

Application of Total Quality Management in the Classroom

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Abstract

This paper focuses on the application of Total Quality Management (TQM) to the effective teaching and learning of students in the classroom. It examines the components of TQM methods/tools in managing, securitizing and enhancing the quality of teaching practices in the classroom environment through the various teaching strategies. Also, the paper identifies and uses of TQM principles to focus on the needs, expectations, experiences and problems of students and it illustrates the issue of feedback for the continuous improvement of teaching and learning of students by TQM which will foster lecturer-student interactions. The paper concluded that TQM pedagogical methodology is intended to assist and guide students and lecturers with improved framework of teaching and learning that will promote and encourage continued learning in the classroom.

Keywords: TQM, Teaching, Learning, Classroom and Environment.

Introduction

Total Quality Management has become a key management tool and is a philosophy of management and leadership that is currently driving today's industry. TQM has been successfully applied in multinational firms/organizations; institutions of higher learning began to reexamine the educational process and the use of TQM principles in administrative areas of academia.

TQM in the classroom has been successful. The old role of teacher as lecturer and provider of knowledge has been replaced with a new role: teacher as facilitator, mentor and classroom manager. The goal is no longer to impart knowledge to students: teachers and students must design and deliver education together. If the students are active participants in the classroom. It is more likely that they will process the necessary knowledge and motivation to become life-long learners. To successfully apply TQM to education the systematic nature and various components of education must be stated. Some of these components include:

- a. Understanding the role of managers, leaders and facilitators (faculty)
- b. Creating a learning organization
- c. Understanding customers and meeting or exceeding their needs.
- d. Being clear on purpose and on product/service definition
- e. Building partnerships with customers and suppliers.
- f. Knowing the quality that is used in designed and built-in, not inspected in at the end.
- g. Working with and through teams
- h. Focusing on understanding and improving the process.
- i. Performing continuous improvement
- j. Benchmarking
- k. Making decisions based on data.

As with all industries, the need for quality improvement such as innovation and change is important for education.

Today education is becoming more and more competitive as commercial enterprises influenced by economic forces. Seymour (2000). According to Freeman (2002), this competition between various academic institutions / colleges is the result of the development of global education markets and the decreasing pool of money for research and teaching with only the more reputable institutions getting a bigger piece of the pie from government and industry funding. While Hansen (2000) asserted that rationale for adopting the participative TQM principles in classroom which are seen by many as having enormous potential to respond to educational challenges. TQM principles could be applied as a means of improving students/academic and non-academic morale, increasing productivity and delivering higher quality services to customers/students.

Horine et. al. (2006) reported valuable benefits derivable from the use of TQM, which include: increased employee empowerment; customer satisfaction; teamwork; and culture change. But in academic, who is the customer? Can we recognize students who are the direct recipients of the educational output as the customers, or the government and private industries that hire the graduating students? Should students be involved as customers in shaping the educational system?

Brigham (2000) believe that both students and businesses need to be treated as customers and they employ the concept of co-production that requires the involvement and cooperation of educators, students, parents or businesses to achieve the quality outcome of the educational service. Universities / colleges that focus on students as internal customers and their needs appear to attract the best recruits and in large quantities, and enabling them to achieve superior competitive standards.

What is Total Quality Management?

Feigenbaum, devised the term in 1961, who named it as Total Quality Control (TQC). TQM can be defined as “the process of integration of all activities, functions and processes within an organization in order to achieve continuous improvement in cost, quality, function and delivery of goods and services for customer satisfaction”. It refers to the application of quality principles to overall process and all the management functions in order to ensure total customer satisfaction. TQM implies the application of quality principles right from identification of customer needs to post purchase services.

TQM has been adopted as a management paradigm by many organizations worldwide. Quality movement in across the world starts with quality improvement projects in manufacturing companies. But later it spread to other service institutions including banking; insurance, non-profit organizations, healthcare, government and educational institutions. TQM models, based on the teachings of quality gurus, generally involve a number of “principles” or “essential elements” such as teamwork, top management leadership, customer focus, employee involvement, continuous improvement tool, training and so on. Awards like Deming in Japan, Malcolm Balridge in USA, European Quality awards some of the reflection of growing concern in this area.

TQM is the process of changing the fundamental culture of an organization and redirecting it towards superior product or service quality (Gaither, 2000).

