REPUBLIC OF TURKEY
YUZUNCU YIL UNIVERSITY
SOCIAL SCIENCES INSTITUTE
PUBLIC ADMINISTRATION DEPARTMENT

Applying Total Quality Management in Higher Education A case study in Kurdistan Region

MASTER THESIS

PREPARED BY

Twana Mohammed Mahmood Sofi

SUPERVISOR

Assoc. Prof. Dr. Ferit İZCİ

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T.C.
YÜZÜNCÜ YIL ÜNİVERSİTESİ
Sosyal Bilimler Enstitüsü

TEZ KABUL VE ONAY SAYFASI

SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜNE

Bu çalışma, jürimiz tarafından **Kamu Yönetimi ANABİLİM DALI**'nda **TEZLİ YÜKSEK LİSANS TEZİ** olarak kabul edilmiştir.

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Abstract

The overall objective of this thesis work is to highlight the general principles of TQM involved and to point out how this approach has been and can be used to improve the quality of an academic institution. This work has been specified for higher education of University of Sulaymaniyah, and it will cover the whole of institution, administrative structure, rather than academic area, specific program, department, or services. This objective is conducted towards an evaluation and assessment of the current quality work of this university. In fact, the way in which this university is working with quality issues now, will be compared with a TQM approach and the weaknesses and strengthens of the quality work of this institution will be recognized.

After reviewing the current situation of this university in the context of quality and identifying possible existing problems, the authors will offer some recommendations and suggestions for improvement. For this purpose, in the theoretical frame of reference, a specific TQM approach will be developed and some detail descriptions of terms involved in this approach will be reviewed.

In order to reach to the objectives of this thesis work, researcher will use primary data in the form of interviews, and secondary data from literatures, scientific articles, and books and Web Pages. In addition, the researchers will use abduction methodology within this research. In conclusion, authors are aim to provide a complete documentation in its kind in the field of quality and Total Quality Management, which can facilitate this university to improve the quality of its higher education.

Keywords: Higher Education (HE), Quality, Total Quality Management (TQM), University of Sulaymaniyah (USUL).

Özet

Bu tez çalışmasının genel amacı, TKY'nin (toplam kalite yönetimi) içerdiği genel ilkeleri vurgulamak ve bu yaklaşımın bir akademik kurumun kalitesini iyileştirmek için nasıl kullanıldığını ve kullanılabileceğini göstermektir. Bu çalışma, Süleymaniye Üniversitesi'nin lisans eğitimi/yüksek eğitimi ile sınırlı olup bu alan üzerinde yoğunlaşmıştır. Çalışmamız, akademik alan, belirli program, bölüm veya hizmetler yerine kurumun tamamını, idari yapıyı kapsayacaktır. Böyle bir metodun tercih edilmesi, bu üniversitenin mevcut nitelikli çalışmalarının tespiti edilebilmesi ve değerlendirilmesini hedeflemektedir. Nitekim bu üniversitenin hâlihazırda kalite konularıyla çalışma yöntemi, TKY yaklaşımı ile karşılaştırılacak ve bu kurumun nitelikli çalışmalarının zayıf ve güçlü yönleri tespit edilecek.

Kalite bağlamında bu üniversitenin mevcut durumunu inceledikten ve olası mevcut problemleri tespit ettikten sonra, yazarlar iyileştirme konusunda öneriler ve tavsiyeler sunacaklardır. Bu amaçla, teorik referans çerçevesinde özel/belirli bir TKY yaklaşımı geliştirilecek ve bu yaklaşımda yer alan terimlerin bazı ayrıntılı açıklaması gözden geçirilecektir. Bu tez çalışmasının amaçlarına ulaşmak için, araştırmacı birincil verileri görüşmeler, ikincil verileri de literatürlerden, bilimsel makalelerden, kitaplardan ve Web Sayfalarından gelen veriler şeklinde kullanacaktır. Ayrıca, araştırmacılar bu araştırmada kaçırma metodolojisini kullanacaktır. Sonuç olarak, yazarlar, bu üniversitenin yüksek eğitim kalitesini artırmayı kolaylaştıracak nitelik ve Toplam Kalite Yönetimi alanında kendi türünde eksiksiz bir dokümantasyon sağlamayı amaçlamaktadır.

Anahtar Kelimeler: Yüksek Öğretim, Kalite, Toplam Kalite Yönetimi (TKY), Süleymaniye Üniversitesi.

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I would like to thank my friends for accepting nothing less than excellence from me. Last but not the least, I would like to thank my family: my parents and to my brothers and sister for supporting me spiritually throughout writing this thesis and my life in general.

DEDICATION

I dedicate my thesis work to my family and many friends. A special feeling of gratitude to my loving parents, whose words of encouragement and push for tenacity ring in my ears.

To My sisters and brothers who have never left my side.

I also dedicate this thesis to my friends and who have supported me throughout the process.

To my dearest wife, who leads me through the valley of darkness with light of hope and support?

Twana Mohammed

Researcher

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INTRODUCTION

The process of determining quality in education is a monumental exception considering the underlying beneficiary is us, Humans. It is the quality of education that shapes incessant wealth and security of both societies and their people (Babbar, 1995). What is really the relevance of education for the evolution of brilliance and proficiency of a person that will lead to a progressive economy should not be subverting. This has used a powerful scheme for the improvement of higher education in almost all countries all over the world.

The higher educational system was proven effective in producing remarkable professionals to rule the nation in the future. But then, quality improvement is a constant process. Thus, perception on index rate and execution is necessarily precedent (Murad & Rajesh, 2010).

In order to enhance quality service, educational institution needs to know the necessities. These necessities, must be understand the essence of the characteristics. However, people foresee quality variously. Owlia and Aspinwall (1997) specify that in order to give verdict to quality, and correspondingly improve quality, it is vital to find out the characteristics of quality. Thus, it is crucial to determine the characteristics of quality for the measurement of the education process (Cheng & Tam, 1997).

TQM means handling of all the components of organization principles and procedures, patterns, arrangement, and all those who are affected in any way with the quality of the product or service (Stanciu, 2003). The main objective of TQM is to generate within the organization an environment in which all the assets are used ingeniously and effectively in order to provide quality service the institution needs to adapt in this fast paced world (Vinni, 2011).

TQM has been acquired as a management epitome by many organizations worldwide. Quality movement started with quality improvement project at manufacturing companies. But afterwards it dispersed to other service organizations including banking, insurance, nonprofit organizations, health care, government and educational institutions. TQM molds rooted on imparting of prime instructors, more often than not, demands a number of rules such as cooperation, top management leadership, customer focus,

employee engagement, consistent advancement tool, trainings, etc. (Murad & Rajesh, 2010).

The higher education sector at both government and institution level has been progressively introducing high quality management systems over the last two decades, the urge for accurate quality measure and security methods has been increased boost swiftly. Most especially in the USA and Europe, as well as in the Middle and Near East, Africa, China, South East Asia, the UK, Australia and New Zealand (Srikanthan & Dalrymple, 2003; Haug, 2003; Materu, 2007; Brookes & Becket, 2007).

At the same time, huge funds from governments makes it very crucial for those who handle education to guarantee that education provided in schools, universities and institutions of learning will be fruitful.

Furthermore, some other circumstantial demand called for more competent and exceptional quality of learning. These consist of developing surroundings in the figure of students, intensifying clash in higher education institutions, intensive challenges to students, and more adaptable programs for both in undergraduate and graduate level (Becket & Brookes, 2006).

Nevertheless, the education sector is not completely comfortable with the TQM method. Schools thought that TQM methods are not suitable for them having the fundamental concept of "Customer Satisfaction" they felt uneasy with the thought of them just pleasing their students who are their valuable customers (Barnard, 1999). Alternatively, schools can use the quality method such as the European Foundation for Quality Management (EFQM) excellence model, ISO 9000, Malcolm Baldrige National Quality Award to boost-up the students' performance. Even the most known service quality procedure, SERVQUAL (Parasuraman *et al.*, 1985; 1988), is also used to calibrate the quality in the education context. Models and concepts, such as EFQM, Singapore Quality Award (SQA), School Excellence Model (SEM) and Malcolm Baldrige National Quality Award (MBNQA), are widely used to educational institutions.

These posers adopt the methodology of TQM which has been adjusted for the school environment. Most schools and universities recognize the welfare of these quality models, and comprehensive research has been done in this area to investigate the school performances in relation to the quality management philosophy.

This has led to a substantial deliberation within academic institutions on the essence of such systems to higher education. Antagonist aim on concerns about the parameters to academic freedoms, risk averse processes that may restrain diversity and the evolution of managerialism, or the bloom of administrative control, when in fact advocates alluded the advantage of potent change management, constant progressive cycles, higher academic standards, increased staff and students' fulfillment and cutting edge planning (Hoecht, 2006; Mizikaci, 2009; Williams, 2009).

This research aims to determine how quality is acknowledged by diverse groups of people, namely the students, parents, faculty members and employers, regarding the effectiveness of TQM in Higher Education. The perception acquired from the study will configure the benchmarking with TQM methods which will lead to focus the general principles of TQM. It will also stimulate the question on how these methods can be used to boost the quality of an academic institution, which is the primary purpose of this work.

LITERATURE REVIEW

Due to the lack of studies about the TQM implementation locally, there are studies about some Iraqi universities that have differentiated adoption and implementation of TQM. *Sohail and Sheikh (2004*) addresses a business school known as The College of Industrial Management (CIM) which has implemented a quality system and has gained accreditation by The International Association to Advance Collegiate Schools of Business (AACSB).

Consequently, the paper discussed the processes and procedures carried out by CIM for developing the quality system to gain the accreditation at the behest of the college to be a leading provider in management education as well contribute to the development of the national economy.

Also, *Sohail and Sheikh* conducted a study in order to systematically assess the service quality issues from the Saudi business student's perspective and to examine the additional effect of the accreditation by the AACSB by collecting information on the degree of the service quality performance offered by the college. Hence, Sohail and Sheikh hypothesize that the accreditation should enhance the quality of service to the students.

In order to measure the student's evaluation of service quality, a survey was conducted based on the list of critical factors that used to evaluate the quality of service offered by the college. The study concluded that "contact personnel" is the most influencing factor in the students' evaluation of service quality, the second factor is physical evidence, then followed by Reputation, Responsiveness, Access to Facilities and curriculum.

Moreover, the students who are experiencing the service quality of the CIM before the accreditation felt that the service quality performance was better than expected through analyzing the views of students. The approach adopted by CIM may provide useful guidelines for many HEI in the Middle East region as well as across the globe.

According to *Alsuhaimi (2012*), a quantitative study was conducted to explore the implementation of TQM and its practices in the faculty of education in King Saud University and giving a picture of the present situation of the quality system. Consequently, Alsuhaimi formulate the study hypothesis as “long-term TQM adopters have significantly higher total productivity than short-term TQM adopters.” The data

was collected from 125 faculty members of the education faculty, through a structured questionnaire.

Results were obtained by performing statistical tests including reliability test, analysis of modifications, correlation, and regression analysis. The study showed that long-term TQM adopters have higher means in all TQM practices, which are Customer focus, leadership, design quality, strategic quality planning, people participation, Fact Based management and continuous improvement. Hence, this result provides general support for the relationships among the length of TQM implementation and quality management practices. TQM practices are correlated significantly with productivity, due to the correlation analysis, which presented that customer focus, design quality, and person participant has the stronger correlations with productivity.

Alsuhaimi mentions the following recommendations: these TQM practices must be implemented in educational institutions in order to increase its faculty performance as well as institutional progress, Policy makers should look after the possibility of practices TQM, it may have an influence on the achievement of the faculty which in return increase the level of education and research within the university and in the country as a whole.

