relevant study. It utilized the descriptive method of research with the questionnaire as the main instrument in gathering the data. The questionnaires used and distributed to the employees were developed based on the concept of Tomas Q. Andres and James H. Saylor. By contrast, the customer survey form was derived from the survey forms of the Landbank of the Philippines, RCBC Savings Bank, Mc Donalds and Kentucky Fried Chicken. Other pertinent information was also gathered through the researcher's interviews and experiences.

The study found out that the SSS employees have yet to improve their customer services through enhanced management practices to realize their vision.

She recommended that SSS Tarlac apply the Total Quality Management principle/elements in its practice and services. To start with the executives be made aware of the potentials of TQM to positively influence change in the agency and for them to recognize and consider change not as a barrier but an opportunity which could stimulate growth in the organization.

Timbol's study is very much relevant to the present study because it was about TQM practices of customer service oriented office. The review study and the present study differ with the present study in terms of respondents and the nature of the agencies.

Penaso's (2005) study on the "Confluence of Research, Development and Extension Program Characteristics, Organizational Climate and Total Quality Management Practices: Basis for TQM Framework" made use of the triangulation method both quantitative and qualitative techniques. These include normative survey, descriptive correlation analysis, documentary analysis, interview, and focus-group discussion techniques. The participants of the study were Research Development & Extension managers, practitioners (researchers and extensionists), and customers/clients. The statistical tools used were frequency counts, percentages, average weighted means, rank, t-test for independent samples, pearson product-movement

correlation, and stepwise and full-model regression analyses.

The results of the study showed that the managers had a great extent of TQM managerial skills and leadership traits along general intelligence, knowledge and expertise, dominance, self confidence, high-energy, tolerance for stress, integrity and honesty, and maturity. The RD & E programs of SUC's were characterized by clearly stated goals and objectives reflecting the program emphasis and direction, the national and regional development goals as well as the institutional vision and mission. Generated technologies were published and disseminated using various, media and technologies.

The study of *Penaso* and the present study relate to each in that both focused on the TQM practices. They differ only on the locale of the study.

Taganguin (2006), in her study on "Performance of ISO and Non-ISO Certified Higher Educational Institutions, 1996-2004", used the descriptive method of research cum survey questionnaire. The survey questionnaire was distributed to 45 private non-sectarian Higher Educational Institutions in the NCR that offered accountancy and maritime courses in the five year round.

The findings showed that ISO 9000 is neither appropriate nor effective in promoting the quality of higher education as some people believe.

The study of Taganguin is quite relevant to the present research, because it also dealt with the quality performance of higher educational institutions. It differs from the present study as to the type of quality concepts used. The ISO criteria were used in the reviewed study while the TQM were used in the present study.

Inarda (2006) conducted a study on the "Implementation on Total Quality Management at the University of Rizal System". The descriptive type of research was used with the questionnaire as main data gathering instrument. The study had the following salient recommendations: a) the faculty be continuously encouraged to finish

their Master's degree and Doctorate and to attend in-service trainings for professional growth and competence; b) The university continue initiating community programs and projects based on the needs, interest and problems of the people; c) Results of this study be disseminated to serve as guide in the strengthening or improving management styles that need to be maintained or modified or changed; and, d) Parallel studies be conducted in other locale to verify if the same findings would be revealed.

The study of Inarda resembles the current research in that it also deals with the Total Quality management. It differs, though, because it treats of implementing TQM in the University while present study assessed the practices and knowledge in TQM of the NCR-SUC respondents.

Arul (2007), in his study on the "Level of Implementation of Strategic Quality Management at Montfort Technical Institute", used the descriptive method of research with the questionnaire as the data gathering instrument used. The administrators, faculty, staff and students composed the respondents. The result showed that the level of implementation of the strategic quality management at Montfort Technical Institute when respondents were grouped as a whole in terms of strategic planning, organizational structure, organizational control and organizational resources was moderate. The researcher recommended that Montfort Technical Institute administration periodically conduct a review and evaluation on the implementation of its strategic quality management to determine if it is still relevant to the present times. Furthermore, it needs to conduct studies applying new trends in this aspect to come up with relevant strategies. Since the students, administrators, staff and teachers do have different perceptions on implementing the strategic quality management in the institute, they should revisit the same with all the constituents attending and participating especially if there are changes to be implemented and for everybody to understand the process.