TQM can also be defined as a general management philosophy and a set of tools which allow an institution to pursue a definition of quality and a means for attaining quality, with quality being a continuous improvement ascertained by customers’ contentment with the services they have received (Michael, et. al. (1997).

According to Witcher (1990) TQM is composed of three terms:

Total: meaning that every person is involved including customer and suppliers,

Quality: implying that customer requirements are met in accordance to specification.\

Management: indicating that senior executives are committed.

TQM may also be seen as; doing things right for the first time, striving for continuous improvement, fulfilling customers’ needs, making quality the responsibility of every employee.

The driving force behind total quality management is a relentless daily hunt for opportunities to improve quality and productivity. The concept of total quality management means getting every person in the organization to evaluate continually and aggressively how every job, every system and every product can be improved. TQM is based on the participation of all members of an organization in improving processes, products services and the culture in which they work. And finally, TQM is a way of doing business that must be instigated by top management and flow as a way of life throughout the organization to focus on the customer and to strive to improve the product, performance continually, to ensure competitive advantage.

Gregory (1996) summarized TQM philosophy as contained in the above definition are:

- A relentless hunt for ways to improve quality.
- Involvement of all employees
- Managerial leadership
- Corporate culture, and
- Customer focus.

These apply just as much to the teaching context as they do to business. The difference lies only in that in the teaching context “teacher” substitutes for “manager” the “students and teachers” for “employees”, “class culture” for “corporate culture” and the “student” for “customer”, while not encompassing of the TQM philosophy in its entirety, these are the essential parallels drawn in applying the TQM philosophy to teaching. The following definitions guide the TQM oriented teaching effort in a classroom setting according to Srivanci (2004).

- TQM in a classroom setting is a philosophy and a set of guiding principles and practices the teachers apply to teaching that represent the foundation for continuous learning and improvement on the part of the students and the teachers. It is the application of procedures related to instruction that improves the quality of education provided to the students and the degree to which the needs of the students and their employers are met, now and in the future.
- TQM in the classroom setting is a process that involves the teacher’s adopting a total quality approach to teaching (i.e. attempting to improve the quality of instruction and in the process, the students’ meaningful learning in every possible way) so that the needs of the students and those of their employers are best served. It is the never ending pursuit of continuous improvement in the quality of education provided to the students.

Most of work of quality and TQM can be traced to the work of gurus such as W. Edwards Deming and Joseph Juran’s teachings and statistics in Japan during the 1950’s and the revolution that followed in the USA in the 1980s to meet or preferably exceed customer expectations. Common theme in quality management includes consistency, perfection, waste elimination, delivery speed and customer service. The objective of TQM is to build an organization that produces products or performs services that are considered as quality by those who use them. The quality of a product or a service is the customer’s perception of the degree to which the product or service meets their expectations.

Application of TQM to Effective Teaching and Learning in the Classroom

Our T & L model focuses on building quality relationships among lecturers (as managers), students (workers), and content (as learning materials). Knowing how this relationship works will allow one to organize and choose appropriate T&L tools and methods to make effective learning happen. Lecturers as managers must effectively manage and organize the efforts of students so that they in turn can approach their learning with enthusiasm and in a participative mood.

Therefore we need to insist on improving the quality of every action and interaction in the T&L process such as total quality improvement in teaching, subject design and objectives, course notes and books, resources, staff-student interactions, assessment and subject evaluation.

Recognizing that not all students are willing to go the extra mile in their learning, this model suggests that one should guide and motivate those who are less likely to work extra hard and persevere towards a goal, for example by adopting Maslow’s pyramidal model to develop learning motivation for students (Maslow, 1970). This model requires a passion or burning desire to teach students with conviction. In this context, it is a lecturer’s responsibility to motivate and cause students to learn, but students are required to take responsibility for their learning. We need to get feedback and listen to students to see what we may need to change to become more effective e.g. changed lesson plans, style, appropriate humor, gently embracing problem students. The fact that we have almost full control over every major element in the T&L process such as subject (spoken words, depth of topic, making changes, jokes, illustrations), and style (mode of delivery, tone of voice, facial expressions, movement, actions, using groups, discussion or debate), makes us even more responsible for our students. So knowing these factors, the challenge is to immediately recognize any learning problems and then implement the corresponding solution with the correct and appropriate use of the subject, style and methodology. Figure 1 is a simplified interaction model developed by the authors, to show how lecturer and student interactions should take place in the T&L process. A feedback loop is included in which the lecturer listens to the students so as to make continuous improvement to the delivery of information that is able to cause student to learn continuously in the acquisition of knowledge, experience, know-how, wisdom and character. The moulding of characters should form part of the teaching strategies that give value to employers. This interactive model requires total commitment to teaching from the lecturer who takes full responsibility by actively causing students to learn. Here, the lecturer communicates the information of the subject matter to the students by simultaneously focusing and interacting with the students to motivate them and get their attention.