Aldaweesh and Alkaraghouli (2013) study aimed to investigate and discuss the level of awareness for the TQM concept and tools in the Iraqi & Kurdistan region universities also provide a deeper understanding of TQM's developments in those universities. Data from this study will offer assistance to the Kurdistan region universities in applying and utilizing the TQM concepts with the better leadership practice. In order to accomplish the study objectives an interpretive multiple case studies were used. Aldaweesh and Alkaraghouli in the first point concentrated on the importance of exploring the relevant review of TQM and Leadership practices and discussed the factors of both TQM and Leadership Styles in relation to HE.

In addition, a conceptual Framework for improving Kurdistan region universities was presented in order to provide the needs of higher education in the Kurdistan region universities.

Sajad Rahimi & Fateme (2012) stated that "Total Quality Management; a New Approach to the Business Operation Improvement", identified organizations need operation improvement and this has to be taken care by the managers as it is the

fundamental responsibility to improve the operation. It is believe that the Performance management systems are the cornerstone of human resource management (HRM) principles and are the basis for developing a systems approach to organization management.

Systems of controlling and evaluating the operation provide mechanism for arranging companies‟ strategies and activities implementation and it is considered that both quantitative and qualitative criteria's can guaranty the success in measurement. Total quality management (TQM) is not only a culture and philosophy, but also a guidance outline for the basis of permanent development. Implementing such strategies guide the organizations in a way that enable them to have the best operation on the controllable factors.

C. K. Annapoorani (2012) stated that parents, students, faculty members and employers understand the concept of quality with regards to higher education in different ways. Parents view quality as relating to input (e.g. ranking of the schools, reputations) and output (e.g. employability, academic placement). On the other hand, students saw quality as relating to the educational process (e.g. courses and teaching) and outputs. Faculty members perceived quality as relating to the whole education system (i.e. input, process and output). Employers saw quality as primarily related to the output (e.g. the skill set that the student brings to the workplace).

The distributions of the quality attributes in terms of input, process and output differ among the recipients of the service provided. Therefore, in order to meet the needs of each group, the university has to focus on all aspects of the education system.

Syed Sohaib Zubair (2013) suggested that fair Performance Measures should be developed and importantly implemented to evaluate performance of academic units and employees in the education institutes.

Institutions should use standard performance measures to evaluate performance of academic units. Following performance measures, a fair reward and recognition mechanism should exist in order to keep employees motivated and encouraged. Employees should be treated as the organization’s most valuable and long-term resources, that are worthy of receiving necessary education and training in order to achieve the university’s vision.

Adequate resources must be allocated for training of both teaching and nonteaching faculty in order to improve the quality of education and in order to improve administrative processes.

Abdulraheem M. A. Zabadi (2013) concluded that higher education has been challenged to continue improving the quality of academies; increasing participation by all sectors of society; and by a new set of cooperative relations and partnerships between higher education and all stakeholders.

Colleges and universities more concerned than others, so they must become more innovative leading to quality institutions of knowledge creation, and being to increasingly higher standards by the many groups to which they provide programs and services.

Higher education institutions should more and more take in to account customers perception, especially students. In this way, it becomes clear that it's necessary to spread professional management principles in the higher education institutions, which no doubt suggests a boarder understanding concerning a service provider organizations.

Figure 1: The conceptual framework of total quality management in higher educati

CHAPTER I

CONCEPTIONAL PERSPECIES

1.1 The TQM Concept

Total Quality Management (TQM) is a management approach that seeks to achieve and sustain long-term organizational success by encouraging employee feedback and participation, satisfying customer needs and expectations, respecting societal beliefs and values, and obeying governmental laws and regulations
(Charantimath, 2003).

Another TQM definition that carries the same meaning was introduced by Corrigan (1995) who defined TQM as a "management philosophy that builds customer-driven learning organizations dedicated to total customer satisfaction through continuous improvement in the effectiveness and efficiency of the organization and its processes" (p. 61).

According to Wilkinson and Witcher (1991), TQM is composed of three terms: Total: meaning that every person is involved including customer and suppliers, Quality: implying that customer requirements are met exactly and Management: indicating that senior executives are fully committed.

TQM is more than a management philosophy; it can be considered a convenient framework used in and by organizations to guarantee a systematic and permanent optimization of the added value in order to maximize the realization of their aims.

As a consequence of this proactive approach, all primary, supporting and managerial processes have to be designed in a manner that ensures an optimal (perceived) quality for customers, employees and other stakeholders (De Knop, Van Hoecke, & De Bosscher, 2004).

A number of researchers (e.g., De Knop et al., 2004; Kolarik, 1995; Mawson, 1993; Peters, 1984; Talib, 2013) identify three fundamental components of TQM, (a) focus on customer satisfaction, (b) continuous improvement, and (c) total involvement and commitment. Peters (1984) describes these components as necessary skill packages to move towards an effective, market-oriented (service) organization.

However, analyzing recent TQM programs in more detail, some other common features can also be distinguished (De Knop et al., 2004).

These are well described by the "Total Quality Management Inventory" which assembles the essential principles of quality programs of Crosby (1979), Deming (1982) and Juran (1989). They include: focus on the customer, strategic planning, quality measurement and analysis, quality assurance, quality and productivity improvement results, top management leadership and support, and employee training and teamwork.

1.2 Total Quality Management

TQM has many definitions. Masters of the TQM like Deming, Juran, Crosby, Ishikawa and Feigenbaum characterized the theory in various ways but still the significance and soul stays the same. According to Deming, "quality is a consistent quality development procedure towards anticipated degree of consistency and perseverance. Deming also describe 14 fundamentals of quality management to boost project outputs and achievement of the organization.

Juran identified quality as "fitness for use". According to him, each individual in the organization should participate in the exertion to make products or services that are fit for use. Feigenbaum defined total quality as consistent work procedures, beginning with customer necessities and finalizing with customer's satisfaction (Evans & Dean, 1999). Crosby defines quality as a correspondent to demands.

He focalizes on zero defects and setting things straight by doing it correctly the first time. Ishikawa (1985) also accentuate on the relevance of total quality control to boost organizational performance. According to him, quality does not mean the quality of product only, but also of the quality of management, or the reputation of the company.

Definitions of quality has been altered with the transition of time, modification of customer's needs and demands. But the vitality has more or less been progressed to resolve the issue, compliance to standards for customer satisfaction. With management routine getting complicated, attacks to managing quality in operational areas are becoming unmanageable.

Universities which have victorious outcome with TQM principles have customer and quality integrated in their corporate scheme (Jha and Joshi, 2007). Any university is a

system of interconnected units. For TQM to be victorious, all of the elements within the organization must be conjointly engaged.

Some characteristics of TQM are considered to be fundamental: modification, customer preference, communication, consistent improvement, restorative measures, the organizational structure of network type in the process or case management, creativity, IT, organizational culture, team and future orientation (Vinni, 2011).

While the critical factors are the basis for transformational preference to produce a substantial advancement culture for consistent competitive advantage.

But basically, the main objective of TQM is to generate within the organization an environment in which all the assets are used ingeniously and effectively in order to provide quality service the university needs to adapt in this fast paced world. TQM is a way of managing to amend the efficiency, viscidity, adaptability and aggressiveness of a business in general. As specified by British Standard Institution, TQM is compose of a "management doctrine and company patterns which intent to rein the human and material resources of an organization in the most efficient way to attain the goal of the organization" (Zakuan *et al.*, 2012).

1.2.1 Importance of Total Quality Management

In an aggressive environment, organizations are compelled to develop and apply methods within global context. TQM has been distinguished as a management doctrine and a belief that has support many organizations progress towards reaching splendid businesses.

TQM aids in making a culture of trust, cooperation, teamwork, quality-mindedness, eagerness for consistent advancement, continuous learning and eventually, a working environment that imparts to a firm's success and existence (Yusof & Aspinwall, 2000). TQM is the process of modifying the essential culture of an organization and channeling it towards superior product or service quality (Gaither, 1996).

It also focuses on customer satisfaction through a concept of "continuous improvement" that will lead to joyous victory. As a general management TQM is identified as philosophy and a set of instruments which grants an institution and university to follow an outline of quality and a way for achieving quality, with quality being a consistent

development determined by customers' satisfaction with the services they have experience (Michael *et al.*, 1997).

TQM has been greatly acknowledged and victoriously applied in many small and large organizations, providing them the advantage in international as well as local competence through the creation of high quality products or service to fulfill the customers demand (Dale & Plunkett, 1990).

As Lakhal *et al.* (2006) indicate that organizations with TQM systems in place coherently surpass the industry criterion for return on investment. While, Saad and Patel (2006) reasoned that by enforcing TQM, the companies acquired in-depth discernment of the key element related with the quality supply chain function practices in Indian automotive industries. They also proved that TQM in supply chain is significant to ameliorate key elements such as quality, delivery and lead-time. Besides that, Jun *et al.* (2006) showed that the firms with human resources that concentrate in TQM methods can raise employee satisfaction. The striking improvements in employee satisfaction resulted to a higher level of customer's devotion.

1.2.2 Important Factors in Total Quality Management

TQM is a cooperative, standardized approach in preparing and administering a steady organizational improvement process. Its manner is focused on surpassing customers' expectations, defining the issue, building trust and devotion, and advocate open decision-making among employees. There are five major steps to TQM, and each are vital to have a victorious implementation (Napierala, 2012).

1.2.3 Total Quality Management and Types of TQM

However, defining the concept of quality is considered as an initial objective for HEIs, but it seems that concentrations are mostly in achieving this objective, rather than to focus for finding specific definition. Therefore, this question will come to mind, how can we gain the quality of higher education? Over the past few decades, the quality gurus Crosby (1979), Deming (1986), Feigenbaum (1983), Juran (1986) and others have developed and advocated certain instruction in the area of quality management. Their approaches into quality management provide a good understanding of quality management principles.

However, quality issues are considered as a basic part of the activities of an increasing number of private as well as public companies, organizations and institutions. Based on this thought, one philosophy has emerged in the concepts of quality and management called Total Quality Management, (TQM).

There are different opinions about TQM, some people see it as an absolute mean to reach competitiveness and some others see it as a management vogue, however there are some reasons for these differences in perspectives, Becker (1993, pp. 32-3), Ghobadian and Gallear (1996, pp. 83- 106*)*. Hellsten and Klefsjö (2000, pp. 238-44) believe that these different ideas have formed because the gurus who are seen as fathers of TQM, do not like the concept. Beside there are different names for almost the same idea, and finally there are many vague descriptions and few definitions of what TQM really is, this reason is the most severe one.

In the other word, they definitely believe that there are many descriptions of the total quality management notion in literature, but few definitions.

Therefore, defining of what TQM really is does seem to be a tough job by itself. For instance, Okland (1989) says TQM is "an approach to improving the effectiveness and flexibility of business as a whole", and some other definitions in this context are:

• A set with improvement tools useful in an organization.

• TQM is a management philosophy.

• TQM is a program for changes based on a company's culture.

• TQM is a management system.

Recently, one definition has been introduced in this context from Hellsten and Klefsjö (2000, pp.238-44). They see TQM as a management system, which is consisting of three interdependent components: values, methodologies, and tools and the aim is to increase internal and external customers' satisfaction with a reduce amount of resources. Since, in this work, we have management system view and this work will be based on this approach, this view of TQM will be discussed in the next section in more detail.