The study of *Arul* relates to the present study since it also dealt with the quality management implementation. They

differ in terms of venue of the study, however, and the variables considered under the implementation of the strategic quality management.

Another related study was done by Buraga (2008) on the "Effectiveness of the Strategies Implementing the Programs in Curriculum and Instruction, Production, Research, Extension and Administration in Four Colleges of Selected HEI's in the NCR and Rizal". The descriptive methods of research with the survey questionnaires were used.

The research focused on the effectiveness of the different strategies in implementing the programs in curriculum and instruction, production, research, extension and administration in the College of Arts and Sciences, College of Business, College of Education and College of Engineering of Arellano University, José Rizal University, Philippine Christian University, Polytechnic University of the Philippines, Rizal Technological University and University of Rizal System during the academic years 2005-2007. The findings showed that HEI's perceived that all research strategies need to be strengthened. In the area of extension, strategies in implementing the programs need to be reinforced. All selected HEIs perceived that strategies in implementing the programs in administration are so weak that they need to be enhanced. In the area of curriculum and instruction, all higher education institutions strongly agreed that they have periodic evaluation, assessment, review and updating their curricula. All academic institutions also perceived that course requirements and criteria in giving grades which include reporting, behavior, attendance, quizzes, oral participation, group and individual projects, reports and term papers and major examinations such as preliminary, mid-term and final oral and written examinations are effective strategies in implementing the programs in curriculum and instruction.

Buraga's study and the present research also relate to each other, because they both focused on TQM. However, the reviewed study focused on the assessment of the implementation of the programs in curriculum and instruction, production,

research, extension while the present study assessed the TQM practices.

For his part Dionio's (2004) study on "Process-Focused Quality Standards for Distance Education" achieved this purpose, by examining the operation of three sample schools and presenting them in the form of case study. It identified the difficulties that hindered and the processes that promoted quality in teaching and learning via distance education.

Findings reveal that only three major issues confront distance education in the Philippines, namely: financing, quality, and CHED supervision. To different extents, the schools lack adequate financial resources to acquire necessary technology equipment and library facilities, need to re-orient and train faculty, and develop quality instructional materials. Student population per school is low and decreasing, making operations very inefficient. To increase revenues and reduce expenses, the schools are waiving admission requirements, offering money-making programs, and streamlining services at the expense of long range quality development. Teachers need reorientation and further training for distance teaching. There is a dearth of quality instructional materials. Many administrative structures to promote quality stay only on paper. Student support, communication, and representation services appear inadequate. The assessment of student performance is insecure while CHED is just starting to seriously protect the quality of distance education offered by private schools, state colleges and universities, as their charters offer distance education programs on authority of their presidents and/or regents, without permit and supervision by the CHED. The state college in one of the three case studies access to degrees, but its quality is miserably wanting.

Dionio's research and the present study are relevant to each other, as they both aimed to assess the Quality standards of education, while differ on the areas concerned. While Dionio's stressed on the quality standard for distance education, the present study centers on the services of on campus education.

Luis (2007) Conducted study on " Leader's Educational Innovation Practices and School Performance" was done among top performing schools of the National Capital Region as per the result of the National Achievement test for school year 2005-2006. Seven performing secondary school principals, 56 department heads and 56 master teachers in four academic learning areas namely English, Filipino, Mathematics, and Science participated in the study.

A three-part self-administered questionnaire was used to gather data on the instructional and supervisory practices, school and school-related attributes and some personal attributes of the participants. The principals and a sampling of department heads and master teachers were interviewed to find out the extent of innovation and innovativeness of the participating schools and to cross validate or triangulate the data gathered.

Descriptive and inferential statistics were used in the analysis of data. Frequencies and means were computed and Pearson correlation analysis was done to test and determine the significant differences between the school performance, personal and school attributes and the innovative practices in administration.

This study focused on the innovation and innovative practices along technological, behavioral. It examined the organization, and social areas of school administrators, specifically of public secondary schools in the NCR and how these practices correlated with students' academic performance. Equally, it determined whether or not some school and school-related attributes predict and relate with the so called innovativeness.