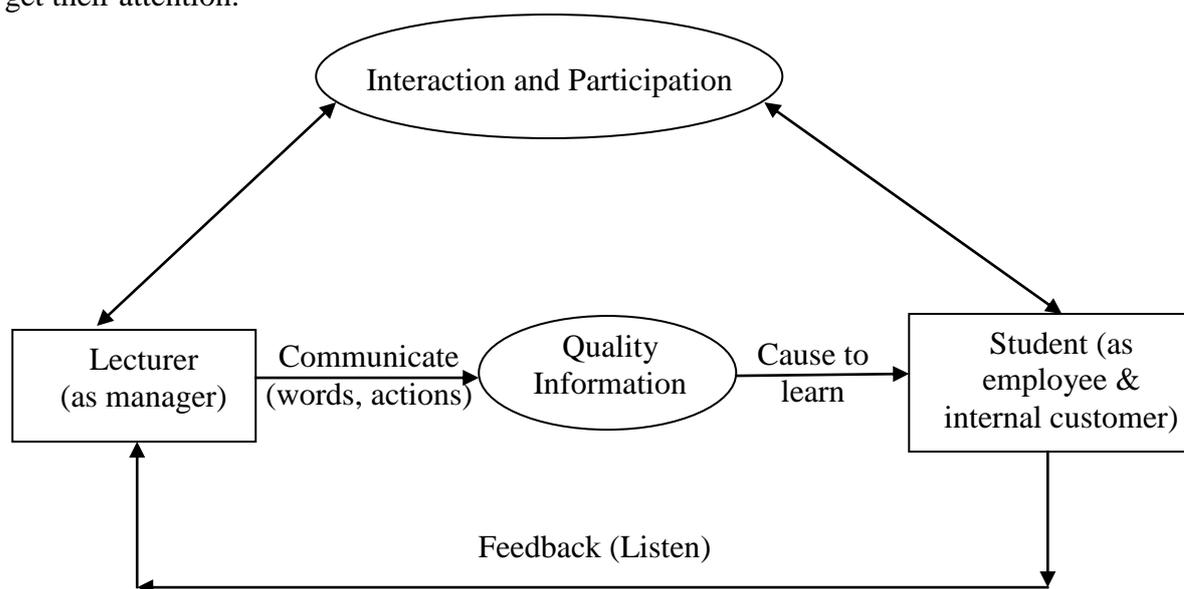


Figure 1: Teacher – Student Interaction Model

The interactive model ensures that every student involved in the learning process is assiduously meeting their learning requirements, and gaining satisfaction from their educational experience. This total commitment involves investing our time and energy and requires that we be professionally responsible and accountable for developing the students in a total quality environment. Some examples of the learning requirements can be more personal attention; using more multimedia and visual applications rather than all lectures;

more lecturer-student interaction; having more interesting, meaningful and practical or real-life lecture content that is presented with the latest technology; marking and returning all student submitted coursework quickly; teaching materials at the students' level; giving more demonstrations or hands-on approaches to certain topics; timeliness and accuracy in the provision of information and services; and more group activities.

For any continuous improvement efforts to occur, we must determine what corrective actions need to be taken to produce the desired changes in efficiency, quality and satisfaction. For an application example, continuous improvement can be achieved by receiving feedback from students at the end of each lesson. Students are prompted to see what important things have been learned in class, and what outstanding issues have not been resolved or answered. Any lecture content that has not been explained clearly or understood as intended can be either clarified during the last few minutes or at the beginning of the next class session. This type of feedback keeps one knowing what action and improvements needed to be made or what points need to be reviewed, reiterated and recapitulated so as to make the learning experience in the classroom a better one.