Nevertheless, the origins of TQM in business and industry, and its successful implementation in most cases as a universal remedy have jointed to bind its acceptability to HEIs, and many articles have been written on the subject. In fact, there are many advantages that product-oriented businesses and service oriented

organizations like HEIs both can rely on to pursue Total Quality Management program, Ramona and Sower (1997, pp. 104-120).

However, for introducing a TQM approach in an organization or institution we prefer to classify it in two phases. The first phase can be defining of what TQM really is, and the second phase is about the implementation of this approach. In fact, without having a comprehensive understanding of the whole concept its implementation is not recommended, and it will cause failures. Therefore, in the following sections, the researchers will try to define the concept of TQM thoroughly from a specific perspective, and then a model for its implementation will be described.

1.3 Definition of Total Quality

Quality has many definitions and concept; Some defined quality as excellence and superiority, others sees that quality is an assurance that there are less defects in services or products, while other assume that quality is about products features. Quality may also link to avoid losses accrued from failure.

Therefore, Total Quality (TQ) concept can take many forms that contain different attributes, which are changing depend on organization goals.

TQ refers to the management method that, which will enhance the quality and productivity in organizations. It is an annual quality process, which moves towards the perfection of the vision of the organization. TQ means handling all the component of an organization, and components of all those who are affected with the quality of services.

The definition of Total Quality Management terms by concept is described below:

1) Total: all organization components are involved in defining and knowing what the customer needs and expectations through cooperative or individual efforts to achieve the organization goals.

2) Quality: achieving higher expectations and desires of customers and consumers.

3) Management: development of the organization administrative chart, and capable leaders who are capable of continuous improvement and maintain a high level of quality.

Therefore, TQM is considered as a management philosophy based on concepts of modern philosophies and basic management methods, innovative efforts and specialized technical skills in order to raise performance level and continuous improvement. The International Organization for Standardization (ISO) defined TQM as a "management approach for an organization, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction, and benefits to all members of the organization and to society". The British Standard Institution (BSI) defines quality as “the totality of features and characteristics of a product or service that stands on its ability to satisfy the stated or implied needs”.

Quality has five different approaches, which are:

1) In terms of excellent and high standards.

2) In terms of consistency.

3) As a fitness for purpose.

4) As a value for money through efficiency and effectiveness.

5) As transformative in terms of qualitative change.

The quality movement started with quality improvement project in manufacturing companies, subsequently it started to spread to other services organizations including banking, insurance, nonprofit institutions, healthcare, government and educational institutions.

Therefore, the main concept of TQM is changing from correcting problems after an incident to prevent it from happening from the beginning.

Quality requires a model for continuous improvement in designing, products and services, also for planning and changes implementation. This model called Quality Cycle or Deming Cycle, which also refers to Plan-Do-Check-Act (PDCA) Cycle.

It's basically a four-step model for carrying out changes, and repeat over and over for constant improvement; it will be will discuss later in some details in the model phase.

1.3.1 Theoretical Frame of Reference

In this chapter, the theoretical frame of reference is discussed. Defining some basic concepts such as Quality, Total Quality Management will cover the frame of this

chapter. However, these notions should be clarified in the context of higher education, which is mainly in focus in this work. Therefore, providing a comprehensive understanding of all named concepts in the context of higher education will be the issues under discussion in this chapter as well as some other terms.
In addition, after defining a specific TQM approach a model for implementation of TQM will be discussed.

1.3.2 Quality

The starting point for this work will be surly the definition of the quality and accordingly its definition in higher education. In the context of quality, there are abundant definitions; however, still some gurus are looking for a unique definition, which can cover different perspectives. Some of these definitions are as fallow:

• "The degree to which a set of inherent characteristics fulfills the requirements, needs or expectations that are stated, generally implied or obligatory" (ISO 9000:2000).

• "The lack of quality is the losses a product imparts to the society from the time the product is shipped" (Genichi Taguchi).

• "Quality should be aimed at the needs of the customer, present and future" (Edwards Deming).

• "Fitness for use" (Joseph Juran).

Mikel Harry from Six-Sigma Academy defines:"quality is a state in which value entitlement is realized for the customer and provider in every aspect of the business relationship". In addition to these definitions, Bergman and Klefsjö (2003) have defined quality as:"The quality of a product is its ability to satisfy, or preferably exceed, the needs and expectations of the customer".

Each of these definitions comes from different perspectives and emphasizes on different issues. For instance, Crosby has defined quality as "conformance to requirements" that has a producer perspective, and Deming's and Juran's definitions have a user-based perspective.

Although, almost all of these definitions are used for manufacturing products and services, since no one has yet satisfactorily defined or measured quality, the marketing of quality remains problematic (ibid).

Nevertheless, here the definition of quality may be differing from those described above, since we have a higher education perspective to the concept of quality. In section 2.2, there will be some discussions about quality in higher education.

1.3.3 Quality and Success

In this section, the discussion will be how the quality can causes success in every business or organizations tasks. According to Bergman and Klefsjö (2003), quality will bring many profits to every organization or business which some of them will be discussed here.

First, good quality will increase customer satisfaction and customer loyalty. Moreover, it causes cost reduction due to waste and rework and leads to higher productivity.

Furthermore, another objective of the quality work is to increase the productivity, and in higher education, productivity will have significant effect on their ability to offer more services, since the amount of financial support coming from governments is going to decrease.

Therefore, in today's higher education market, it is very important for HEIs to have productivity, and they must have plan for reducing different kind of waste and reworks and as a result reducing the cost of education. In addition, improved quality increases the level of success and prosperity in an organization.

This success can be appeared as being in a stronger market position, making the lead times shorter. Besides, employee turnover and sick leave rates will decrease and the organization will have the ability to provide more job opportunities for people and more opportunities for capital release. Finally, improved quality leads to improved profitability and the higher ability in attending competition, while poor internal quality leads to different problems in production, longer lead-time and at last customer dissatisfaction.

When customers are dissatisfied, profitability decreases. High internal quality is a necessity for Just in Time, Bergman and Klefsjö (2003).

1.3.4 Quality Dimensions

It is worth here to describe the dimensions of the quality, briefly, and to some extent to distinguish the quality dimension in higher education. In fact, many offering contain both hardware component and a service component, while quality dimensions of goods and services have been developed separately. There are some of quality dimensions for goods:

• Reliability, in the context of the quality, refers to the occurrences of a problem for a specific product and the probability of which that problem may occur.

• Performance refers to the important criteria of product for the customer such as useful life, and speed.

• Maintainability, that points out how difficult or easy it is to recognize, concentrate, delimit, and solve a problem.

• Environmental Impact is a measure of the influences of a product on environment. Emissions of a product and its recyclability are important in this dimension.

• Appearance, which relates to aesthetic appeal and aspects created at design time such as color and shape.

• Flawlessness, which means that the goods are not destroyed by errors and defects at the time of purchase.

• Safety that means the good does not have any damage to person or property and take in place some protective actions against destructions.

• Durability is mostly concerned about the usage, storage, transportation of that product without being destroyed or being failed.

In addition, there are some of the quality dimensions for services:

• Reliability in the context of quality dimension for services means the fitness to operation, which is including the accuracy of information and procedures and commitment to what you have pledged.

• The main concern of credibility is the capability of relying on suppliers.

• Access is related to facilities for making contact with the suppliers and availability of suppliers.

• Communication points out to be in touch with the customer in an explicable manner.

• Responsiveness refers to being interested in assisting the customer.

• Courtesy refers to the fact that how suppliers behave to their customers.

• Empathy, insists on understanding the customer's condition.

• Tangibles refer to the appearance of equipment and physical environment of service execution.

However, clarifying a list of quality dimensions can help us in product planning. Each product and service must meet its own special customer needs and expectations.

The most important aspect is to consider that the importance of different dimensions may vary with the product.

Nevertheless, the quality dimension, which is taken into consideration in higher education, is the service quality.

In fact, in the context of quality of higher education we must keep in mind that students are not the products and the education is the product, and the quality of services, which HEIs (Higher Education Institutions) provide for their students to improve their knowledge and education, are playing the vital role in higher education, Bergman and Klefsjö (2003).

1.3.5 Quality of Higher Education

In fact, main concern in this work is about definition of quality of higher education that has proved to be even more difficult rather than manufacturing products and services. There is no doubt about the point that quality plays an important role in today's higher education, Owlia and Aspinwall (1997, pp. 527-543).

Feigenbaum (1994, pp. 83-4) believes that in "invisible" competition between countries the quality of education is the main and important factor, and this is because quality of products and services is defined by the action, decision-making, and thoughts of managers, engineers, workers, and teachers in the quality work.

Like other businesses, in today's market, education and in particular higher education has entered to commercial competition, which is due to economical forces, Seymour (1992).

Freeman believes that this competition is firstly because of the improvement of the global education market, and secondly is due to the reduction of the governmental funds that encourage organizations to look for some other financial sources, Freeman (1993).

Therefore, identifying what does the quality mean in higher education as the first phase of quality work seems to be essential. However, still there is no one unique definition about the quality of higher education, there are plenty of these explanations that in somehow have industry perspective.

Furthermore, Cheng and Tam (1997, p. 23) suggest, "Education quality is a rather vague and controversial concept" and Pounder (1999, p. 156) argues that quality is a "notoriously ambiguous term". Nevertheless, some other gurus in the context of quality in higher education prefer to correct those definitions coming from industry and use the revised version of definition of quality in higher education. For instance Campell and Rozsnayi (2002, pp. 19–20), have defined the concept of quality of higher education in several ways related to industry:

_**Quality as excellence:** this definition is considered to be the traditional academic view that holds as its goal to be the best.

_ **Quality as zero errors:** this is defined most easily in mass industry in which product specifications can be established in detail, and standardized measurements of uniform products can show conformity to them. As the products of higher education, the graduates, are not expected to be identical, this view is not always considered to be applicable in higher education.

_ **Quality as fitness** for purposes: this approach requires that the product or service has conformity with customer needs, requirements, or desires.

_ **Quality as transformation:** this concept focuses firmly on the learners: the better the higher education institution, the more it achieves the goal of empowering students with specific skills, knowledge and attitudes that enable them to live and work in the knowledge society.

_ **Quality as threshold:** defining a threshold for quality means to set certain norms and criteria. Any institution that reaches these norms and criteria is deemed to be of quality.

_ **Quality as value for money:** The notion of accountability is central to this definition of quality with accountability being based on the need for restraint in public expenditure.

_ **Quality as enhancement or improvement:** This concept emphasizes the pursuit of continuous improvement and is predicated on the notion that achieving quality is central to the academic ethos and that it is academics themselves who know best what quality is at any point in time.

Despite of these different definitions on quality of education, quality of output and reputation in academic research are most likely to be valued in HEIs. However, quality systems adapted from business and industry operations need to be reoriented, and reinstalled for higher education conditions to turn the focus from the management-based to the education-based practices, according to Mizikaci (2006 pp. 37-53).

In this circumstance, Tribus (1994, pp. 37-40) believes that we must keep in mind some differences between education and businesses, which some of them are as follows:

• The school is not a factory.

• The student is not a "product".

• The education of the student is the product.

• Successful completion of the product requires the student to participate as a worker, co-managing the learning process.

According to Kwan (1996, 25–35), the differences between education and industry are in four ways, objectives, processes, input and outputs. For industries, the measure in which they use as an indicator of the effectiveness of organization is the profit, while the objectives in education are not simple.

In fact, the objectives of every higher education institution should cover the answer to this question precisely, that what should a good education provide for learners? Tribus (1994, pp. 37- 40) believes that the objectives of every school, or university, should be to give each student, opportunities to improve in knowledge, know how, wisdom, and character. The first concept enables students to understand, and the second one facilitates them to do, accordingly the third one enables students to set priorities, and finally the character provides the possibility for them to cooperate, to persevere and to become respected and trusted members of society.