The findings showed that in terms of the technological innovations, specifically in the area of learning laboratories, the parameters presented are perceived to be innovative by the respondents. The adequacy or the limited facilities like in the science and computer laboratory hinder the effective performance of the program. In the area of instructional innovations, a total of 15 out 40 parameters of instructional innovations are commonly applied by science schools respondents. As to behavioral innovations, participatory management, classroom reorganization, team teaching, cooperative learning, authentic assessment, benchmarking and mentoring are among the commonly applied behavioral innovations. Under the categories of organizational innovations, science schools perceived the school-based management and teacher empowerment effective.

The relationship of *Luis's research* and the present study lies both in varied practices in the school management approaches. Both studies differ on the specific areas, because *Luis's* study assessed the practices of educational innovations, while the present one focuses on the school TQM Practices.

Theoretical Framework of the Study
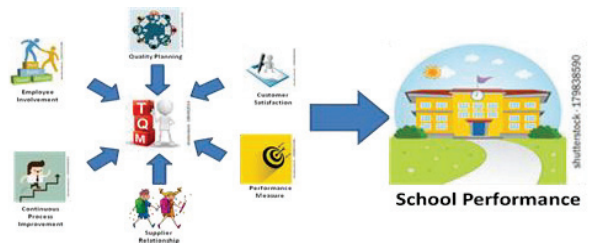
Figure 1. Theoretical Framework of the Study

Figure 1 shows the relationship of TQM to school performance. *Ramasamy* (2009: 3.2) claimed that TQM a management approach of an organization centered on quality, based on the participation of all its members and aimed at a long term success through customer satisfaction and benefits to the member of the organization and the society.

TQM is the application of a number of activities with perfect synergy. Its important elements embrace: Quality planning, Customer Satisfaction. Employees involvement, Continues process improvement Performance Measure and Supplier Relationship.

According to Al-Maqbali http://www.moe.gov.om, TQM describes an

approach to quality assurance which stresses the importance of creating a culture for 'quality', which can be defined as what satisfies the consumer: reliability and excellence; the extent to which predefined objectives have been met through fitness for purpose and conformance to specifications.

On the relationship to school performance, Schargel 1994, as cited by Saleki et.al (2012), TQM is a management policy, which becomes a tool for utilizing and exploiting all human, finance and technology resources in educational institutions. The fundamental goal of TQM system is to involve all educational agents from higher education to the lowest levels of educational activities and goals of educational organizations.

Conceptual Model of the Study

To guide the researcher in conducting the research the conceptual model is shown in Figure 2.

The input includes the respondents, 156 administrators, 290 faculty members, and 208 non-teaching personnel and the questionnaire.

The process consists of the validations of the questionnaire, the administration and retrieval of the questionnaire, the statistical treatment of data, and their analysis and interpretation. The output consists of the TQM practices of SUCs, as assessed by the administrators, faculty and non-teaching personnel, the significant differences of the assessment of the administrators, faculty members and non-teaching personnel on TQM Practices and the correlation between Colleges/Universities TQM practices and their performance, and the proposed continual improvement program.
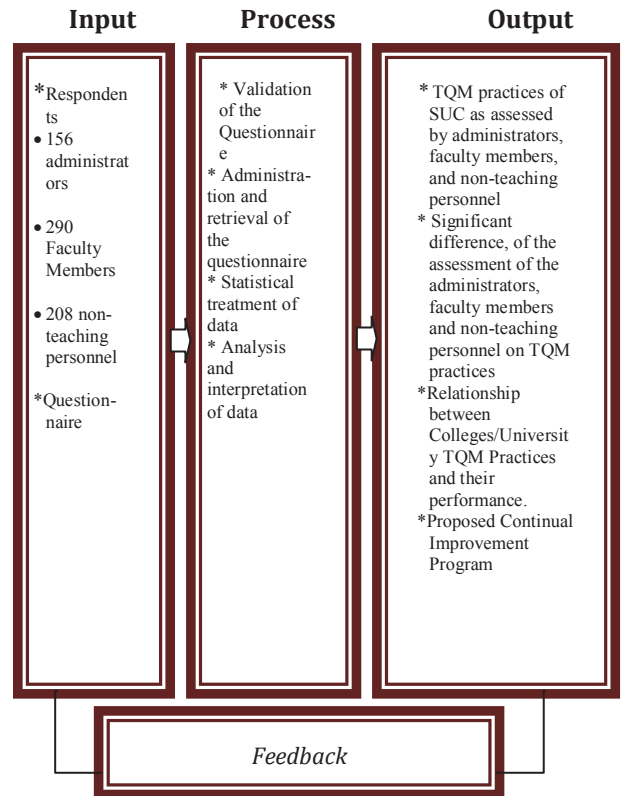
Input	Process	Output
*Respondents • 156 administrators • 290 Faculty Members • 208 non-teaching personnel *Questionnaire	* Validation of the Questionnaire * Administration and retrieval of the questionnaire * Statistical treatment of data * Analysis and interpretation of data	* TQM practices of SUC as assessed by administrators, faculty members, and non-teaching personnel * Significant difference, of the assessment of the administrators, faculty members and non-teaching personnel on TQM practices *Relationship between Colleges/University TQM Practices and their performance. *Proposed Continual Improvement Program