Our interactive model requires students to participate throughout their learning effort. This practice is important because the quality of teaching and learning is linked together. For example, to make students learn, retain and use information and material better, the subject topics should be taught by combining presentation with activities and interaction. This requires us to design relevant materials/activities for maximum student participation that will lead to dynamic and interactive exchanges in the classroom environment. This building of relationships with students involves care, respect, trust and openness. We find that one of the best ways to build relationships is to ask many questions as well as to encourage students to ask questions. Asking relevant questions and carefully listening to students' answers allows one to determine the level of knowledge and maturity of the student, and what areas need further emphasis. For example, we can arrange students in teams to let them think about, discuss and solve problems with or without providing hints. We know that learning is taking place when students think and ask questions that give insight into a topic. This method leads to the development of new ideas and solutions to complex problems.

Total Quality Management and Teaching Strategies

Total Quality management is a collective strategy that has meaning only if it is agreed upon and implemented by the teacher(s) with the appropriate teaching strategies in the classroom for effective teaching and learning. Applying TQM and teaching strategies in a single lecture by a single teacher always provides a good experience for the students in the classroom. The following are the various teaching strategies:

1. Lecture Method

Lecture method is teacher-centred. The teacher is the dominant participant. He plans and executes a teaching programme the way he deems fit. It is mainly an example of a one-way communication between a teacher and his pupils.

It is a very popular method among many African teachers, but it is the opposite among the learners. It is commonly used in most schools and subjects and often abused by teachers.

It involves the teacher dishing out factual information to large classes in a sort of spoon-feeding way. It often turns to dictation exercise for many learners. However, it is basically a chalk-talk method or on many occasions, it is mainly 'talk-talk' exercise. Usually, the teacher talks, draws on the board or dictates some information and writes a few 'important' words on the board. At best, lecture method involves the use of the ears and eyes.

In this method, the learners are relatively passive or are inactive. They participate in the lesson by being allowed to ask or answer a few questions which usually come at the end of such lessons.

2. Discussion Method

Discussion method is a student-centred method. It usually involves learners taking active part in the lesson; by sharing information democratically on any given topic. It is a purely verbal approach.

The teacher may be involved in selecting the topic(s) for discussion as well as those who will take part. He could be involved in the discussion on each occasion, moderating, steering the discussion, and collating the relevant points. However, the learners role involves researching the topic and presenting it from their various points of view as best as they can. Some students may be assigned the task of jotting down points during the discussion (as rappers).

Discussion could be in the following forms: whole class, small groups, debate, forums, panels, brainstorming, tutorials, round table conferences and symposium.

3. Project Method

Project method is “a natural life-like learning activity involving the investigation and solution to problems by an individual or a small group”. This method evolved from the educational work of an American scholar John Dewey. A project is learner-centred. It involves the teacher assigning project topics, giving guidance or supervision and being available for consultation as the project progresses. In project method, the learner is very actively involved in the planning and execution of the project in a well-thought out sequential order. It is activity based. It complements other methods. It is designed to help learners gain concrete understanding of an abstract or comprehensive idea.

Project could be by individual student or group project (given to a few students). The project might involve literature review or model project. Projects could be written projects, construction, making models, displays, charts and exhibitions.

4. Demonstration Method

Demonstration is a method that involves a procedure or activities in which a teacher shows practically what the topics is, to learners and explains how such an assignment could be done. It usually involves the teacher displaying certain skills, materials or techniques. This method uses mainly the senses of sight and sound and to some extent touching of the learners. It complements the lecture method.

Demonstration method can be used to show how something happens or what something that has been explained before actually looks like. It can also be used to show the result of a procedure. It could involve the use of real print or visual materials. It could be showing how to perform experiments.

5. Dramatization

Dramatization involves the use of acting to teach or learn. The teacher may start dramatizing an aspect of a lesson. However, it is a learner-centred method. Young learners are particularly interested in this method. Drama is popular, natural with children. When used in the classrooms, it looks like a carry over of home experiences. This method makes learning (by acting) life-like.

Examples of dramatization includes: role-playing, taking part in plays, acting the role of an imaginary person, socio-dram, puppetry pageants and skits.

6. Field Trip Method

Field trip method is a method that involves the learners going outside the classroom. It involves their going to observe, interact and appreciate what they had been taught, by other methods such as lecture method. Examples of this method include making excursions to industries, botanical or zoological gardens or other places of academic interests.

Uses

It is useful in complementing several lessons in primary, secondary and even tertiary level classes. It is particularly useful in geography, biological administration science and history with the assistance of TQM.

7. Assignment Method

Assignment method is one in which the teacher gives learners specific tasks which they have to accomplish within a stipulated time. The tasks may be given singly or to small groups of students. Such tasks may or may not be the same for different groups.

