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Total Quality Management in Higher Education: Defenders, Opponents, and Attempts for Modifications

By Iman Rabah

EdD: Management, United Arab Emirates

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Keywords: higher education, total quality management (TQM), TQM founders, TQM defenders, TQM opponent, TQM modification.

I. Introduction

Some scholars argue that TQM can be taken from the business sector and be implemented in the same way in higher education. For example, Tuttle (1994) argues that the same reasons that led industry and the government which were using old management systems that cannot work in this changing and competitive world also led education to adopt TQM. On the other hand, TQM opponents like Kosh (2004) conducted a study 10 years after Tuttle's which insists that TQM did not work in higher education and was just a fad whose time had passed very quickly because it does not take the intellectual property into consideration.This paper is divided into four sections. Firstly, it presents the literature of the founders of TQM including Crosby (1979), Deming (1966; 1986; 2000), Feigenbaum (1961), Imai (1986; 1996; 1997), Ishikawa (1985; 1990), Juran (1995; 1999; 2004), and Taguchi (1997). Secondly, it views the literature of scholars who argue that TQM can be implemented in higher education like Aly and Akpovi (2001), Antony and Preece (2002), Kluse (2009), Moon and Smith (1998), Roettger, Roettger and Walugembe (2007), and Sousa (2006). Thirdly, it discusses the reasons that made other scholars argue that TQM cannot suit higher education especially in the academic department like Brown and Koenig (1993), Entin (1993),Kosh (2003), Mehralizadeh and Safaeemoghaddam (2009), and Sirvanci (2004). Finally, it discusses the arguments of some scholars about the need to modify the TQM model to fit the higher education context like Bailey and Bennett (1996), Ensby and Mahmoodi (1997),McCulloch (1993), Padro (2009), and Stensaker (2008).

a) Founders of the Total Quality Management Principles

The TQM movement started prior to World War II in order to achieve quality as an outcome of organized processes of planning and implementation. The quality movement was based on Deming's Plan-Do-Check-Act Shewhart cycle, his fourteen points, and Juran's Trilogy of quality control, quality plan, and quality improvement (Deming, 2000; Juran 1999). The quality leading experts Deming andJuran helped Japanese businessmen to pursue quality in 1950 and 1954 (Flores-Molina, 2011). Quality concepts were first implemented in the manufacturing industry in Japan using data and statistical quality control. Another expert of quality management is Ishikawa who used the seven quality tools that can be used at the shop floor level (Ishikawa, 1985), Ishikawa also introduced quality circles that included operators and engineers, and this was successful in manufacturing organizations in Japan. According to Imai (1997, p. 43), total quality management requires its own culture where people understand it and gain the required skills gradually over time and this should be done through the Japanese GembaKeizen concept. 'Gemba' in Japanese means 'the workplace' and 'Keizen' means 'continuous improvement,' which is a method of management based on changing one thing at a time (Imai, 1997, p. 43). On the other hand, according to the theorists Jary and Parker (1994), changing one thing has a minor impact on everything when assuming a machine system rather that a human 'system' that is interconnected and interdependent. In fact, the terms Total Quality Control, Total Quality Management, and Quality Systems were

Author: EdD: Management, Leadership, and Policy.
e-mail: imanbf@hotmail.com

coined by Feigenbaum who moved the quality concept from technical methods into a business management strategy (Feigenbaum, 1961).As a result some service companies, marketing, sales, logistics, and customer service agencies adopted the total quality management model. International Quality awards like ISO 9000, The European Foundation for Quality Management (EFQM) and Baldridge Malcolm National Quality Award (MBNQA), Six Sigma, and Eight Sigma were extended from manufacturing and service organizations to the government sector, and then moved on to other public organizations like healthcare and education (Evans and Lindsay, 2005). Some public organizations and universities modified this model in order to suit them by doing things like changing the concept of customers and clients to stakeholders as this involves a wider focus of good performance (Evans and Lindsay, 2005).

TQM originally started in Japan and was developed gradually in the U.S.and other countries through its main scholars: Crosby (1979), Deming (1966; 1986; 2000), Feigenbaum (1961), Imai (1986; 1996; 1997), Ishikawa (1985; 1990), Juran (1995; 1999; 2004), Taguchi (1997).

William Edwards Deming was an American consultant, lecturer, author, professor, and statistician (Andrea, 1992). He is best known for the 'plan-do-check-act' cycle that was named as Deming's cycle (Harold, 1993). From 1950 onwards he moved to Japan as a consultant who taught top managers how to improve sales, testing, products' quality, services, and design through quality control and statistical methods (Virginia, 1993). Deming is known as the man who had the greatest impact on Japan's business and manufacturing, he contributed to its economic power and to the high quality of its products (Harold 1993). It took a long time for Deming to win recognition in his home country even though he was considered a hero in Japan (Virginia, 1993). Deming was awarded the National Medal of Technology by President Reagan in 1987, and received the 'Distinguished Career in Science Award' from the National Academy of Science in 1988 (Andrea, 1992). According to Deming's philosophy, when organizations adopt appropriate principles of management, they can reduce litigation, staff attrition, rework, and waste and therefore cost, and as a result they simultaneously increase quality and customer loyalty (Deming, 1986). Deming argues that the key is continuous improvement and viewing manufacturing as a system instead of bits and pieces (Deming, 1966). In 1970 Deming's Japanese proponents summarized his philosophy through a comparison of 'A' versus 'B', A: when organizations and people focus mainly on quality defined as quality =results of work efforts/total costs- quality increases and cost decreases. B: when organizations and people focus mainly on costs- quality decreases and cost increases (Andrea, 1992).

According to Deming (1986), each manager should have a system of profound knowledge as summarized in four points in Table 1.

Table 1 : Deming's System of Profound Knowledge (Deming 2000)

Deming's System of Profound Knowledge			
Appreciation for a system	**Understanding variation**	**Theory of knowledge**	**Psychology**
Most organizational processes are cross-functional Parts of a system must work together Every system must have a purpose Management must optimize the system as a whole	Any process includes various sources of uncontrollable variation Many variations cause product failures, unnecessary costs, and unhappy customers Statistical methods lead to improvement through identification and quantification of variation.	Knowledge cannot exist without theory Experience describes but does not establish a theory Cause-and-effect relationships are shown through theory and can be used for prediction	People are motivated intrinsically and extrinsically; intrinsic motivation is the most powerful Fear is de-motivating Managers should develop joy and pride in work

Deming's (2000) system of profound knowledge is the foundation of his popular 14 points in quality management for managers in order to run an effective business. Deming does not use the term 'total quality management', yet those 14 points were considered to be the launch of the total quality management movement (Antony and Preece, 2002; Evans and Lindsay, 2005). They are summarized below in Table 2.