1.3.6 Customer of Higher Education

However, it is important to identify the customer of higher education; on the other hand many higher education institutions think that it's really big challenge to do so, Lawrence and Robert (1997, pp. 279-91) . According to Owlia and Aspinwall, (1998, pp. 501-18), "From different customers of higher education, students were given the highest rank. The remainders, in rank order, were employers, society, faculty, and families".

The philosophy behind ranking was that since needs/expectations of different groups of customers may differ or even oppose each other, giving a priority to them is essential.

Michael and Sower (1997, pp. 104-120) claim that no university or college wants to have a specific definition of customer in higher education, while they see it even worse to define students as customer of higher education.

This point serves a sticky problem for administrators and HEIs. Most faculties do not agree with the point to define students as customer of education, since it refers to assumption that "customer is always right".

Michael and Sower (ibid) believe that quality of education does not mean necessarily to give students whatever they want. In fact, their point of view comes from the point that students are mostly engage with short-term satisfaction and students are just concern about passes the classes and graduates, which is in the contrast of real learning and long-term purposes of education.

According to Venkatraman (2007 pp. 92-112), customer in higher education must be regarded as stakeholders, which in this case we take into consideration both internal stakeholders like employees and external stakeholders such as students and society.

1.3.7 Total Quality Management in Higher Education

Establishing quality in education is an important funding since the major receiver is humans. Education quality is what shapes continuous wealth and wellness of societies. Education has an impact on evolution, intelligence, and expertise that will lead to an advancement in life. Almost all countries have a huge impact from the

improvement of higher education, which is effectiveness in producing Reliable specialists to rule in the future.

Quality improvement is a continuous process, and in order to enhance quality, educational institutions need to implement TQM strategy. Since the higher education has to be about quality and excellence higher education institutions should implement global quality management systems, which is in this case TQM.

TQM is utilized in academic settings, which provides guidance in educational institutions in order to continue improvement through the entire educational process.

TQM intervention had to occur in the educational process with the involvement of all parts. Students, parents, teachers, leaders, systems, stakeholders, and relationships are considered as parts of the educational process. In many cultures, the main issue in quality management is being effected by the higher education institutions old plans. While, people and growing environments mentioned as relations that increase the importance of quality.

The expanding of education worldwide, students studying in different countries are causing some concerns to educational institutions and universities, especially HE sector. The use of new teaching and learning methods, changing forms of education delivery, and course content, are all in the concept of quality which has become an essential component of the educational process, continuous improvement and self-evaluation for its success.

In enhancing TQM in the educational process, HE institutions have to consider the key elements of TQM in order to improve the quality, which are leadership, continuous improvement, employee participation and empowerment and information management.

Leadership appears to be a major element in the TQM implementation; top managements should be committed and involve in creating and supporting a customer focus and high expectations, and defining goals. Information management able to assist the decision makers by providing the fast response and the best analysis through good managing of using data and information.

Human resources examine staff recruitments and progress to compare it with the institution objectives while staff needs are being took cared by providing them with a healthy working environment to ensure their satisfaction and participations. As an extension Educational management inspect the process's aspects, including education

design, learner-focused approach, education delivery, services and operations of the HE institution.

Therefore, involving all elements with awareness, commitment, motivation and continues measuring through implementation of TQM, the educational process will be effective and universities ranking and the quality of the graduates will enhance. Moreover, universities will create competitive HE environment.

TQM has been known as a management policy that supported many institutions' progress towards their goals. TQM led to a culture based on trust, collaboration, teamwork, endless quality, enthusiasm for consistent progress, continuous learning and eventually a healthy environment to work at and lifelong learning.

It also focuses on customer satisfaction, which is the student in this case, through a concept of "continuous improvement". TQM commit HE institutions to follow an outline to achieve quality.

TQM in HE has a huge effects, mainly on students where they are becoming in a healthy constant condition, willing to collaborate and determined, with the support of their society, environment is also becoming free from harm and maintains enough resources and abilities, contents and materials are showing in a significant syllabus, applying methods that are student-centered training techniques and enabling evaluation to promote education and lower differences, Guaranteeing intelligence outcome and capability that reach the national target for education.

TQM has become well adopted by educational leaders while universities are also adopting quality measures.

Therefore, with the continuous and fast economical and educational development in the Kurdistan region, has forced universities to implement modern management styles including TQM to achieve continuous improvement.

Highest ranking universities in Iraq and Kurdistan region are adopting TQM concept as the main methodology in ensuring quality, some of them even have specialized teams and head departments to manage TQM.

1.4 Advantages and Disadvantages of TQM Strategies

According to Kelchner (2008), TQM is a system of constant development that includes all workers from top management down to production line workers. The focal

point of the program is to upgrade customer service and lessen waste in business. Quality development team use problem-solving methods and research to be knowledgeable and decrease weaknesses in the company or institution. But of course in every system or program there would always be advantages and disadvantage. She interprets TQM strategies as follows.

1.4.1 Production disruption

Executions of TQM system in an institutions demands comprehensive training of employees. The employee training compose of information in problem solving techniques and the tools to appraise a procedures and verify deficiency such as statistical process control, Pareto diagrams and brainstorming techniques. During the initial training period, productivity can drop.

Communication for quality developing teams also takes workers away from their duties, which also lessens productivity. While the development do weaken lead time, eliminate waste and improve productivity, the beginning stages of implementing TQM in an organization can weaken the worker productivity.

1.4.2 Lower production cost

TQM program eradicate defects and waste, which lessen production costs in a business. As team members assemble to recognize faults and issues are spotted and sorted quicker than when ousting weaknesses in the business, the company continues to enjoy lessen costs and higher profit. Quality development teams can remove defects (zero defects), lessen lead time and verify redundancies in the production process that can significantly add to the profit the company earns.

1.5 Management System View of TQM

In this section, most effort is to define the concept of TQM from a specific perspective and its related terms, and the aim is to provide a comprehensive understanding of this concept. Hellsten and Klefsjö (2000, pp. 238-44) believe that despite of many efforts for defining TQM, the absence of a clear definition is still obvious. In paper titled "TQM as a management system consisting of values, techniques and tools", they have discussed that the concept of quality has mostly clarified as some form of "management philosophy".

This management philosophy is based on a number of core values, which differ between authors and can change time to time, see Cameron and sine (1999, pp. 7-25). Some of the most common ones of these core values are customer focus, continuous improvement, process orientation, every body's commitment and so on.

However, what they call here as core values almost named principles, dimensions, elements or cornerstones of TQM in literature. They believe that this term will emphasize that statements found for core values should work together to form the culture of the organization, which also means that they are basic notions. Hellsten (1997), and Cameron and Sine (1999, pp. 7-25) have presented a more detailed discussion about core values connected to organizational cultures and TQM.

Although, often TQM has been exemplified by quality award's models such as Malcolm Baldrige National Quality Award in the USA (NIST, 1999) or the European Quality Award established by the European Foundation for Quality Management (EFQM), the relation between these concepts is considered as being diffuse by Hellsten and Klefsjö (2000, pp. 238-44). They also believe that these award models and their criteria have had more effects on the implementation of TQM than the academic articles.

However, the number of core values differs between authors and quality award's models, Hellsten and Klefsjö (ibid). In one literature study Hellsten (1997) has shown that in most descriptions of TQM there are some common values such as focus on customers, management commitment, everybody's commitment, focus on processes, continuous improvements, and fact-based decisions.

For instance, Bergman and Klefsjö (1994) have defined some core values close to these values,where they have called them “the cornerstones of TQM”.Based on these facts, Hellsten and Klefsjö (2000, pp. 238-44) have defined TQM as something much more than core values, and to them it is a management system. A system in the sense of Deming, “A network of interdependent components that work together to try to accomplish the aim of the system”, Deming (1994, p.50), which one of the components is core values. Two other components are methodologies and tools that support the core values. In fact, definition provided by Hellsten and Klefsjö emphasizes that the concept of TQM, as a whole thought, is a combination of values, methodologies and tools, where they have jointed to accomplish higher customer satisfaction with less resources consumption, see figure 2. This whole concept can be taken to mean as a management system. Their interpretation from this system view is that techniques and tools support the values and together they form a whole. They strongly believe that this definition provides a comprehensive understanding of what TQM really is and assists organizations and institutions to implement it successfully. Moreover, since some organizations only select parts of the system, while there is no attention to how the values are supported and whether it is fitted to the culture, they have represented that this system view will decrease the risk of those selections. However, they have recommended that the work of implementation should be done in specific order and steps by steps, for superior outcomes.

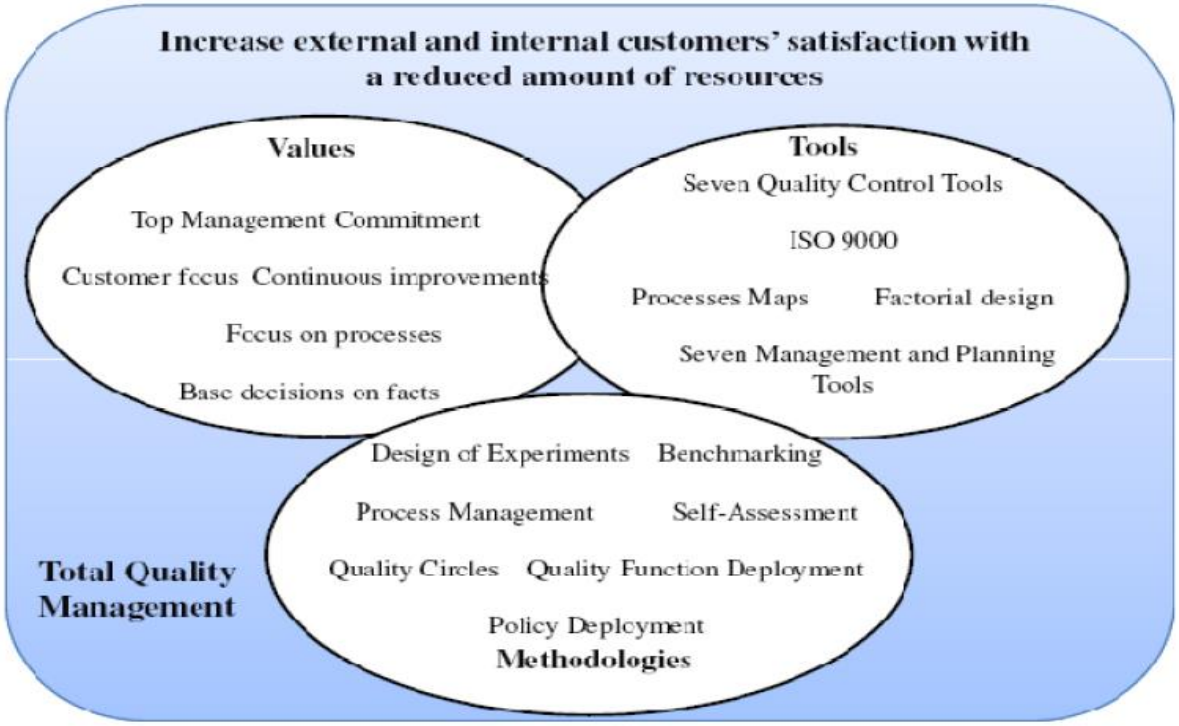

Figure 2: Components of Management System View of TQM

In the following parts, there will be more detailed discussions about some core values, methodologies and tools, which have been described above. In fact, among the existing core values, methodologies and tools the most important ones from authors' perspective and those that authors think that might be applicable in higher education will be elaborated here.