This method is designed to make learners do some or further research on a topic which has already been covered or would be covered or which time may not permit the teachers to cover in the class.

It has the disadvantage of enabling some lazy students to copy from more hardworking students. If the assignment is a group work, some students may find some reasons not to be actively involved. Yet all students in the same group may end up scoring the same marks.

It has the advantage of making students develop the habit of doing further studies on various topics. It could be improved by giving separate topics to each learner and making such efforts and giving learners immediate knowledge of results.

8. Individualized Method

Individualized method has to do with interaction between a teacher and a learner at any given time or period. Here a teacher teaches only one learner at a time. This is an ideal situation; it hardly exists in our schools today. However when certain strategies are used it could be achieved. Example of individualized instruction is using home lesson teacher for one's child: computer assisted instruction.

Total Quality Management model for Teaching and Learning in the Classroom

Realizing the importance of the Total Quality Management concept in improving quality and productivity in an organization, an attempt has been made in this paper to discuss the key features of TQM principles in achieving the teaching and learning goals for students. It is hoped that by applying particular aspects of the TQM techniques on education would result not only in resource savings but also greater learning satisfaction and achievement from students.

Yeap (2001) developed a simplified TQM model for improving teaching and learning in the classroom, based on and similar to industrial TQM application. In this simplified TQM model, the pattern of information flow and its activities in the teaching and learning process is shown in figure 2.

This theoretical model perceives students to be both customer and employee, and satisfies them in all the T&L processes in accordance with the TQM view that a satisfied student/employee will learn more and better than a dissatisfied student/employee. In the model, students acting as the immediate and internal customer are being transformed into valuable manpower for the future external customers (employers of university graduates). As internal customers with raw and unprocessed skills initially, students may not be able to

specifically outline how T&L practices should be performed. Instead, they are treated as co-workers or internal employees guided by lecturers (as managers) in improving the T&L processes, and encouraged to provide their collective opinions and feedbacks, which are important for any continuous improvement efforts.

Their level of involvement and influence should increase with the increasing level and maturity of their studies.