Deming's 14 points	
Point 1	Create and publish a company mission statement and commit to it.
Point 2	Learn the new philosophy.
Point 3	Understand the purpose of inspection.
Point 4	End business practices driven by price alone.
Point 5	Constantly improve system of production and service.
Point 6	Institute training.
Point 7	Teach and institute leadership.
Point 8	Drive out fear and create trust.
Point 9	Optimize team and individual efforts.
Point 10	Eliminate exhortations for work force.
Point 11	Eliminate numerical quotas and ' Management by Objective' (MBO), focus on improvement.
Point 12	Remove barriers that rob people of pride of workmanship.
Point 13	Encourage education and self-improvement.
Point 14	Take action to accomplish the transformation

Table 2 : The 14 points of Deming (Deming, 2000)

The second scholar who assisted in the foundation of TQM is Joseph Moses Juran who was a management engineer and consultant recognized as an evangelist for quality management and quality improvement (Debbie, 2004; Nick, 2008; Selden, 1997). His quality management philosophy is known as Juran's Quality Trilogy and consists of quality planning, quality control, and quality improvement (Juran, 1995). Quality planning is the phase of meeting customers' needs through developing the required process and products, and in this phase goals and the means to reach the goals are set (Juran, 1999). Quality control is the phase where plans are executed and operations are monitored in order to detect variation between goals and actual performance (Juran 2004). Quality improvement is the last phase and consists of the improvement of planning and performance in order to fill in any gaps between goals and actual performance (Juran, 2004). Figure 1summarizes the three phases.

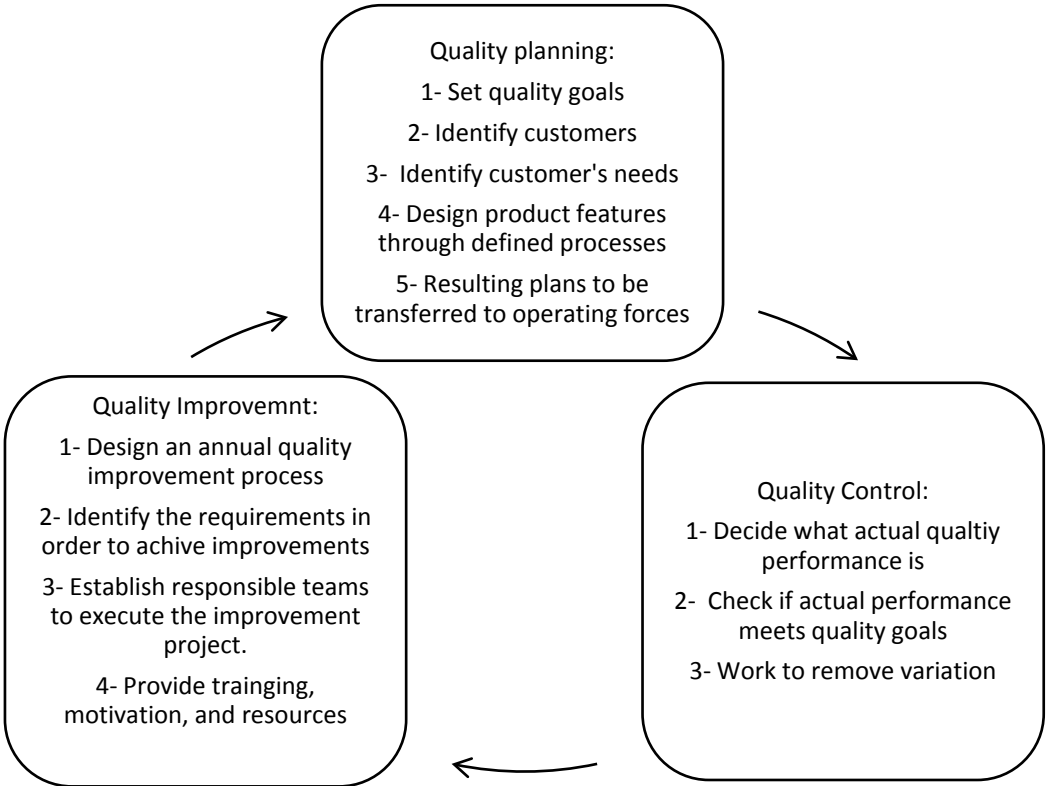

Figure 1: Phases of Juran's Trilogy

Philip Bayard Crosby is also one of the main scholars who developed the concept of quality and quality management (Bill, 1994). He was an author and businessman who contributed to the quality management practices and management theories through his concept of 'zero defects' (William, 1993). '*Quality is Free*' is the first book that Crosby published in 1979 based on the idea that organizations establishing a quality program save returns of more than what they pay off as cost for the quality program. It was very popular during the 1980s because of the crisis of North American quality where Japanese manufactures were taking North America's market shares between the 1970s and 1980s due to the better quality of Japanese products. Crosby (1979) responded with his principle of 'doing it right the first time' which consists of four major elements:

- Quality is defined as conformance to customer and product's requirements.
- Quality is prevention
- The standard to performance relative to requirements is zero defects
- The price of non-conformance is the measurement of quality.

Masaaki Imai is a Japanese quality management consultant known as the 'Learn Guru' and the continuous improvement father. Imai is the founder of 'kaizen,' who defines it as "a problem-solving process"(Imai 1997, p. xvi). According to Imai (1997), the kaizen strategy starts and ends with people, and 'kaizen' is a culture of sustained continuous improvement, it is a systematic approach to identify, reduce and/or eliminate 'muda', 'mura' and 'muri'. Kaizen is a Japanese word that consists of kai, which means change and zen which means good-for the better, giving Kaizen which means continuous improvement. Therefore, 'kaizen' means improvement/change for the better in personal life, home life, social life and working life and this change has to be continuous. Imai (1997) uses another Japanese word, 'gemba,' meaning the real place, which is the work place or the work environment. Gemba Kaizen means continuous improvement in the work place. 'Muda' is any wasteful activity or obstruction to the smooth flow of an activity, 'mura' is inconsistencies in the system, and 'muri' is physical strain (Imai, 1997). Gemba Kaizen simply means a process of continuously identifying, reducing, and eliminating muda, mura and muri (3 Mu) from the Gemba.