Feedback

Figure 2. Conceptual Model of the Study

Research Hypotheses

The research hypothesizes that:

1. There are no significant differences on the assessments of the administrators, faculty members and non-teaching personnel on NCR SUCs TQM practices.

2. There is no significant relationship between the SUC respondents TQM practices and their school performance.

Method

Utilizing the descriptive method of research, the study described the prevailing conditions using a survey questionnaire to determine the extent of the TQM Practices in SUC at NCR according to the TQM principles. *Fraenkel* and *Wallen* (2008:14) held that descriptive research describes a given state of affairs as fully and carefully as possible. In educational research, the most common

descriptive methodology is the survey, as researchers summarize the characteristics (abilities, preferences, behavior and so on) of individual or group or physical environments such as schools.

Sources of Data

The sources of data in this study were culled from three (3) groups of respondents from seven (7) State Universities and Colleges in the NCR, namely: 207 administrators, 342 faculty members, and 208 Non-teaching personnel using *Slovin'*s formula that determine the number of respondents. The research made use of stratified random sampling.

Data Gathering Instrument

The survey questionnaire served as the main instrument used to gather the date of the study. It was developed by the researcher himself, based on the criteria for TQM and validated by ten experts as follows;

One each from six SUC's in the NCR, three from Marikina Polytechnic College, an alumnus of MPC.

The comments, suggestions and corrections provided by the validators were incorporated in the final copy and contents of the questionnaire of this study.

After the questionnaire had been finalized, it was pilot tested to five (5) administrators, ten (10) faculty members and five (5) non-teaching personnel of the MPC. The pilot testing done, the questionnaires were later retrieved after which the comments, suggestions and corrections were incorporated in the questionnaires.

Data Gathering Procedure

After consulting his adviser on the procedure to be undertaken, the researcher then wrote a letter requesting the approval of seven SUC presidents in the NCR to allow him conduct his study. With their approval, he immediately made arrangement with the persons noted by the presidents on the approved letter to administer the questionnaire without disruptions of classes. The administration and retrieval of questionnaires were done with the help of his fellow educators from the seven SUCs.

Statistical Treatment of Data

The following statistical tools were used to treat the pertinent data.

Mean. This was used to determine the TQM practices of the SUC respondents.

Pearson Productn-Moment Correlation. This was used to find out if significant relationship exists between the SUC respondents and their TQM practices and performance.

Levene's Test. This was applied to test if the group of samples have equal variances since Analysis of Variance (ANOVA) test needs to satisfy the assumption of constant variance among groups.

One-Way ANOVA. This was done to determine the significant differences of the perceptions on TQM practices according to the group of respondents.

Kruskal-Wallis Test. This helped determine the significant differences of the perceptions on TQM practices according to the groups of respondents with unequal variances after using Levene's Test.

Results

TQM Practices. Table 1 shows the overall mean of TQM practices based on the assessment of the administrators, faculty and non-teaching personnel respondents.

From the data in the table one gleans that the TQM practices of SUCs' in the NCR had been assessed by the administrators, faculty, and non-teaching personnel respondents collaborated as **High Extent (HE)** in all indicators.

This finding implies that NCR SUCs were already practicing TQM such as Quality Planning, Customer Satisfaction, Employee Involvement, Continual Process Improvement, Performance Measures and Supplier Relationship. Respondents had these means to fully achieve quality education.