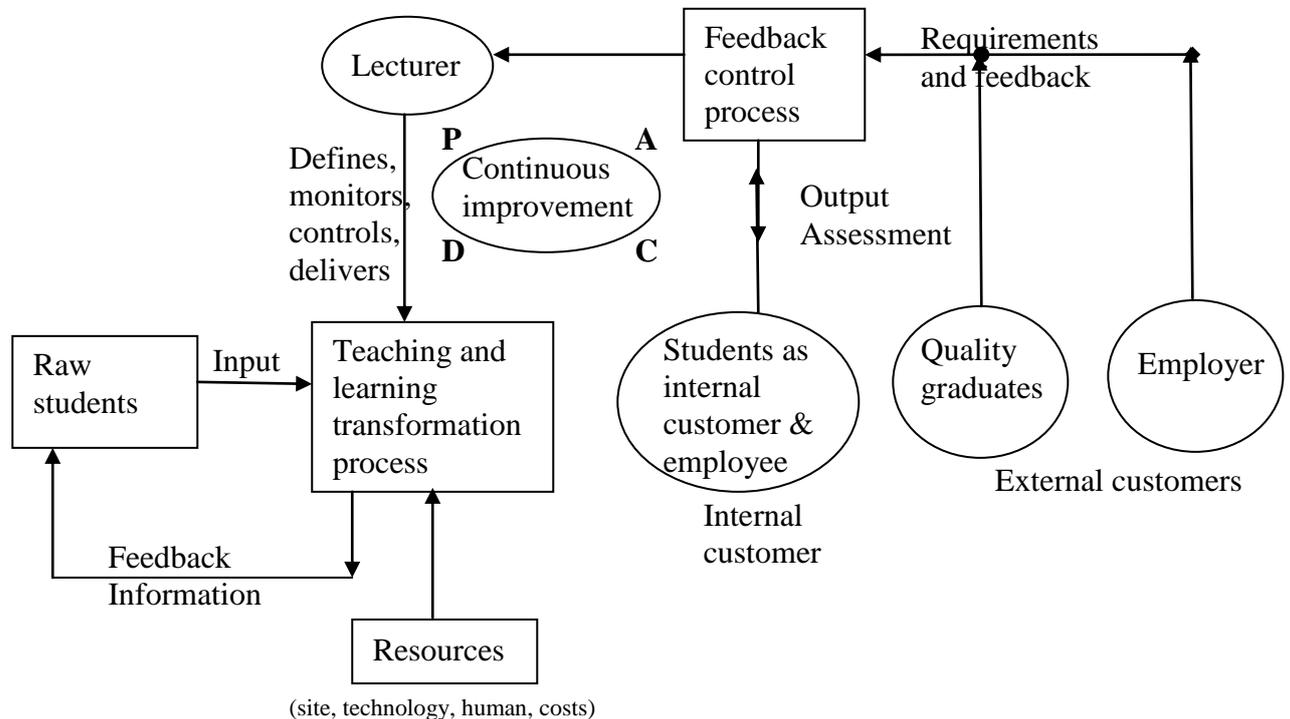


Figure 2: Simplified TQM model applied to the Teaching and Learning Processes in the Classroom Environment

The lecturer's job is to manage, facilitate and work continuously to improve the T&L process by soliciting feedback from students and driving students to learn. In this approach, the T&L process transforms the first year students (internal customers) into knowledgeable and skilled students for employers (external customers) over a period of three to four years in which the students slowly increase their self-worth or value through their education experience. We propose that the output product is not the student but the education of the student, and this definition requires the students to take an active role in the development of the product (education) and hopefully to develop the capacity for lifelong learning. For ensuring success, this transformation process requires the simultaneous working together of several resources from academic and supportive staff, departments and faculties, student affairs, resource centres, and financial services.

In reality, the input designated in a TQM system can be students, faculty and staff, funding, facilities, and university goals; but for this model we simplify the input to signify students. The selection of inputs of students entering into the universities and the type of processes/tools used can influence the output quality. Therefore, performing the basic quality control techniques using the marketing function during the recruitment of entry 0 level students may result in the type of expected quality output. Correspondingly, the model also shows that feedback from students and employers can help in the continuous improvement effort in refining, designing and redesigning the T&L process. However, this improvement can only happen if lecturers and students work together to identify and make improvements.

This model also aims to improve student learning in a way that results in lowering student failure rates and in graduating students on time. This type of improvement reduces wastage of university resources such as time, effort and money by producing students with the correct specifications in terms of the essential and desired skills and knowledge that impress employers. In TQM terms, wastage is the cost of nonconformance, or doing things wrong, and this may include student dropouts, student failures in mastering any subject or class, retention of students in a grade or year, etc. if a university has the right quality of lecturers, students' inputs and technological resources in the system, then the quality of the output produced should naturally be dependent on the effectiveness of the T&L practices. In order to know that we are doing things right or reaching the required level of quality, we can apply Demin's (1986) TQM philosophy to keep costs down and to increase student satisfaction. Such measures can be drawn from the feedback given by student's employers and colleagues, in which continuous corrective actions can be quickly taken to improve the content, mode and method of delivery, programmes, and teaching, and assessment methods. Because the scope of the education process is so broad, we will attempt to discuss the application elements of the TQM method, which focuses only on the limited areas of T*L strategies in the classroom with a commitment to continuous improvement by collecting quality feedbacks from students. The students are considered to be both the employee, and internal and immediate customer of the university. The objective is to use TQM principles to drive T&L towards excellence by working towards a continuous improvement effort or performance breakthrough of such practices. Adopting this model requires lecturers to be more open to change in their methods of teaching and delivering course materials to students through the use of innovative teaching strategies and technologies.

Conclusion

Effective teaching matters as quality teaching produces quality learning that creates quality students and makes customers satisfied. As such, Total quality management is one of the useful tools in the teaching and learning used in the school /college especially in the classroom, even though it was developed initially for the manufacturing industries. TQM model adopt a view that quality teaching that actively involves interaction and the participation of the students can make a significant difference in students learning.

Also, the model adopt specific TQM tools and principles to enhance teaching and learning quality that allows one to follow clear aims and objectives, to make continuous improvement in teaching, learning and assessment methods, and to be willing to be judged by others. For any continuous improvement effort to be effective, quality and reliable feedback information is essential and important in the evaluation procedure of teaching and learning with the output clearly defined and measured. And the application of the total quality management to effective teaching and learning in the classroom through different teaching strategies which will create a better understanding for the students and this will also keep the memory in the students' brain to be able to recall at anytime and also applying it when needed.

TQM is a strategy that is very useful in the teaching and learning in the classroom because it involved both the teachers and learners and brings out the quality of teaching in our students.

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