Kaizen is a daily activity that goes beyond simple productivity and improvement. It is a process that can humanize the workplace and eliminates overly hard work (both mental and physical) "muri" (Imai, 1986).The concept of kaizen covers all areas in the workplace:

improving the work environment by making it more efficient and effective, creating a teamwork atmosphere, and improving everyday procedures, employee satisfaction, and job fulfilment (Imai, 1997). The key objectives of kaizen's philosophy are: eliminating waste, quality control, just-in-time delivery, standardized work and the use of efficient equipment (Imai, 1997). Kaizen methodology includes making changes and monitoring results and adjusting, and Imai (1997) suggests replacing large-scale pre-planning and extensive project scheduling by smaller experiments that can be adapted immediately as new improvements. Kaizen "covers many of the management techniques…including quality circles, total quality control, total productive maintenance, suggestion systems, just-in-time productivity improvement, robotics and automation" (Wittenburg 1994,p.14). Kaizen supports process-oriented thinking by directing management to focus on establishing reliable processes since it is considered that good results follow automatically (Kruger, 1996).Imai (1997) describes gemba as a place for "value adding activities that satisfy the customer" (p. 16). According to Imai (1996), the 'golden rules of gemba kaizen' are:

- Go to gemba when a problem arises
- Take temporary countermeasures on the spot
- Find the root cause of the problem
- Standardize to prevent recurrence.

Feigenbaum is the scholar who devised the concept of total quality control and then developed it into total quality management (Bill, 1994). According to Feigenbaum (1961), total quality control is a system of quality development, maintenance, and improvement to provide products and services that meet customer's satisfaction at the most economical levels. He argues that a lot of extra work has to be done in order to correct a mistake, which is why quality should be everyone's job, resulting in it being nobody's job if it becomes the standard that everybody works for. According to Feigenbaum and Donald (2009), there are three steps to quality:

- First, focusing on planning through quality leadership
- Second, the entire workforce involved in modern quality technology
- Third, continuous training and motivation supporting organizational commitment.

Kaoru Ishikawa was a Japanese professor in higher education and an innovator in quality management who was famously known in the U.S for the Ishikawa diagram, also known as the cause and effect diagram or fish-bone that is used in industrial processes analysis (Donald, 1988; Yoshio, 1994) (See Figure 2). In addition to product design, this diagram is commonly used for the prevention of quality defects in order to identify potential causes for a specific effect in which each cause of variation is a reason for imperfection and where factors of management, environment, material, people, processes, and equipment cause the problem and sub-causes are connected by smaller arrows to major causes (Ishikawa, 1985). Ishikawa is also known for developing the quality circle, which is a group of volunteers like workers or students who have a team leader or a supervisor (Ishikawa, 1985). After being trained their job is to identify, analyze and solve problems related to their work (Ishikawa, 1985). Those solutions should be presented to their managers for the sake of improving performance and enriching the work and motivation until they become mature and self-managing after gaining management confidence (Ishikawa, 1985). The term quality circle is derived from Deming's 'plan-do-check-act' cycle (Greg, 2004). Quality circles are free to discuss any topic other than members' salaries or topics related to work terms and conditions (Ishikawa, 1985). Quality circles have a continuous responsibility and they keep moving from one project to another (Ishikawa, 1990). Ishikawa had an important role in developing Japanese quality strategies; he influenced participative approaches that involve all employees and advocated using simple statistical techniques and visual tools (Greg, 2004).

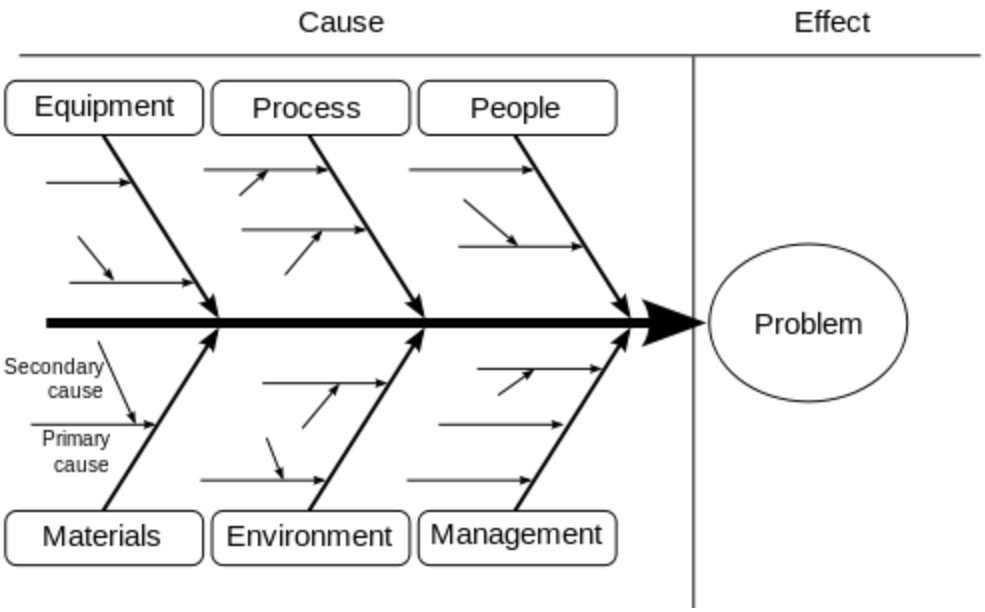

Figure 2 : Ishikawa fishbone diagram (Ishikawa, 1990, p.81)

Genichi Taguchi was a statistician and an engineer, and he contributed to the improvement of the quality of manufacturing through applying a statistical methodology in studying products variation from the standard requirements (Harrison, 1997). His methodology was mostly helpful in controlling quality in manufacturing (Paul, 1997). A new perspective on quality was pioneered by Taguchi focusing on the economic value of reducing variation, being on target, and dispelling the traditional view of conformance to specifications.

Deming's 'plan-do-check-act' cycle, system of profound knowledge and his 14 points and all the TQM principles that were developed by the rest of the TQM main authors started in manufacturing but was then implemented in other sectors like the service sector, healthcare and education. In some cases it witnessed success, and in other cases it failed, and this positions scholars in this realm in two different groups: those who advocate it and those who consider it a failure.

b) Defenders of Total Quality Management in Higher Education

Some scholars argue that TQM can be implemented in both administrative and academic departments in higher education. Moon and Smith (1998) consider that TQM can be implemented in any public organization including higher education in all departments. They found that it was successfully applied in two public organizations in the UK: Her Majesty's Custom and Excise and the Benefit's Agency. These two cases are government administration departments where improvements had taken place such as reducing waiting and answering call times, but the study does not include any successful evidence in academic departments in universities.