Table 1
Summary of the Administrators, Faculty and Non-teaching Personnel Assessment of the TQM practices of SUC's in the NCR

| TQM Practices | Respondents | | | | | |
| | Administrators | | Faculty | | Non-teaching Personnel | |
	WM	INT	WM	INT	WM	INT
1. Quality Planning	4.07	HE	3.91	HE	4.08	HE
2. On Customer Satisfaction	3.89	HE	3.70	HE	3.91	HE
3. On Employment Involvement	3.90	HE	3.70	HE	3.92	HE
4. On Continual Process Involvement	4.16	HE	3.90	HE	4.18	HE
5. Performance Measures	4.02	HE	3.84	HE	4.07	HE
6. Supplier Relationship	4.15	HE	3.89	HE	4.08	HE

Descriptive Value	Range	Verbal interpretation
5	4.51 – 5.00	Very High Extent (V HE)
4	3.51 – 4.50	High Extent (HE)
3	2.51 – 3.50	Moderate Extent (ME)
2	1.51 – 2.50	Low Extent (LE)
1	1.00 – 1.50	Very Low Extent (VLE)

Test on the Difference of Assessments of the Administrators, Faculty and Non-Teaching Personnel Respondents of the TQM practices of Their Institutions

Shown in Table 2 is the Levene's Test of equality of variances on the TQM practices according to the groups of respondents.

Table 2
Levene's Test of Equality of Variances on TQM Practices according to the Three Groups of Respondents

TQM Practices	Tab.	df1	df2	Actual P-Value
Quality Planning	3.837	2	455	.022
Customer Satisfaction	3.336	2	452	.036
Employment Involvement	3.731	2	447	.025
Continual Process Involvement	1.939	2	447	.145
Performance Measures	6.301	2	447	.002
Supplier Relationships	.833	2	448	.436

The data indicate the computation of the test in computed F value that was compared to the F tabular value to come up with the decision. The degrees of freedom 1 (df1) is the result of the difference between the number of groups minus 1, and df2 - the result of difference from the number of samples minus number of groups. The significance column indicates the actual p-value result from comparison of the computed and tabular F values with reference of the degree freedoms. The result values with less than the 0.05 level of significance indicate variances inequality, while, values with more than 0.05 level indicate equality of variances.

TQM practices such as Quality Planning, Customer Satisfaction, Employment Involvement, and Performance Measures resulted significantly in Levene's Test, therefore, the assumptions of equality of variance is not met, hence ANOVA was not used to find the significant differences according to the three groups of respondents and used Kruskal-Wallis Test instead.

TQM practices such as Continual Process Involvement, and Supplier Relationships showed no significant results on the Levene's Test, therefore, variances equality is met and ANOVA was used in finding the significant differences according to the three groups of respondents.

Table 3 shows the Kruskal-Wallis tests of TQM practices according to the groups of respondents.

Table 3
Kruskal-Wallis Tests of TQM Practices according to the Group of Respondents

TQM Practices	Chi-square	Df	Asymptotic Significance	Ho	VI
Quality Planning	2.432	2	.296	DR	NS
Customer Satisfaction	3.236	2	.198	DR	NS
Employment Involvement	4.501	2	.105	DR	NS
Performance Measures	3.585	2	.167	DR	NS

Legend: DR- Do not Reject NS – Not Significant

The chi-square computed values results for Quality Planning, Customer Satisfaction, Employment Involvement, and Performance Measures are compared to values in the chi-square table with 2 degrees of freedoms. All the TQM practices indicated not statistically significant, as shown by the actual p-values in the asymptotic significance column with all more than the 0.05 level of significance.

Therefore, there is lack of evidence to say that there are significant differences on TQM practices according the three groups of respondents.

Continual Process Improvement. Table 4 reveals the Analysis of Variance test for continual process improvement on the assessments of administrators, faculty and non-teaching personnel respondents.

The data in the table show the ANOVA test for continual process involvement aspect of TQM practices according to the three groups of respondents. With the result of the F computation of 5.048 as the ratio of the mean square between groups over the mean square within groups, the p-value is 0.007 which is statistically significant being lesser than the 0.05 level of significance. Therefore, there is a strong evidence of significant differences on the continual process involvement aspect of TQM practices according to the three groups of respondents.