However, there is a need for further research in this context and there should be more investigations about how the chosen values, methodologies and tools can be employed in higher education sector.

1.6 The Core Values of TQM

As we know, quality issues are considered as an integral and common part between private and public companies and organizations. TQM is "a constant endeavor to fulfill and preferably exceed customer needs and expectations by making the costs lower, continues improvement, focusing on the processes, involving and committing everyone in an organization", Bergman and Klefsjo (2003).

In implementing the TQM in an organization or manufacturing company, leadership is the main issue.

The top management must consider the goals of the company, those actions that must take in place, quality financially, and resources (such as management resources) that are necessary for achieving the vision of the company, in all aspects of quality.

Hence, for improving the quality of an organization, commitment and knowledge of the leadership is the first step. After that, a culture must be existed based on some core values, which are:

• Customer focus

• Decisions based on facts

• Process focus

• Continuous improvement

• Commitment of everybody

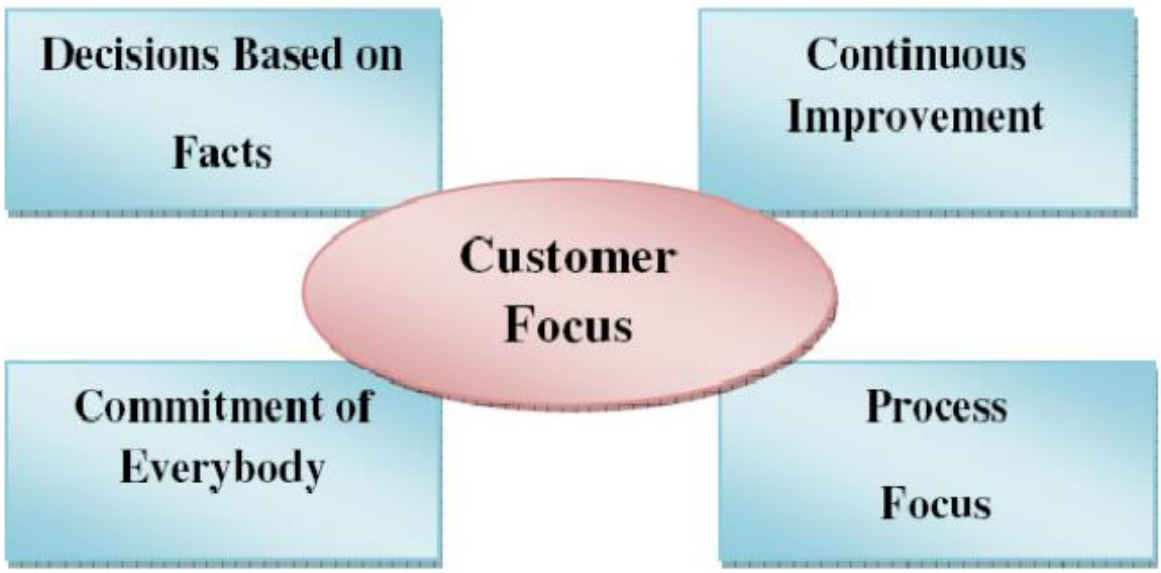

Figure 3: Display of Core values in Total Quality Management

These core values are interrelated, and effective and appropriate methodologies and tools must support them.

Customer Focus means that organization must know what customer requires exactly, and try to fulfill customer needs and expectations by producing the right product and service. Both external and internal customers must be satisfied with the organization. Although in total quality management the strong focus is on external customers, the

satisfaction of internal customers who are employees of the company must not be forgotten. In quality, progression satisfaction of employees is essential because in this case they do their job better and feel happy and motivated with their performance.

Decisions Based on Facts is about how an organizations' top management make their final decisions, and are these decisions based on relevant facts. For instance, in a university for developing a program, there must be sufficient knowledge about both student needs and society needs.

Therefore, the need for a systematic data collection about the needs, requirements, reactions, and opinions of the customer and society is unavoidable. In fact, for quality improvement and variation reduction we need to collect, structure, and analyze relevant numerical data and verbal information, hereby it does seem very important to use different quality control tools such as Pareto Diagram, Control Chart, and Histogram and Management Tools such as Affinity Diagram, Interrelationship Diagraph, and Process Decision Program Chart.

Process in an organization is "a set of interrelated activities which are repeated over time". Within every process, there are some well-defined inputs such as information and material and they will transform into outputs in the forms of goods and services for customers by allocating minimized resources.

Consideration of the process suppliers is another necessary performance to make optimal results in processes, which are satisfying customers. Three kinds of processes are available:

• Main processes are focusing on fulfilling the requirements of external customers by developing the product, production, and distribution.

• Support processes are focusing on providing resources for main processes and satisfying internal customers like recruitment and information processes.

• Management processes are focusing on making decisions through organizational targets and improving aspects in other processes.

Continuous Improvement in quality of products and services of the organization is necessary because, the demands of external customers of an organization increase

during the time. Furthermore, there are always some technological promotions as well as running new business activities, therefore organizations and businesses should all improve the quality of their products and services continuously.

Moreover, for attending in completion and being survived, a company must improve the quality of its products continuously. Continuous improvement emphasizes on improving products, processes, and methodologies while consumption of resources are minimized and fewer budgets are allocated to achieve higher quality.

In order to have a success in quality issues it is necessary to provide a situation that brings up participation of all parties due to customer satisfaction with a continuous quality improvement.

On the other words, the commitment of everybody in organization should be more in focused. Therefore, all the employees in a company must feel committed and responsible for doing the job in a good manner. For improving quality, it is a positive point to care of participation of all involved people and make them satisfied with their job condition.

Designation of responsibility and authority must be effectively in focused, in order to achieve the participation and commitment of all interested parties. In this context, we need to change vicious circles into good ones, see figure 4, Bergman and Klefsjö (2003). Currently, providing more job opportunities is not just the main concern, and creating meaningful and goal oriented tasks within great responsibility is desired.

High quality achievement due to job satisfaction not only is an important target but also is a vital means, indeed. To sum up, in the quality work, the participation of everybody is important and this includes everyone within the company and all suppliers of material and components.

This means that instead of having the suppliers, which offer lower price, in today's business, they preferably select to institute their connection with small number of suppliers; this will assist them to increase commitment, responsibility and quality

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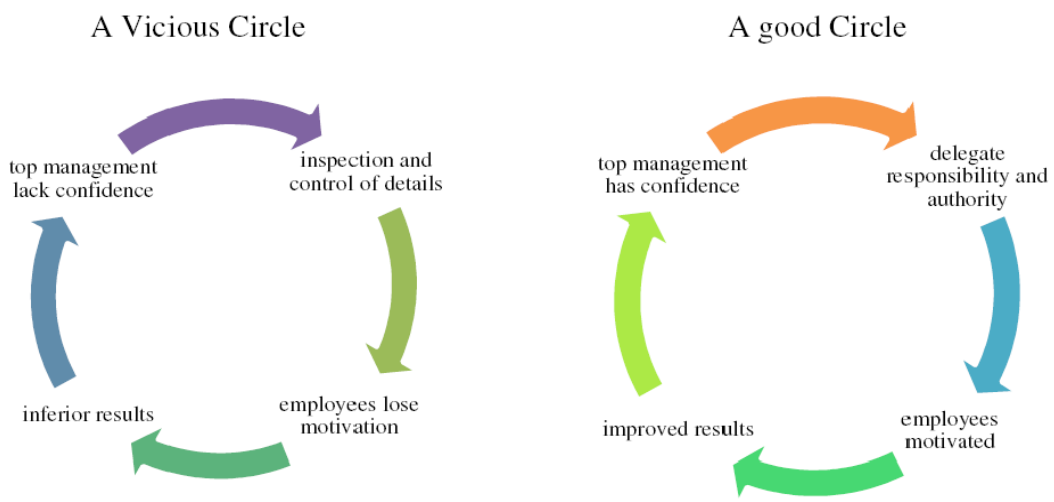

Figure 4: A vicious circle and a good circle, linked to effect of delegating responsibility and authority.

1.7 The Methodologies of TQM

1.7.1 Quality Function Deployment

In fact, the main goal for increasing quality of a product is fulfilling customer's needs and expectations and attracting more customers. By focusing on customer's needs and different competitors, quality function deployment was introduced by Shigeru Mizuno and Akao during the late 1960s.

Quality Function Deployment (QFD) is a methodology that steadily identifies customer needs and expectations on service specifications and design parameter and transfers these needs to service characteristics and additional to the service process.

Moreover, it is an efficient methodology for communication and participation. In this case, it needs group members to work together in order to achieve a fundamental basis for continuous and integrated service improvement.

To achieve and implement QFD, we have to follow four steps. First is doing a market analysis in order to understand customer requirements and expectations. Second is identifying and at the same time estimating the same time the competitors' ability to fulfill customers' expectations.

Third is recognizing key success factors of organization's product on the market. Finally, the fourth step is transferring these key factors in to product and process characteristics in relationship with design, improvement, and manufacture.

The objective of QFD is to interpret the expectations of customers into product and process specifications by continuously permitting the wants be replicated at every level of product improvement process.

In fact, the four phases of QFD are product planning, product design, process design, and production design.

In product planning phase, the needs of customers are transmitted to product's characteristics. Product design points out the optimal way of design, which exceeds the objective ideals.

In the phase of process design, the attributes of production functions and procedures for process control and development are recognized. Production design refers to designation of production instructions.

Another important concept in Quality Function Deployment is that in order to get successful in business objectives, satisfaction of both internal and external customers is necessary.

For instance, in an organization or company for product development, fulfilling the wishes of internal engineers, manufacturing workers, suppliers, business stakeholders, and end customers is vital.

Nevertheless, QFD in higher education institutions aims at satisfying all stakeholders' needs. Since external stakeholders of a higher education institution are first students, presenting high quality of training attracts more students and at last causes prosperity for that institution.

However, this methodology in higher education emphasizes on satisfaction of internal customers such as professors, workers in different departments of for instance a university, and client customer which is society, Bo Bergman, Bengt Klefsjö (2003).

1.7.2 Policy Deployment

Another concept which is applied in organizations and introduced in Japan is Policy Deployment. As a matter of fact, policy deployment includes systematic planning, utilizing, and observing management systems for improving organization presentation. Policy Deployment works on strategic objectives and daily control of the business to manage continuous improvement and reach business results. Akao (1991), figure 5, has established a general policy deployment movement.

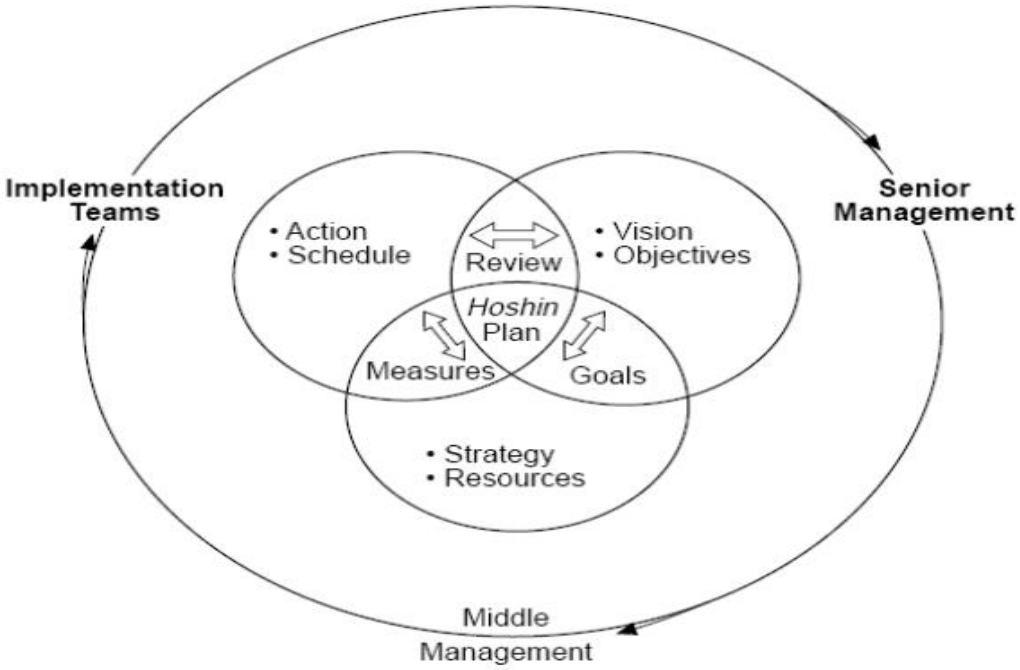

Figure 5. A general Policy Deployment movement by Akao.