Antony and Preece (2002) argue that TQM is continuous improvement through self-assessment, where performance is compared to an excellence model to find gaps and ways for their suitable bridging and this can be implemented in higher education. It is important to point out that academic freedom is essential for professors as in order to approach any course from a variety of directions and tailor their courses and teaching to students; a professor has to use foundational principles that are applied differently in each case rather than replicable practices (Deem, 1998). Professors who teach in the same way and deliver the same lectures provide minimal opportunity for students to learn (Roettger, Roettger and Walugembe, 2007, p. 126). Sousa (2006) points out that there is no one type of best teaching, but it is essential to incorporate different approaches in teaching for optimal learning.Aly and Akpovi (2001) support the use of TQM in universities and argue that a lack of leadership and resources to encourage continuous improvement causes TQM to fail in academic departments. In their case study of TQM practices in the University of California (UC) and California State University (CSU), questionnaires were sent to the two university campuses to both administrative and academic managers to check on TQM programs offered by their schools. Half of both universities used TQM concepts, and seventy six percent of them reported that they are using them in the administrative departments only (Aly and Akpovi, 2001). The study results also indicate that academic institutes use TQM in administration, which is easier than academic departments because some processes may

be the same. Ali and Akpovi demonstrated those administrative processes, staff morale, teamwork, the quality of the programand personnel hiring improved when the universities adopted TQM principles. It should be noted that programmes are designed only by scholars qualified in the disciplines and they have to reflect lavational interests of the university as well as the particular expertise of those in a discipline who happen to be there. The universities implemented TQM radically through reengineering where TQM was dramatically challenged because of staff and faculty resistance in academic departments, and this would be one reason that hindered TQM from developing in the academic departments and demonstrates the need to modify the TQM model in order for it to be successful in higher education.

According to Green (1994), there are two basic dimensions that should be assessed in higher education: producing graduates who meet the human resource needs of organizations and enhancing knowledge through research. Green (1994) accepts the importanceof teaching and research in higher education, however he refers to assessing those essential values in higher education while ignoring the difficulty of assessment in this human system context and limiting the role of graduates to being university products. Green (1994) defends the implementation of TQM in higher education explaining that quality was internal in the past, however the concern about efficiency, quality, and accountability is growing and TQM control and assessment can serve the quality of higher education. Indisputably, Green (1994) does not take into consideration the uniqueness of higher education and that fact that its body is constituted of professionals who can self-assess the quality of their performance in teaching and who are in a continuous improvement process through creating knowledge when they conduct research.

Some scholars argue that TQM can be implemented in any organization, including higher education. Pike and Barnes (1996, p. 24) defines TQM by stating: TQM is a way of managing to improve the effectiveness, flexibility and competitiveness of a business as a whole. It applies just as much to service industries as it does to manufacturing. It involves whole companies getting organized in every department, every activity and every single person at every level.

TQM is a phrase that can be broken down into three terms: "Total," which reflects everyone's involvement; "quality," which implies meeting customers' requirements; and "management," reflecting the commitment of senior management (Witcher, 1990).In 1999 there were four higher education institutes out of fifty-one in Malaysia surveyed in a study by Kanji and Malek (1999) that implemented TQM. The results show that TQM success factors like teamwork, leadership and continuous improvement influenced the four institutes' performance and led to business excellence, but it is not clearly stated in Kanji and Malek's article how those factors caused a successful TQM, and especially how some professors can do research individually and teach using their own ways and methods.Montano and Utter (1999, p. 57) argue that: "While implementing TQM and quality improvements endeavours at educational institutions can be difficult at best, the results can be extremely beneficial for all involved." However, Montano and Utter (1999) advocate TQM in teaching and research ignoring the learning theory and different scholarly styles. "According to the socio-cultural theory of learning, mental processes are actions that cannotbe separated from the environment where they are performed" (Roettger and Roettger and Walugembe, 2007, p. 128).

According to Schargel (1996) TQM is a very successful management system that should not be applied from the business sector to higher education only as it should also start in schools. Based on results from an empirical study, he argues that TQM helps in creating well-educated students and thus a well skilled work force that will thrive when they work in industry; otherwise they need to be trained and educated in their workplaces that cost billions of dollars. His study is a case analysis of initiating the 'Westinghouse Education Quality Initiative' in the 'George Westinghouse Vocational and Technical High School', which introduced a TQM program. The school had many problems including high-aged teachers, entry students with poor math and reading skills and high rates of failure. Schargel (1996) explains how TQM was introduced to the high school through training a group of voluntary teachers about the TQM model and then writing down a mission, choosing a quality steering committee and a quality coordinator. The first target was increasing the morale of staff through choosing a staff member to be recognized every month by writing up his/her name on a bulletin board for everyone to see (Schargel, 1996).Since this practise is similar to giving young children stars on their work, scholars and academics are cynical about this kind of activity, as it is not based on scholarly practices and standards. Schargel (1996) explains that the philosophy of TQM was also introduced to students and a class of children was chosen as a quality leader who used to meet with the principal every month to discuss students' improvements and last year students were assisting their peers in the first year where dropout rates dwindled. The improvements included more extra-curricular activities, more parents attending parent-teacher meetings and more students were able to graduate and join colleges, and intrinsic motivation for students to be knowledgeable people was created (Schargel, 1996). The 'George Westinghouse Vocational and Technical High School' was the only vocational high school and one of only six high schools to receive a grant for an employment office.Schargel (1996) argues

that TQM can be implemented in all education institutes as a complete model, where it is a never-ending process that will embrace more and more TQM principles.This case study shows some quantitative measures as evidence of the improved results, yet some TQM concepts such as how to measure continuous assessment were not mentioned.

Although during the 1990s there are more studies that advocate TQM in higher education, there are some scholars who still defend TQM and consider that it could be implemented exactly the same way as in business without any modification. Sirvanci (2004) claims that a secondary student enrolling in higher education should be considered the same as raw material that goes through the production process from one step to another. From a very commercial point of view he argues that a student passes from one course to another in order to gain his degree, which is a similar process to the brand that a product in manufacturing is labelled with, and therefore the student goes to the workplace and competes with other peers among employers in same way as any competing product in the market. This is anoversimplification of the learning process, and in fact it leaves out most of it; he excludes student input, personality, communication impact, knowledge, and personal development. The student's role is learning through an active and cooperative way in order to solve illustrated problems and professors coach, facilitate and guide this action (Roettger and Roettger and Walugembe, 2007, p. 129). When the Baldridge Education award was developed in the 1990s in the U.S it focused on 'student satisfaction' and although the term 'customer' was not used by its criteria, the student was treated as a customer. In 2002 changes were made to the award's criteria where 'student learning results' became the main focus of the award (Sirvanci, 2004). Sirvanci (2004) considers that this change was due to awareness of the student being considered as a product and not a customer. He considers that a student is a customer only when he/she graduates and donates as alumni, however he insists that the student is a product, and employers hiring graduates from the same university reveal repeated purchase. This debate is unacceptable since it is a reduction of the human being and its complex development, ideas, and motivations. This change in the Malcolm Baldridge National Quality Award criteria is not necessarily intended to change a student's position from a customer to a product but the focus on the 'student learning outcome would embrace quality teaching and thus knowledgeable students. Sirvanci (2004) identifies some challenges that face TQM in non-profit organizations like higher education such as customer identification, leadership, organizational and cultural issues, the role of the student, and performance measures.