Table 4
Analysis of Variance Test for Continual Process Improvement Aspect according to the Three Groups of Respondents

Sources of Variation	Sum of Squares	Df	Mean Square	F	P-value	Ho	VI
Between Groups	8.224	2	4.112	5.048	.007		
Within Groups	364.147	447	.815			Reject	Significant
Total	372.371	449					

Supplier Relationship. Table 5 reveals the Analysis of Variance test for supplier relationship on the evaluations of the administrators, faculty and non-teaching personnel respondents.

ANOVA test for supplier relationships aspect of TQM practices according to the three groups of respondents is shown in Table 5. With the F computed value of 4.373 compared to the F tabular value with degrees of freedom of 2 and 448, the actual p-value is 0.013 which signifies significance statistically. Hence, the null hypothesis is rejected in favor of the alternative hypothesis and concludes that there is a significant difference on supplier relationships according to the three groups of respondents.

Table 5
Analysis of Variance Test for Supplier Relationships Aspect according to the three Groups of Respondents

Sources of Variation	Sum of Squares	Df	Mean Square	F	P-value	Ho	VI
Between Groups	5.693	2	2.847	4.373	.013		
Within Groups	291.636	448	.651			Reject	Significant
Total	297.329	450					

Performance Indicator for SUCs in NCR based on the DBM Organizational Performance Indicator

The institutional performance of the SUCs in the NCR is shown in Table 6.

The data in the table present the Licensure examination percentage as performance indicators of SUCs according to the DBM as basis for allocating the annual budget.

It could be gleaned from the table that EARIST and MPC have a low average percentage of passers at 21.67% and 31.33%, respectively in the Licensure Examination while PNU has the highest average percentage at 84.67%. This finding could imply that EARIST and MPC are both Technology school and yet most of the graduates are in non-degree program wherein they can work immediately based on the acquired skills that do not need a license to practice their profession.

Table 6
NCR SUCs Performance Indicator Licensure Examination

Indicator	EARIST	MPC	PNU	PUP	RTU	PhilSCA	TUP
2009	21%	31%	83%	46%	30%	53%	50%
2010	22%	31%	83%	46%	38%	63%	48%
2011	23%	32%	88%	46%	36%	64%	45%
Average Percentage	21.67%	31.33%	84.67%	46%	34.66%	60%	47.67%

Test of relationship between the TQM practices and SUCs Performance

The test of relationship between the assessments of the three groups of respondents on the TQM practices of their institutions in terms of quality planning, customer satisfaction, employee evaluation, continual process improvement, performance measure, and supplier relationship is presented in Table 7 to 10.

The data in the table show the correlation between the assessments of TQM practices of the SUCs and their performance. The six areas of TQM practices have a computed value ranging from .211 to -.192 and a significant value ranging from .021 to .040 in a 0.05 level of significance. This signifies that there is no significant relationship between the identified TQM practices and their school performance in terms of licensure examination results, thus, the null hypothesis is accepted that there is no significant relationship between the identified TQM practices and the school performance.

Table 7
Correlation Analysis between Administrators Assessment on TQM Practices and SUCs Performance

Criteria	R (value)	Sig. (value)	LOS	Ho	VI
Quality Planning	.211	.021	0.05	Do not reject	Not Sig
Customer Satisfaction	.191	.038	0.05	Do not reject	Not Sig
Employee Involvement	.108	.250	0.05	Do not reject	Not Sig
Continual Process Improvement	.263	.004	0.05	Reject	Sig
Performance Measure	.200	.031	0.05	Do not reject	Not Sig
Supplier Relationship	.118	.210	0.05	Do not reject	Not Sig

The table also revealed that the TQM practices on continual process improvement have a computed value of .263 and a significant value of .004 with 0.05 level of significance, thus the null hypotheses that there is no significant relationship on the identified TQM practices and the school performance is rejected. Therefore, there is a significant relationship between continual process improvement and SUC performance.

Table 8 shows the correlation between the assessments of TQM practices of

the Faculty respondents and the SUCs performance.