Besides, policy deployment combines planning and implementation in a company in an efficient way. Many organizations use management by control strategy. Management by control considers problem solving rather than planning. Problem solving is necessary for short-term endurance, but it is not enough for long term development. Long-term improvement needs systematic management processes for scheduling, organizing, and performance monitoring indeed. Management by control focuses on problem solving, opinions and sense, while policy deployment focuses on planning, deploying facts and data, and complete communication.

Moreover, policy deployment emphasizes on teams and learning, whereas management by control considers individual work and training. Therefore, Policy Deployment is more efficient than management by control in most of the organizations.

To sum up, organizational learning, which is vital for competitive advantage, is prospered by using both Quality Function Deployment and Policy Deployment. Quality Function Deployment gains information on external customer needs and the processes and capability of the organization by customer research, investigation, and planning.

Policy Deployment provides the systematic feedback processes essential to continue learning until it becomes time to duplicate the Quality Function Process, depending on the forceful of the industry.

Sometimes, policy Deployment maybe introduced without a strategic planning. Quality Function Deployment or other strategic planning must have a controlled process for employment and management commitment in order to be useful, Bergman and Klefsjö (2003).

In higher education institutions, like other organizations implementation of Policy Deployment and QFD complete and speed up reaching the goals. Hence, implementation of both Quality Function Deployment and Policy Deployment in higher education institutions is complementary.

1.7.3 Process Management

Originally, process comes from "processes and procedure" which means advancement and move ahead. Process is a network of activities with a recognized beginning and end, using the resources of an organization, with a purpose of creating value for internal and external customers repeatedly.

Each process has got characteristics. Moreover, it has got supplier and customer. An organization is formed by different kinds of processes: individual process done by individuals, vertical processes related to a department or unit, and core processes that cut through the company across several functions or departments.

In all organizations, we have main processes, which have the duty of fulfilling external customer, support processes, whose task is providing resources for main processes, and management processes whose task is to make decisions on the goals and strategies and implement development in other organizational process. There are several steps for

process management methodology. The first step is organizing for improvement. This step considers the process owner and a team who work for process improvement.

Second step is understanding the process which shows the customers, suppliers, work flow, and interfaces of a process. In this stage, mapping the process is efficient, because in this case different activities are identified.

The third step is observing the process that emphasizes on control and measurements of the process. Fourth step is continuous improvement of the process by applying feedback from measurements.

As a matter of fact, for efficient improvement, three aspects of processes must be continuously developed. These three aspects are quality, efficiency, and adaptability. Quality of process clearly refers to the process qualifications in fulfilling customers. Process efficiency points out to the efficient utilization of resources in organizations, and adaptability considers adaptation of process with changes.

Important roles in process management are process owner, process manager, and competence supplier. Process owner is responsible for process resources. Process manager is responsible for operation of the process in the case of quick decision making in critical time. In fact, process manager assists process owner. Competence suppliers provide the processes with competence, Bergman and Klefsjö (2003).

1.7.4 Benchmarking

Generally, benchmarking is introduced an effective methodologies for continuous improvement of quality. Benchmarking was understood to be the act of imitating, but it refers to innovation and learning from the others more than imitation, Dattakumar and Jagadeesh (2003 pp. 176-209).

Benchmarking is a process for self-evaluation and self-improvement through the organized and mutual comparison of practice and performance with competitors in order to identify own strength and weaknesses, and learn how to improve and adapt with changes, Camp (1993, pp.31 23-7).

A lot of businesses and institutions apply benchmarking; hereby they have been using this as an important method for improvement.

For instance, benchmarking was applied in higher education in North America and England in the early 1990s. The method was applied to the management of services like

library, facilitates, estates, energy and treasury, but the useful technique applied by the other education institution rapidly. In higher education institutions, benchmarking is used to compare the performance of universities with their international competitors and learn from them, Dattakumar and Jagadeesh (ibid).

1.7.5 Deming Cycle

Dr. Deming that is one of the famous gurus in the context of quality drew the diagram shown below on the blackboard during his first meeting with the Japanese union of scientists and engineers.

Although, this diagram is known as the Deming Cycle, he called it Shewhart Cycle. This diagram graphically describes the action steps that we use every day to manage our lives and our businesses, and is considered as a methodology in the frame of TQM references.

Nowadays this cycle is almost an active part of the quality work in every organization and institution. This diagram shows there are four steps in order to complete one action that according to Brassard (1996), each of these steps are defined as follows:

• We **PLAN** what we want to accomplish over a period of time and what we are going to do to get there.

• We **DO** something that furthers the goals and strategies developed in number one (plan).

• We **CHECK** the results of our actions to make sure there is a close fit between what we hoped to accomplish and what was actually achieved.

• We **ACT** by making changes that are needed to more closely by developing procedures to ensure continuance of those plans that were successful.

In fact, this cycle emphasizes the importance of continuous improvement in every action and clearly reveals that which step or steps might went wrong in every action.

1.8 The Tools of TQM

1.8.1 Seven Management and Planning Tools

The seven management and planning tools help managers in planning the process and project effectively and efficiently. As a matter of fact, seven management and planning tools are not new. They were used in post- World War 2 operation research work and also Japanese leaders have used these tools, figure 6, Bo Bergman, Bengt Klefsjö (2003).

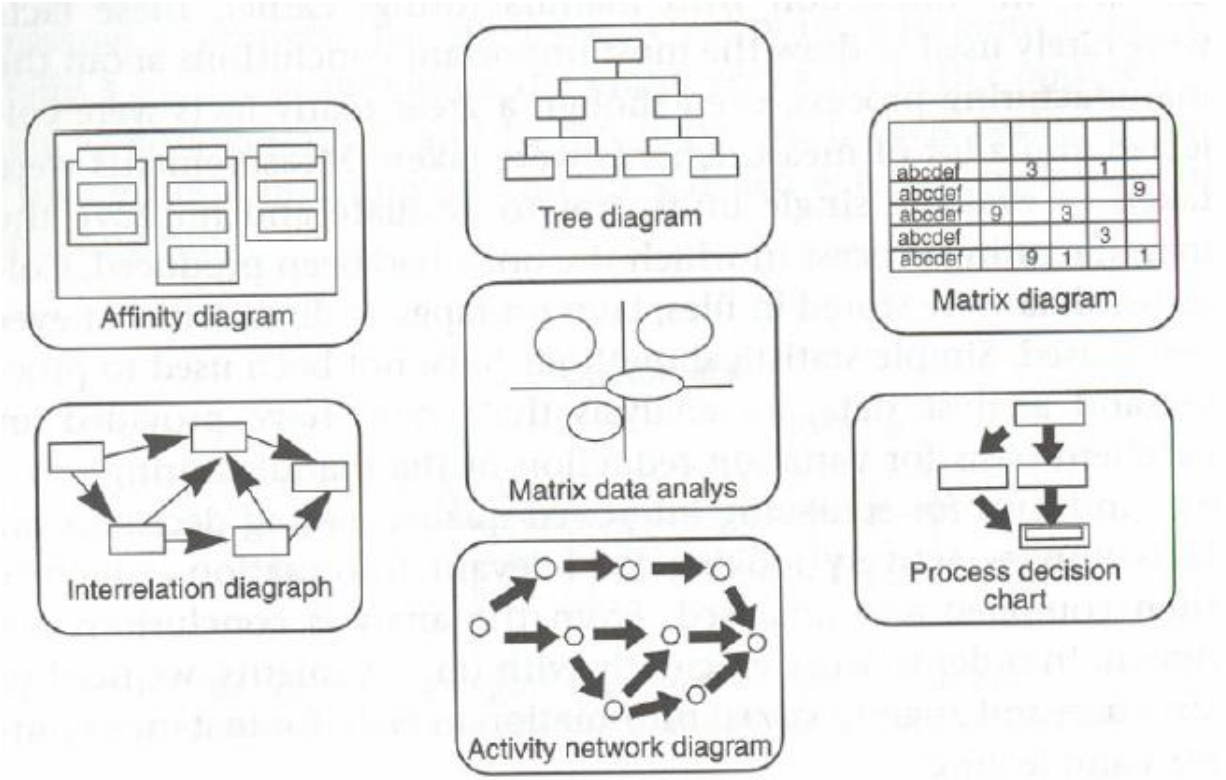

Figure 6: Seven Management and Planning Tools.

In fact, the seven management and planning tools complete each other. In this case, the output of one tool is the input for another tool. In fact, we use a combination of seven management and planning tools. This incorporated approach will help each manager to save time by planning effectively. Useful planning can avoid expensive and time consuming rework when a weakly and unsuitable planned implementation fails, Brassard (1996).

These seven management and planning Tools are:

• Affinity diagram/ KJ method (Jiro Kawakita method).
• Interrelationship digraph.
• Tree diagram.
• Prioritization matrices.
• Matrix diagram.
• Process decision program chart (PDPC).
• Activity network diagram.

Some of these tools will be described in more detail.

Affinity Diagram: this tool collects bulky amounts of language data such as opinions, issues, and ideas and classifies them in to groupings based on natural relationship between each item. It is a creative rather than a logical process. The main base for affinity diagram is brainstorming.

It is used when we want to ignore old solution for problem solving and we want to know how the others think about the problem, Brassard (1996).

Interrelationship Digraph: this tool puts a central idea or problem and works out the reasonable or chronological links between related items. It is also a creative process and based on brainstorming. Multidirectional thinking is used in this tool. It is used when the problem is too complex and it is thought to be the root cause for many other problems. Besides, it is used when there is enough time to complete the repeated work pieces including making interrelationship digraph, adjusting, and evaluating it again, Brassard (1996).

Tree Diagram: This tool maps out in increasing detail the full range of paths and tasks that needed to be accomplished in order to achieve a primary goal and every related sub goal. It is used when the implementation is complex or there are serious consequences for missing main tasks, see figure 7.