Focusing on leadership like Aly and Akpovi (2001) and Kluse (2009), Sirvanci argues that presidents and chancellors of higher education institutes are unlike CEOs in business organizations as they have less authority in their positions, and this holds them back from taking decisions to change the environment of their organizations in both the administrative and academic departments into a TQM culture. In addition to leadership, Sirvanci (2004) argues that there are three more reasons that hinder TQM in higher education: old traditions, faculty interest, and lack of team spirit. He states that old traditions that have been built in education have deep roots that prevent change, especially changing the whole culture to apply TQM. In fact, old traditions are not always negative, and TQM would not be better in higher education. Sirvanci (2004) argues that faculty members are product focused on research more than market focused on students' preparation to meet employers' requirements. Sirvanci (2004) considers that the problem is in higher education since it prevents the successful implementation of TQM and discusses education using business terms, however faculty members are not product focused and are instead research and publications focused. According to Sirvanci, team spirit is hard to achieve in higher education since departments compete with each other for university resources, and this creates an extra challenge for TQM implementation. In fact, this is only partly true since research funds usually come from external sources and professors in a department do not all do the same thing as they have different specialisations and different teaching styles. It is the variety and exposure to difference that is important at the academic level, not all getting the same thing. "It is important for the university professor to be acquainted with basic information about thehuman brain and to understand the processes involved in learning in order to better facilitatethe learning experience for all students" (Roettger and Roettger and Walugembe, 2007, p. 126).

Sohail, Rajadurai, and Rahman (2008) provide a case study of Pahang State College of Professional Development in the US about implementing quality management in higher education through the total quality management model. They try to prove that through their study and the replies they got from staff TQM empowered staff and helped to improve their practices from their own points of view. Their study aims at providing a benchmark for adopting TQM in higher education in order for other universities to improve the way they manage staff to motivate them. Although it is qualitative based on the emergent design, the position of the study was presented in the introduction, which shows TQM as a successful model that helps universities improve their staff performance and thus their programs and the way they are delivered. Indisputably, the discussion was only limited to the positive side of quality management. The authors

discuss the implementation of TQM in one university in the US and generalize conclusions on all universities in the world. The paper used qualitative methods in collecting information through a survey, including open-ended questions for students to check their satisfaction with quality, but the study doesn't include faculty, and conclusions were based solely on a sample of students. The findings are based on the findings of a case study about a training institute, which is not the right scope and sample to conclude results and recommend practices in higher education in general.

Taylor and Braddock (2007) looked at some theoretical and methodological matters in international university ranking systems and ideas through a conceptual interpretation of two systems that they consider to be the best in the world: Times Higher Education Supplement World University Ranking and the Shanghai Jiao Tong Academic Ranking of World Universities. The study concludes that although the Jiao Tong is not perfect it is better than the Times Higher Education Supplement since it includes more aspects in evaluating universities, and based onits criteria they suggest how a ranking system should be formatted. Through qualitative analysis the study examines the criteria of each of the two ranking systems by comparing them to conclude the ideal system would be. In the research statement the outcome is included, which is to find the best ranking system, and the purpose of the study is embraced within the discussion throughout the research ,which intends to find an ideal criterion for university excellence. Taylor and Braddock (2007) argue that even if a system is not perfect; there will always be advantages and good points to be benchmarked for university excellence. Nevertheless, the study sampling is limited to two ranking systems and some strength in other systems would have been ignored like continuous improvement in the Malcolm Baldridge National Quality Award. The paper suggests modification to the Jiao Tong ranking system through placing more emphasis on teaching and research as the basic finding of the intended purpose.

Ahmad and Hamdoon (2006) study the obstacles and challenges of implementing TQM in UAE higher education through a case study of Sharjah University. The purpose of the paper is to show the importance of TQM and to discover the problems that hinder its implementation in higher education. The paper refers to a lot of literature about TQM, including western and Arab scholars' research, which is valuable in highlighting different views on quality at a time when few papers included Arabic literature in this field. On the other hand, the paper covers research with positive results of TQM and ignores the opinion of TQM opponents. Using qualitative analysis, the paper discusses problems of TQM implementation in Sharjah University. A survey was conducted using a multiple part questionnaire, and the results show that all staff, faculty, and students support TQM implementation but that their knowledge of TQM is simplistic. These results contradict many other studies (e.g., Brown and Koenig, 1993; Entin, 1993; Kosh, 2003) that show that faculty have negative attitudes of TQM. The reason may be the small sample used or the lack of information about TQM as Ahmad and Hamdoon mentioned, although the researcher should make sure that the participants are aware and knowledgeable of the questionnaire's approach when they are giving input about it.The conclusion of this article recommends TQM implementation in UAE higher education, although the paper does not place enough emphasis on the Arab culture to adopt TQM in higher education.

Other studies about quality management in higher education include Brown and Marchal (2008). They present a study of a higher education nursing department at the University of Virginia that initiates the continuous quality improvement framework to improve its programs. The nursing department decided that continuous quality improvement should be applied through three main goals to be achieved: student satisfaction with advisement, students' satisfaction with the program, and raise of pass average and work to achieve the goals through Deming's (plan- do- check-act) model. The study uses a fish bone diagram to present what the department found to be affecting its program, concluding that continuous quality improvement takes place when an action is needed to solve a failure problem like student's dissatisfaction or student's risk to fail or to meet accreditation requirements. Although the continuous quality improvement framework was initiated and studied by faculty it still wanted to achieve goals that may be political, which are considered essential in order for organizations to survive. In fact, this contradicts Deming's idea since his (plan- do- check-act) cycle is a continuous process for continuous improvement.