The table also yields that on the assessment of faculty respondents, six of the TQM practices have a computed value ranging from .335 to .377 and a significant value .000 in a 0.05 level of significance which signifies that there is a significant relationship between the identified TQM practices and the licensure examination, thus the null hypothesis that there is no significant relationship between the six identified TQM practices and the school performance is rejected, therefore, there is a significant relationship between the correlated variables.

Table 8
Correlation Analysis between Faculty Assessment on TQM Practices and SUCs Performance

Criteria	R (value)	Sig. (value)	LOS	Ho	VI
Quality Planning	.377	.000	0.05	Reject	Sig
Customer Satisfaction	.341	.000	0.05	Reject	Sig
Employee Involvement	.335	.000	0.05	Reject	Sig
Continual Process Improvement	.351	.000	0.05	Reject	Sig
Performance Measure	.343	.000	0.05	Reject	Sig
Supplier Relationship	.344	.000	0.05	reject	Sig

Table 8 shows the correlation between the assessment on TQM practices of the non-teaching personnel respondents and the SUCs performance.

It could be gleaned in the table that on the non-teaching personnel assessed, five of the TQM practices have a computed value ranging from -.166 to 270 and a significant value ranging from .001 to .045 in a 0.05 level of significance. This finding signifies that there is a significant relationship on the identified TQM practices and the school performance in the licensure examination, thus the null hypothesis that there is no significant relationship between the identified TQM practices and the school performance was rejected.

Table 9
Correlation Analysis between Non-teaching Personnel Assessment on TQM Practices and SUCs Performance

Criteria	R (value)	Sig. (value)	LOS	Ho	VI
Quality Planning	.219	.007	0.05	Reject	Sig
Customer Satisfaction	.224	.006	0.05	Reject	Sig
Employee Involvement	.152	.068	0.05	Do not reject	Not Sig
Continual Process Improvement	.270	.001	0.05	Reject	Sig
Performance Measure	.206	.012	0.05	Reject	Sig
Supplier Relationship	.161	.050	0.05	Do not reject	Not Sig

Table 9 also shows that the non-teaching personnel respondents assessment on employee involvement and supplier relationship have a computed value of .152 and .161, respectively and a significant value of .068 and .050 in a 0.05 level of significance thus the null hypothesis that there is no significant relationship on two identified TQM practices and licensure examination is accepted.

Discussion

The salient findings of the study are the following:

1. The three groups of respondents, namely the administrators, faculty members, and non-teaching personnel assessed that their institutions practice TQM on the six dimensions namely: Quality Planning, Customer Satisfaction, Employee Involvement, Continual Process Improvement, Performance Measures and Supplier Relationship at a **High Extent (HE)**.

2. There are no significant differences in the assessment of the three groups of respondents on the TQM practices of their institutions on the dimensions of Quality planning, Customer Satisfaction, Employee Involvement and Performance Measures. However, there is a significant difference among the assessments of the

three groups of respondents on the TQM practices of the SUCs in terms of Continual Process improvement and Supplier Relationship.

3. Among the seven SUCs two have a low percentage in the Licensure examination for the last three years.

4. There is no significant relationship between the TQM practices and the SUCs performance in five dimensions. Only Continual Process Improvement had a significant relationship to school performance as assessed by the administrator respondents. By contast, the faculty respondents assessed that there is a significant relationship between the TQM practices and school performance. The non-teaching personnel assessment showed that the TQM practices of the SUCs on Employee Involvement and Supplier Relationship have no significant relationship with school performance. The other TQM practices have a significant relationship with school performance.

5. A continual improvement program was developed based on the result of the study.

Conclusion

In light of the findings, the following conclusions are drawn:

1. The SUCs respondents are practicing Total Quality Management in their respective institutions.

2. The TQM practices of the SUCs respondents affect their school performance in the licensure examinations.

Recommendations

The following recommendations are offered, based on the findings and conclusions of the study:

1. The SUCs in the NCR seriously consider the Total Quality Management philosophy in order to produce quality and employable graduates.

2. A TQM team be created to devise plans and programs for the full implementation of TQM among SUCs in the NCR.

3. Review classes be conducted to improve the passing percentage rate in the Licensure examinations of graduates.

4. A parallel study be conducted by future researchers in other regions with other respondents such as alumni, students, parents and the community to determine if similar results will be revealed.

5. A similar study also be conducted with private institutions as respondents.

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