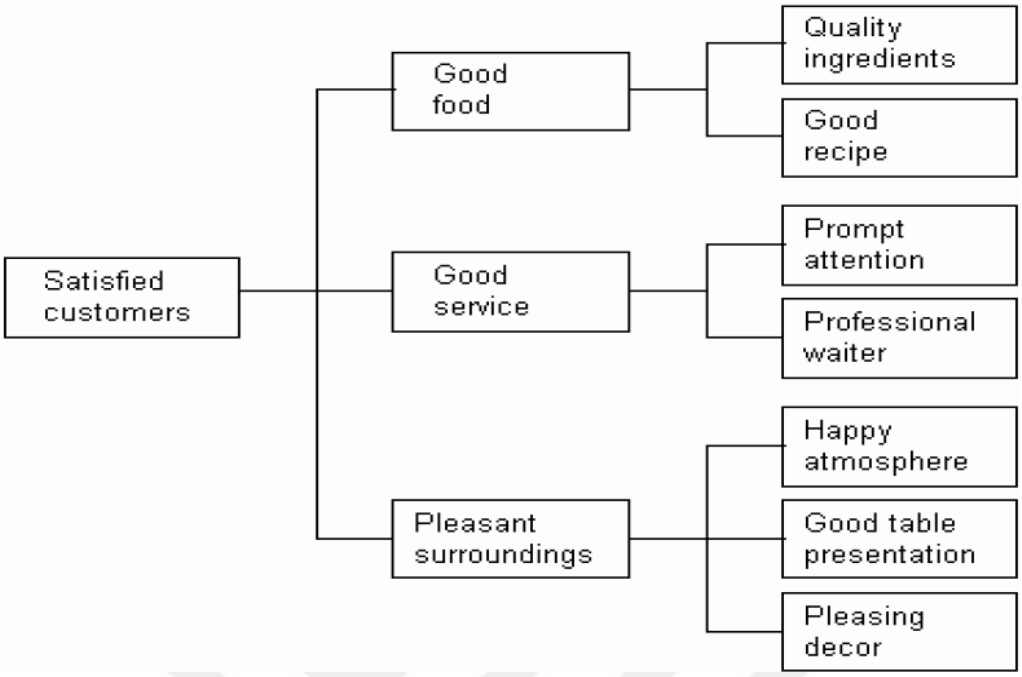

Figure 7: An example of Tree Diagram

Prioritization Matrices: This tool prioritize tasks, product, or service characteristics by using a known weighted criteria and a combination of tree and matrix diagram.

The main usage of this tool is when decision making is important for the survival of organization. It is used when the options have got strong inter relationships, see figure 8, Micheal Brassard (1996).

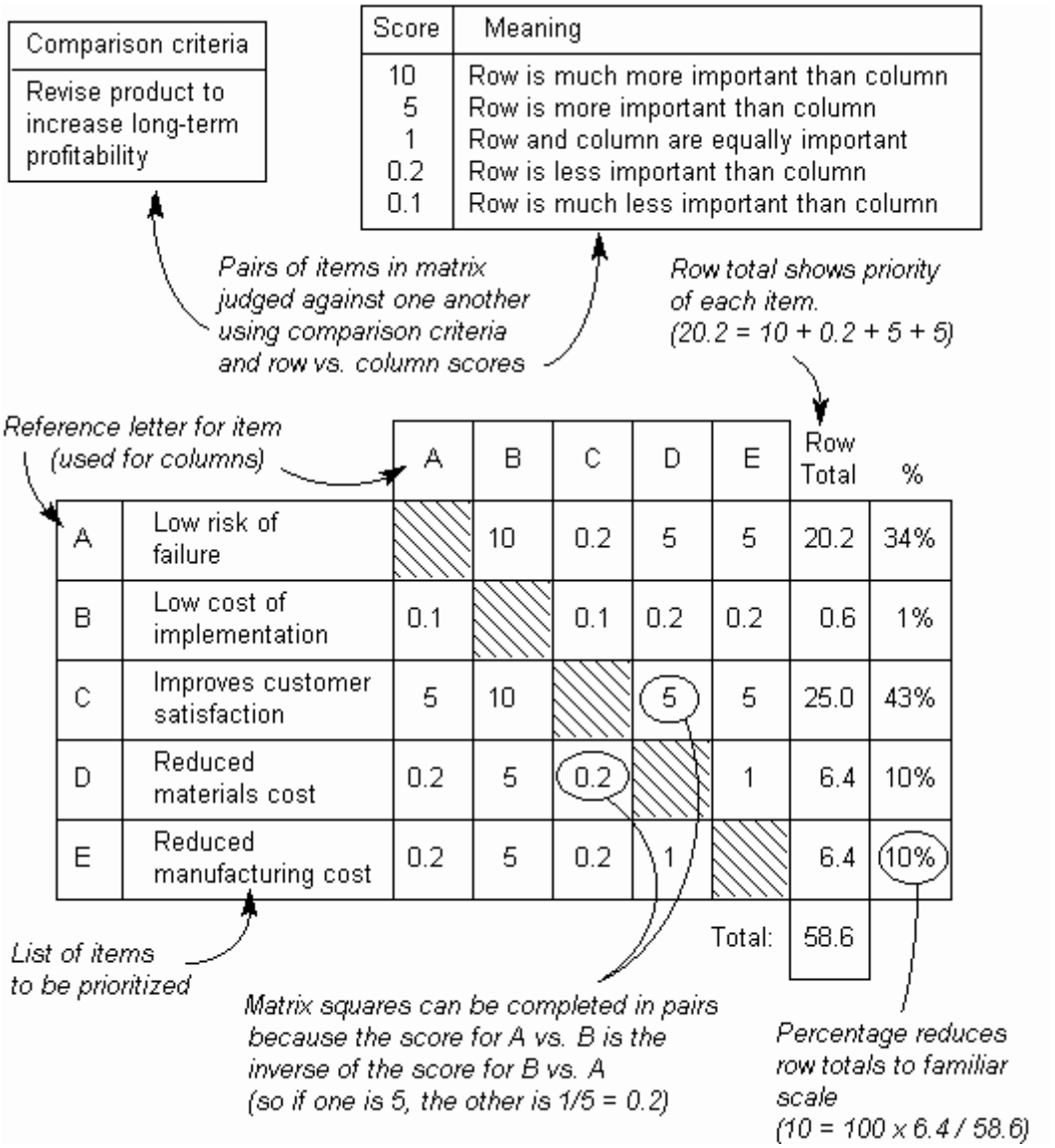

Figure 8: an example of Prioritization Matrices

Besides, it is applied when limited resources such as money, manpower, and time are available for implementation. In the case of using tools, the first steps is designing a criteria matrix, and compare relative importance of each criterion with other criterion and score based on the comparisons. After that, the criteria in the company will be compared with each other using the designed criteria matrix.

1.8.2 Seven Quality Control Tools

In fact, for improvement in every aspects of work in an organization, we need data and after data collection, data analysis. Besides, participation of everyone is necessary in improvement work. Therefore, DR Kaoru Ishikawa introduces the seven quality control tools for quality improvement.

These tools are data collection, pareto charts, stratification, control charts, histograms, cause and effect diagrams, and scatter plots. Sometimes, flow charts are as the eighth tool, see figure 9, Bergman and Klefsjö (2003). There will be more description about some of these tools, which the authors think may be applicable in HE, in the following parts.

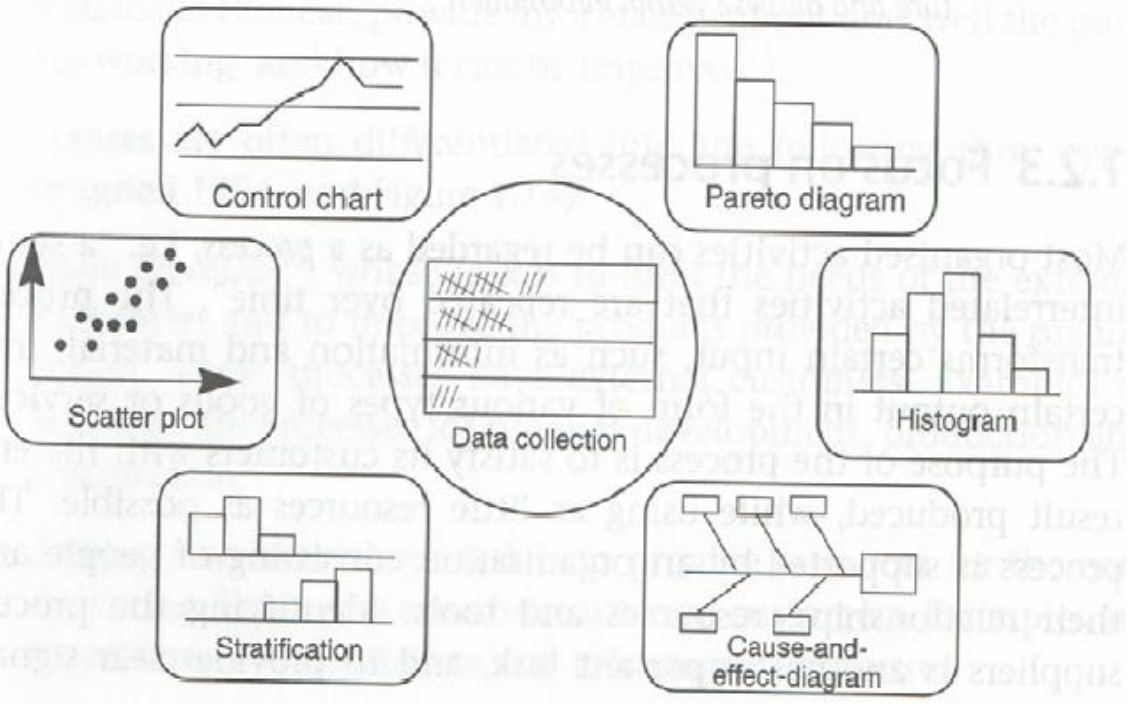

Figure 9: Seven Quality Control Tools.

1.9 Data collection

It is necessary to collect related data and be aware of the aim of data collection. In this case asking and answering two questions will guide the procedure of the work. First the problem related to quality, and second is about the facts that are related to illumination of the problem. The main point in data collection is gathering useful, efficient, and related data to quality problems, as long as collecting unrelated data is nonsense, Bergman and Klefsjö (2003).

1.9.1 Histograms

In the case of having large amount of data, we must divide the measurement axis into different parts, and let the number of values in each class be represented by a rectangle. The area of this rectangle is made proportional to the fraction of observations in class, Owlia and Aspinwall (1966, pp. 161-71). In this way the sum of areas of all these rectangles is equal to unity. By using the histogram we can depict how a product or process characteristic change, Bergman and Klefsjö (2003).

1.9.2 Pareto Charts

The Pareto charts are used when we want to decide in which order problems must be solved. In fact, pareto chart makes serious problems visible. When the most serious problem is solved, we can go to the next problem, see figure 10, Bergman and Klefsjö (2003).

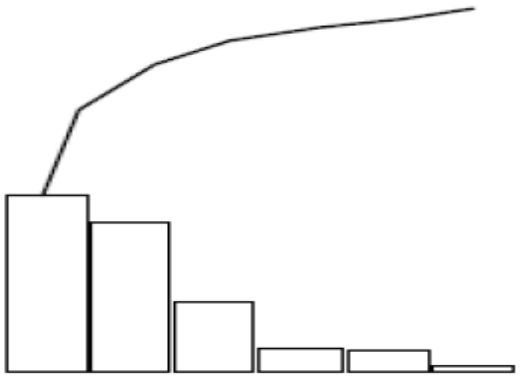

Figure 10: An example of Pareto Chart

1.9.3 Cause and Effect Diagrams

Cause and effect diagram, which is also, called Fishbone diagram and Ishikawa diagram focuses on finding the root causes of quality problem. Cause and effect diagram was introduced by Dr Kaoru Ishikawa in 1943 in Japan.