Zeitz (1996) studies employees' attitudes about implementing TQM in a regional office of the US Environmental Protection Agency. About a dozen interviews were conducted and 448 questionnaires were administered. The study found that: "Contrary to previous literature, clerical and managerial employees were most favourable toward the TQM program, whereas professionals were most negative" (Zeitz, 1996, p. 120). The study suggests that the reason for this could be because professionals had little direct rewards and more work from the implementation of the TQM process, and also because the agency hadn't started using TQM to simplify professionals' processes by the time the study was conducted. The study seeks to explain the causes of the attitudes of employees toward TQM through quantitative analysis and objective measurements. Zeitz (1996) addresses the issue of employees' attitudes towards TQM in a public department by defining a set of variables and

procedures to measure them. The variables include perception of measurement support, barriers to implementation, satisfaction with TQM, TQM awareness, training, team experience, intrinsic value, grade, and position (Zeitz, 1996). These variables were measured through a survey of employees in the Environmental Protection Agency regional office. The article presents six hypotheses related to different level of employees and their attitudes toward TQM. For example, hypothesis one states: "Lower to middle level managers will have less favourable view of TQM" (Zeitz, 1996, p. 122) is based on a literature review of Deming and Carr Littman who concluded that lower and middle managers mostly resist TQM programs. A theoretical framework guides the analysis and proposes that there is causal direction between its factors. Information comes from the whole population of the Environmental Protection Agency regional office. Zeitz (1996) reports ample information about the research measures, which helps scholars studying public administration to progress in the practice and theory of research in this topic. A deep understanding of the measurement approach is revealed which provides confidence in the research results. Zeitz (1996) uses two data collection methods: interviews and questionnaires. In most of the cases chi-square is used as a test, where employees are categorized based on their position at work and attitudes towards TQM.

Anyamele (2005) discusses the importance of leadership in developing and maintaining a quality management system in Finnish higher education. His study found that quality management helps higher education institutes to be learning organizations and cope with changes in the world. The scope focuses on educational managers (administrative and academic) in Finnish higher education organizations. The research is qualitative and Anyamele used a questionnaire with open-ended questions based on the EFQM criteria that was sent to different leaders in higher education; 30 replies came back in addition to interviews with five different senior managers in Finnish higher education. The results of the study depend a lot on interviews, although only five were conducted and they focused solely on the positive management characteristics of Finland education. Anyamele's (2005) study concludes that quality management in Finnish higher education institutes is presented through excellence in leadership and serving students who are considered the customers. All stakeholders and the academic community are also considered customers, but the study doesn't show how quality management serves the academic community. Anyamele (2005) used mixed methods in studying TQM as a type of public administration in Finnish higher education. The study focuses on the role of leaders to develop and maintain quality management. It finds that TQM helps universities to adapt to change and become learning organizations. The scope includes senior managers in academic and administrative departments in Finnish higher education institutes. The European Foundation for Quality Management (EFQM) was used as a theoretical frame that was used to construct a questionnaire. The article used quantitative analysis for the data collected from the questionnaires, however the results mainly depend on a qualitative analysis of interviews even though only five interviews with different senior managers were conducted, and these only focused on the strength of Finnish higher education management. Anyamele (2005) concludes that TQM is adopted in universities that have excellent leadership skills, and the findings are similar to some of Zeitz's (1996) findings that show the importance of managers' role in helping employees to have a positive attitude of TQM.

Potocki, Brocato and Popick (1994) conducted a study in Johns Hopkins University, Physics Laboratory Education Centre where the university implements TQM and believes that students should be empowered. Students gave input about the curriculum and course designs and the university asks for their feedback at the end of every class through a semi structured questionnaire consisting of three questions: What helpful aspects did you get from this class? What unhelpful and unclear aspects did you get? Is there any knowledge you learned which you didn't expect? (Potocki, Brocato and Popick, 1994) In this study qualitative methods were used to gather information through interviews and focus groups. During focus group sessions students identified six vital elements that contribute to their learning: challenge, interest, relevance to future jobs, flexibility of projects, knowledgeable instructors, and valuable teamwork. Based on these findings the study advocates TQM and recommends that all universities focus on their students' satisfaction in order for them to thrive, although the study's results were generalized based on a single university in the US.

Carroll et al (2009) studies the quality management system in higher education institutes in Oman. The article is an explanation of quality management requirements introduced by the government, yet it doesn't explain how higher education institutes perform to meet the quality requirements of the ministry of higher education and external accreditation bodies.The paper gives a historical background of higher Education in Oman and then an explanation of the Oman Quality Plan. The Oman Accreditation Council required all universities to get accredited locally in order to guarantee a standard quality that fits the local Arabic and Muslim needs. The historical background is well structured as it gives us a picture of the development of quality awareness in Oman. The paper concludes that the key success factors of quality management are benchmarking and the involvement of various stakeholders. This study gives a picture of the quality management in Oman introduced and forced by the

government. It is more about the requirements for a foreign university in order to export its programs to Oman than the quality management in the organization. The effectiveness of this paper is questioned since Carroll et al elaborates on how quality management was introduced to Oman universities from the governmental side where quality equals accreditation requirements, and this contradicts a lot of literature in quality management.

Reavill (1998) argues that there are 12 stakeholders in higher education and the quality assessment of higher education in the UK such as the Higher Education Funding Council of England, Scotland, and Wales does not cover all stakeholders' needs even though it contributed a lot to the quality of higher education. According to him the customer is clearly identified as the employer purchasing the output of higher education. He considers that the student is neither a customer nor a product, but is instead a stakeholder. To him, the 12 stakeholders are: students, employers, families and dependants of students, employees in the university, the university, university's suppliers of goods and services, secondary education schools, other universities, industry, nation, government, tax payers, and professional bodies. They are all stakeholders because they either pay for the university or benefit from it, or both at the same time. He argues that it is hard to prioritize them but the first four are the most important. The problem in Reavill (1998) is the same as in some previous articles discussed above, which is that he is considering education as part of the economical sector and not socio-cultural.

c) *Opponents of Total Quality Management in Higher Education*

Quality management was brought into education in an attempt to improve the quality of life in societies through improving the quality of teaching, quality in the classroom, and the quality in the teaching process (Evans and Lindsay, 2005). However, its application instead reduced the standards because it was not modified to suit educational organizations, there was no plan for the change, and there was a desire to do it fast without making adjustments to fit which were similar to the change from centralized control to a distribution of authority (Ramsden, 1998).

Some scholars argue that there are significant reasons that hinder the success of TQM in higher education. For example, Kosh (2003) argues that TQM has a very small impact on higher education since all of the successful cases were limited to administrative rather than academic departments. One of TQM's basic components is having defined processes and a consistent assessment and measurement of performance with standard processes. Kosh (2003) argues that this cannot be implemented in higher education since standardization in teaching limits professors' innovation in their classes. Professors are sometimes assessed at the end of the semester and with TQM they need to be assessed continuously and maybe on daily basis that is very hard (Kosh, 2003).Teamwork is essential in TQM, and this cannot be achieved in higher education according to Kosh (2003) since committees try to hinder work in higher education more than just getting on with it.

According to Brown and Koenig (1993), the major difficulty of TQM implementation in the academic department is that it gets a lot of resistance from faculty since it causes more committee work and provides less professional benefits. Entin (1993) argues in a study that he conducted on ten colleges and universities in and around Boston that senior management usually have a lot of enthusiasm to implement TQM but faculty resistance creates a huge gap between employers' requirements and academic institutions. Mehralizadeh and Safaeemoghaddam (2010) studied the extent of applying quality management models like TQM, ISO 9000, and EFQM derived from the business sector to higher education institutes in Iran. Mehralizadeh and Safaeemoghaddam (2010, p.177) discuss that new management ideas need to be "socially authorized, theorized, productivised, and progressive, harmonized, dramatized, and individualized". The results of the study are consistent with Brown and Koenig's observations and show that TQM was not socially authorized, especially by higher education institutes, since it requires more committee work and offers less individual benefits for them as scholars and also less freedom. Mehralizadeh and Safaeemoghaddam take the same view as Kosh that TQM works solely in administrative departments and weakens the academic culture that is supposed to be the priority in higher education institutes. Mehralizadeh and Safaeemoghaddam also argue that TQM is not properly theorized for education since it focuses on the process of enrolling students more than what students learn. It also contradicts all educational theories and does not build on the social and culture theories as education cannot be productivised since the outputs are heterogeneous. Mehralizadeh and Safaeemoghaddam also argue that TQM is not harmonized if stakeholders are not all satisfied and treated equally in higher education institutes, and this is reflected in the European Foundation for Quality Award and the Malcolm Baldridge National Quality Award criteria where the importance of different stakeholders is unequal. Mehralizadeh and Safaeemoghaddam also state that TQM is not dramatized since no empirical evidence in their article demonstrated that, and it is not individualized since it does not benefit people at the individual level or at the organizational level and the awards given do not reflect the actual success of TQM in higher education institutes. Mehralizadeh and Safaeemoghaddam use Rovik's model of management

solely and generalize the results to all Iranian higher education institutes, discarding any successful cases of TQM implementation that may have happened in Iran.

Pfeffer and Coote (1991) consider TQM to be a slippery concept since it includes a wide variety of meanings and means different meanings to different people. Wiklund et al (2003) argue that TQM is a vague concept referencing Deming the founder of quality management, and he states:

…the trouble of total quality management, the failure of TQM, you can call it, is that there inno such thing. It is a buzzword. I have never used the term, as it carries no meaning (quoted in Wiklund et al, 2003, p. 99).

Pfeffer and Coote (1991) argue that all definitions given to TQM are not clear, and they consider it as aiming to satisfy both internal and external customers through three components: values, tools, and techniques. For example, quality awards like the Malcolm Baldridge National Quality Award and European Foundation for Quality Management Award are tools that can be used in techniques such as self-assessment by supporting core values like commitment. Pfeffer and Coote (1991) consider that a student is an "active participant" in education and not a customer or a product. In 1995 the National Agency for Higher Education was established in Sweden to guarantee quality management in Swedish universities that had a dramatic increase in students during the 20th century. It focuses on system views and continuous improvements, where universities' assessment consists of two stages, first a self-assessment using the plan, do, check, act cycle of Deming, and then the National Agency's assessment based on criteria adopted from the Malcolm Baldridge National Quality Award and the European Foundation for Quality Management and Swedish Quality Award. In 2001 the National Agency also introduced "the national evaluation for subjects and program" which shifted from processes and systems that are TQM based and focused on what is done instead of how things are done. Wiklund et al (2003) also criticize this assessment because it requires a lot of statistical data that takes a lot of time to collect and which might not be useful after a short period of time. They also recommend engaging students more in the assessment process through involvement and creating commitment in them with new ways that assessments should bring into light what resources are needed. Their study generally criticizes assessment since it diminishes innovation and creativity and encourages future research on university case studies to analyze how assessment is affecting the university's performance.

Houston, Robertson, and Prebble (2008) present a study in the academic department in one of the eight public universities in New Zealand. The paper includes total system intervention as the main approach and its intent is action research using qualitative tools like focus groups and qualitative analysis, but the action research approach wasn't revealed clearly throughout the study. The desired outcome of the study was to discover whether this department is doing the right thing and whether they are doing it right in the programs they offer and their content. The purpose of the study is to give a beneficial report for national improvements of quality management in higher education. The paper constructs its conceptual framework and methodology based on critical systems thinking in which all students' inputs were collected. There were four hundred students in the department and it was impractical to conduct individual interviews as Houston, Robertson, and Prebble explained, and therefore focus groups were done instead. Participants from the entire department were requested to give a meaning for the word quality, which implied potential interventions for improvement and the quality improvements they suggest. The study reveals that quality models like audit processes gave little attention to educational theories, processes, and student learning. The critical systems approach used by the researchers helps in identifying problems, solving them, and offering methods to improve management systems in university departments. In regards to the context of the study, the scope only included a single department of a single university and the results are generalized even though the cases would vary in different universities in New Zealand. The study argues that finding problems helped in solving them but this wasn't represented. Nevertheless, we shouldn't deny that these results would be useful as a beneficial benchmark that will help in quality improvement in the national higher education sector, and thus meet the purpose of this study.

The research statement of Anderson (2006) focuses on finding the reason why academics are against the assessments used by their universities even though they contribute a lot to the quality of teaching and research. The paper is an interpretive study done over a sample of thirty academics from ten universities in Australia. Qualitative methods are used through semi-structured interviews. The study found that "…academics drew on notions of quality as understood within traditional academic discourses of excellence in scholarly endeavour" (Anderson, 2006, p. 171). They consider that in total quality management, quality is conformity with the lowest standards (Anderson, 2006). The study also finds that faculty members consider quality assurance threatening and feel it should be replaced. The study concludes that TQM doesn't work in higher education and generalizes this conclusion to all higher education institutes, although the sample is limited to one country and the cultural aspects of the participants are not mentioned. The findings answered the research question but did not show how this report would be used beneficially for academics or for managers and the problem was illustrated and the

reasons of the problems were discussed but there was no purpose shown to take the finding further and reveal beneficial effects in practice.

d) Arguments about modifying the TQM model in Higher Education

At the same time, between TQM extreme advocates and TQM extreme opponents some scholars suggest using this model in higher education with some amendments in order to suit its context. McCulloch (1993, p.7) considers implementing TQM in higher education if its language is carefully adapted to educational values. McCulloch (1993, p. 8) divides customers of higher education institutes into primary, secondary, and tertiary and states they should be prioritized and served accordingly. McCulloch (1993) argues that TQM encourages teamwork in committees through innovation and incremental change. Evans and Lindsay (2005), consider that when organizations support teamwork all personal initiatives are taken into consideration, which adds value to the processes and leads to continuous improvement. Training is part of TQM, but McCulloch (1993) argues that training for faculty should be substituted by self-development.

Stensaker (2008) summarizes quality assurance processes in universities through an abundant review of quality management literature and then explains the gap between expected and real outcomes in higher education. A new relationship between organizational change and quality assurance is recommended which is the outcome that the paper intended. The outcome and the purpose were not mentioned through a clear research question or statement but were only concluded in the final section. This interpretive study type helped in finding what the paper looked at, but this study was only based on theory where some qualitative methods like interviews and observation were missing.Stensaker is not against quality assurance in higher education but recommends that quality assurance programs should be aware of the gap between the required outcome of quality assurance and facts because quality reports are not used as an improvement process, however they are hindering freedom and innovation among academics. This recommendation reflects the effectiveness of the paper since it highlights a problem that the entire academic sector is suffering from, but it doesn't suggest any practical changes that would improve this situation.

Another example of approaching TQM in higher education is Padro's (2009) interpretive study, which discussed Deming's system of profound knowledge that can help universities change to meet the new accountability requirements they are facing. The paper is a theoretical conceptualization about Deming's profound knowledge system that includes four dimensions of his model. The first dimension is an appreciation for a system that views the organization as a whole integration between students, alumni, faculty, employees and the community, who have one aim as stated by the mission, and this focuses on integration and quality from inside the university, but it is not stated clearly in the article how this would be done. The second dimension is variation in knowledge, where variation is not considered to be a problem since it gives academic freedom and prevents students from being pushed to programs just for political or market needs. Padro supports academic freedom and variation. The third dimension is psychology, which is summarized by awareness of emotional intelligence and building trust. The fourth dimension is theory of knowledge through the plan-do-check-act cycle of Deming, and this reveals Padro's support for the idea of assessment in education. In addition to those four dimensions Padro added two more: independence, where motivation is different based on an individual's connections and interaction through public policy and defining quality through legislation. The public policy presented by Padrocontradicts Deming's dimensions, which focus on quality as an initiation from the organization and not as a government requirement. The paper is locating quality management in the administrative and academic departments of higher education institutes. In fact, the dimensions added in this paper contradict with Deming's position of quality in higher education. Deming believes in motivating staff at all levels through empowerment and process ownership (Walton, 1986).

Ensby and Mahmoodi (1997) proposed the criteria of the Malcolm Baldridge National Quality Award be used to assess quality in higher education institutes. The purpose of the research is to show that the accredited bodies should not be used as a measurement of quality since they do not lead to consistency in instruction practices and they do not meet the changing needs of their students. Although the article defends quality management concepts in education, it also pays attention to the resistance of faculty to adopt Malcolm Baldridge National Quality Award criteria, considering that this resistance is a result of faculty fear of losing control. The article only includes universities in the US and results cannot be generalized to other universities and it limits the quality management criteria to the delivery of material, course control, and assessment. Nonetheless, the article highlights the current system problems in many universities.

Similar to Ensby and Mahmoodi (1997), Bailey and Bennett (1996) focus on students in their quality management approach in higher education. The purpose of the article is to develop processes in higher education that meet the requirements of the students. The information presented is all based on a literature review through analysis of different articles that discuss whether the focus on higher education should be on the student or the employer in deciding what needs to be improved and for whom. The article suggests that universities should focus on developing processes to

enhance students' skills and knowledge in order to attract more employers who are considered as customers in the article. Although many scholars are against having these industry concepts in a socio-cultural organization like education, many universities consider such an outcome as being effective and beneficial where they work to have defined processes that are continuously measured and assessed.

Michael, Sower, and Motwani (1997) designed a comprehensive model of TQM in higher education by defining the customers as three groups: students, industry, and community. The model starts with defining a mission and a vision statement with keeping the customer in mind, driving out fear through empowering employees, developing pilot teams in administrative departments where TQM should start before moving to the academic departments having measurement criteria through some statistics, recognizing and rewarding successes, improving constantly, and reviewing progress. Milakovich's (2006) arguments are similar to Michael, Sower, and Motwani's (1997), and he considers that empowering is essential for a successful implementation of TQM where people who own their processes and form them based on what they argue is true perform at a very high level and benefit the whole organization.

Antony and Pierce (2002) advocated TQM in higher education institutes through quality function deployment by considering that it balances between teaching and research. In a case study at the University of Cincinnati Department of industrial engineeringthey identified the needs of various customers (businesses and students), and those needs were translated into product features such as "practice knowledge" and" communication skills" and then translated into process features like lab experiments, project reports, and presentations.

II. Conclusion

Defenders of TQM like Aly and Akpovi (2001), Antony and Preece (2002), Kluse (2009), Moon and Smith (1998), Roettger, Roettger and Walugembe (2007), and Sousa (2006) argue that TQM can help universities survive in the changing world in a similar way to any other organization in any other sector because old management styles cannot work in a competitive environment, however most TQM defenders witnessed its success in administrative departments but not academic departments and among faculty members where it was either resisted or led to a huge problem in teaching and research as the core activities of higher education in the countries reviewed. Those are the main reasons that led many scholars like Brown and Koenig (1993), Entin (1993),Kosh (2003), Mehralizadeh and Safaeemoghaddam (2009), and Sirvanci (2004) to stand against TQM and consider it a fad that cannot work in the public sector in general and in higher education specifically. When there is a decision to plunge the entire organization of some businesses in TQM it is deployed in some departments at the beginning and then spreads to the rest of the departments. The case in higher education would be the same, as starting TQM in administration and preparing the whole organizational culture to understand its goals and create a desire to implement it would help it spread to the academic departments, but with a number of the modifications discussed above. The literature review of TQM, its development, its defenders and opponents in higher education, and scholars who argued that it should be modified encourages future research to develop a new management model in higher education by combining TQM and professional autonomy in teaching and research supported by traditional university management systems like the collegial model, shared governance, and academic tenure.

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