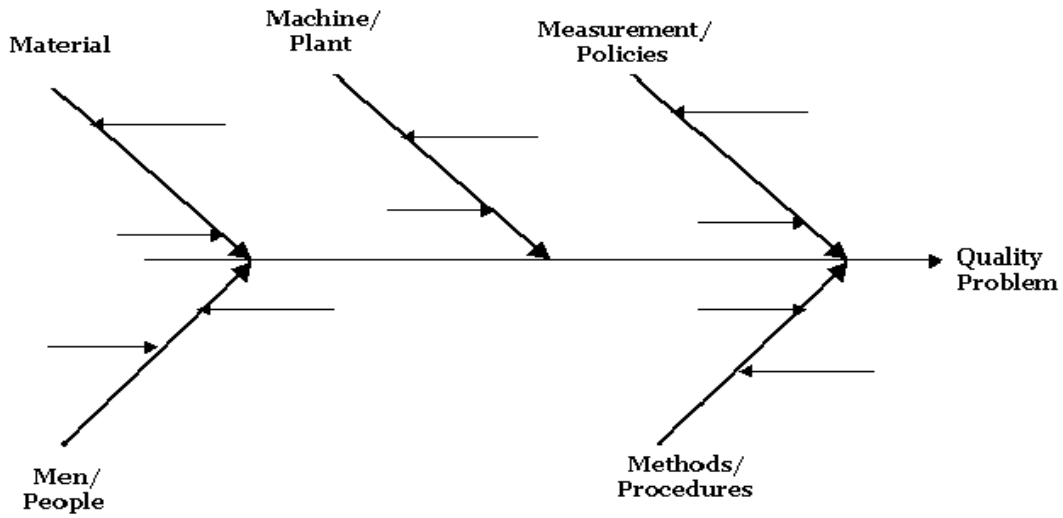

Figure 11: Cause and Effect Diagram

The construction of Fishbone diagram is like a fault three. In the case of using cause and effect diagram, first we consider and explain main causes of the problem. Then, we break each cause and describe it in to more details, see figure 11. An efficient cause and effect diagram must have many bones.

As a matter of fact, quality problem is usually caused because of lack of correct management, not experienced operator, usage of inappropriate tools.

Moreover, machine and material problems, not accurate measurement devices, and environmental effects on the final products are main reasons for quality problems, Bergman and Klefsjö (2003).

Important Notes in Application of Quality Control tools and Methodologies

According to Bunney and Dale (1997, pp. 183–189) for using and applying Quality Management Tools (quality control tools) and methodologies, the some notes must be taken into consideration by every organization to achieve good results, these some of notes are:

• Identifying stages of improvement, introducing appropriate QMTs for suitable function, considering available resource are important factors in AQMT.

• Recognition of the combination of appropriate tools for specific application, along with adequate training is essential for implementation of QMTs.

• To overcome difficulties regarding to the status improvement process, QMTs should be used to solve well-defined problems.

• Understanding of tools within well-suited group of people relating to their positions will cause QMT to become a part of daily activities within the organization.

• Providing adequate training to the right people at the right time, along with well-defined QMTs is vital for successful improvement process.

ISO 9000

In fact, ISO 9000:2000 is described as a quality management system to direct and control an organization with regard to quality. A quality system is a tool for controlling and improving the quality of the company's products and processes. The system must be documented, because documentation of the system is a foundation for quality audit.

The international organization for standardization, which is responsible for ISO 9000, has different names in different countries. For instance, the term ANSI is used in USA, JISZ9000 in Japan, and BSEN ISO 9000 in Great Britain. ISO9001, ISO9002, and ISO9003 contained needs for quality systems in different contract situations. These three groups of standards can be classified as requirements standards. ISO 9001 was the most comprehensive part; including ISO9000 family makes a distinction between the requirements for quality management systems and requirements for products.

The ISO 9000:2000 standards: the quality management system in ISO 9000 series is based on "eight quality management principles". These eight principles are customer focus, leadership, involvement of people, process approach, system approach to management, continual improvement, factual approach to decision-making and mutually beneficial supplier relationships.

_ **Customer focus:** in fact, main purpose of a company is satisfying customers with different needs. In this case, the organization can prosper and reach to its business goals.
_ **Leadership:** leaders have vital role in conducting the organization through objectives.
_ **Process approach:** Involvement of people: all the people in an organization must be involved in quality work. In this case, their ability and talents will be used effectively for gaining success and benefit in the organization.
_ **Process approach:** in an organization, an ideal result will be achieved when all activities and resources managed as a process.
_ **System approach to management:** in a system identifying, managing interrelated processes can help the organization to reach its goals in an effective way.
_ **Continual improvement:** organizational continual improvement is an important
Principle in surviving the organization among competitors.
_ **Factual approach to decision-making:** important decisions in the organization are made in the case of analyzing and interpreting related and useful data and information.
_ **Mutually beneficial supplier relationships:** an organization and its suppliers are dependent and a relationship, which improves the benefit for both supplier and company, will lead to success in achieving company goals. An organization should establish, document, maintain and continuously develop a quality management system according to the requirements in the standard.
Process identification, the sequence of these processes, process control, checking the availability of resources and information, and analyzing, measuring, and monitoring of the processes are special requirements for implementing a system according to standards .Also the standard is built on the four main areas.
These areas are management responsibility, resource management, product realization and measurement, analysis and improvement.

European Association for Quality Assurances in Higher Education

During the last decade, ENQA (European Association for Quality Assurances in Higher Education) has been established in order to increase the European higher education institution's co-operation to improve the quality assurances in higher education. It has accomplished its overall objectives in the following area:

• To promote the trade of information and experiences, especially on development methods and successful implementation stories.

• To promote and recommend standards, suggest new approaches and procedures for quality assurances in HE.

• To accomplish requirements for know-how from European Ministers of Education, national and regional public authorities and other bodies associated with the European Higher Education Area (EHEA).

• It will enhance the quality assurance activities in multinational level in higher education.

• It will increase the effectiveness of the peer-review systems, their promotion and development for quality assurances and accreditation agencies.

• It will provide and improve the cooperation of higher education institutions with other relevant European stakeholder organizations.

• It will corporate in the establishment of the EHEA.

However, ENQA has provided an opportunity to develop and construct an effective contribution for quality assurances in European institutions. In fact, this association was developed to advance the objectives of Bologna Process. They believe that quality assurances in higher education is not only the main concern by European institutions, and in the concept of quality and standards there is a widespread interest and thereby all institutions from all over the world are taking actions in this circumstances.

This worldwide concern about the quality and standards in HEIs is due to the rapid growth in the higher education market and the cost that it will serve to the both public and private sector.

Consequently, ENQA believe that if the European institutions are willing to have the most dynamic and knowledge-based economy in the world (Lisbon Strategy), they will

need to follow up the quality of its programs and awards more seriously and it will need more effort from those who pursue that vision.

Moreover, they have to situate the resources of assuring and signifying that quality. Altogether, due to internationalization both inside of the Europe and outside of it, some quick actions must be in place to the response of the initiatives and demands. They have mentioned that in order to achieve the objectives of ENQA and to develop the quality assurances of higher education in European countries, the commitment of all those involved in the establishing these proposals and guidelines is vital.

The proposals and guidelines, which have been established by ENQA, emphasize on a number of principles that has described in details, however some basic principles will saturate the whole principles. These fundamentals according to Standards and Guidelines for Quality Assurance in the European Higher Education Area are as follows:

• The interests of students as well as employers and the society more generally in good quality higher education;

• The central importance of institutional autonomy, tempered by a recognition that this brings with it heavy responsibilities;

• The need for external quality assurance to be fit for its purpose and to place only an appropriate and necessary burden on institutions for the achievement of its objectives.

The EHEA (including 40 states) has distinguished it's multiplicity in political systems, higher education systems, socio-cultural and educational traditions, languages, aspirations and expectation. This provides a unit approach to quality, standards, and quality assurance in higher education inappropriate. The establishment of ENQA is focused preferably on the generic principle to the specific requirement, in both guidelines and standards.

However, they have demonstrated that this emphasize will be accepted in a broader context on its first illustration and it will also provide a more robust basis to bring up different higher education communities across the EHEA. Although, the generic principle will lead to the consequence that guidelines and standards are most likely focus on what should be done rather than how it should be accomplished.

Conversely, the ENQA has highlighted that achieving conformity for these guidelines and standards is not the same as accomplishing the Bologna objectives of a quality

assurances dimension for the EHEA. The ENQAs' work is mostly relying on the recommendations and their implementation to secure the quality culture among the HEIs and external quality assurances agencies, Guidelines for national reviews of ENQA member agencies (2006).

So forth we have tried to define the concept of TQM, and now the next step here is to provide a model of TQM. In our point of view, this model will clearly describe where an organization stands today in the context of quality, what they need to do, and how they shall work with TQM. In fact, the proposed model is a combination of a TQM model defined by J. Motwani & A. Kumar (1997, pp.131–135), and Deming Cycle, which will be discussed in next section.

1.10 TQM Implementation in Higher Education

In previous section, the discussion was about defining of what TQM really is and its components, however there were several applicable and useful points that can be used by every institution in this definition to improve the their quality work. Now the second phase of a TQM approach i.e. implementation phase will be described. For the implementation of TQM a model will be presented in order to make the TQM applicable for every organization.

1.10.1TQM Model for Higher Education

As we know, TQM has been used primarily in the industry but there are some reasons that TQM should be applied in educational institutions.

First, necessitate for change do not be accepted by the institution most of the time. Second, is the hazard to the faculty's individual autonomy therefore in TQM we need to have customer involvement and teamwork, Fisher (993, pp. 15-19).

Finally, existing process will be improved by TQM. It cannot promote radical change Fisher (ibid); Marchese, (1993, pp. 10-13).

When the applicability of TQM in education is accepted, the procedure of its process should be addressed. In fact, many institutions have reviewed the applicability of TQM in higher education and there are some proposed models to prove its applicability. J. Motwani and A. Kumar (1997, pp.131– 135) have suggested five step model that they

believe is applicable to every institution. This model has five phases: deciding, preparing, starting, expanding and evaluating. TQM model proposed by J. Motwani and A. Kumar (ibid) is well defined and is clearly describing what should be taken into consideration for TQM implementation. However, by looking at these phases and going back to the Deming cycle we will find similarities between them.

To us the founded similarities means that we can put the phases defined by TQM model into Deming cycle, then the new created model will have more efficiency.

In fact, one may claim that Deming cycle is for continuous improvement and proposed TQM model is for improving the quality.

Therefore, combination of this model and cycle with some changes will offer model for continuous improvement of the quality, even though TQM is about continuous improvement for quality by itself, see figure 13, next page. For this purpose, the phases defined by the TQM model will be set up in Deming cycle with some changes. The proposed model here will be a four-step cycle, which its components are as follow:

Plan step in Deming cycle is divided by two parts, first part is called Studying. This part is about doing a research of what TQM really is and top management should fully understand the concept, its objectives and they must accomplish their plan. The next part in plan step of this cycle is named preparing, and is about performing an internal assessment of the quality work and defining values, methodologies and tools. Furthermore, there must be some clearly defined objectives and visions.

Do step in Deming cycle is about starting and in another word plan and implement solutions. In this step, there must be some training to all levels about terms like Quality, TQM, Core Values, Methodologies and tools, and distribution of some customer surveys to both internal customers and external customers is desirable. Furthermore, Quality Council must be formulated and some quality improvement teams should be formed. Finally, some measures must be established and the university board should perform a benchmarking in order to recognize and reward improvements.

Check step in Deming cycle has been regarded as evaluation step. This step has to do with evaluation of the plan and do steps. Here, the most effort should be set up for

checking the actions that we have done and making sure that we are in a right direction to achieve our objectives.

Act step in Deming cycle is divided by two parts. In the first part, if there were found some problems according to checking step, changes must be applied to the system. Accordingly, those solutions and actions done well should be standardized. This will prevent from un-willingness changes within the defined systems.

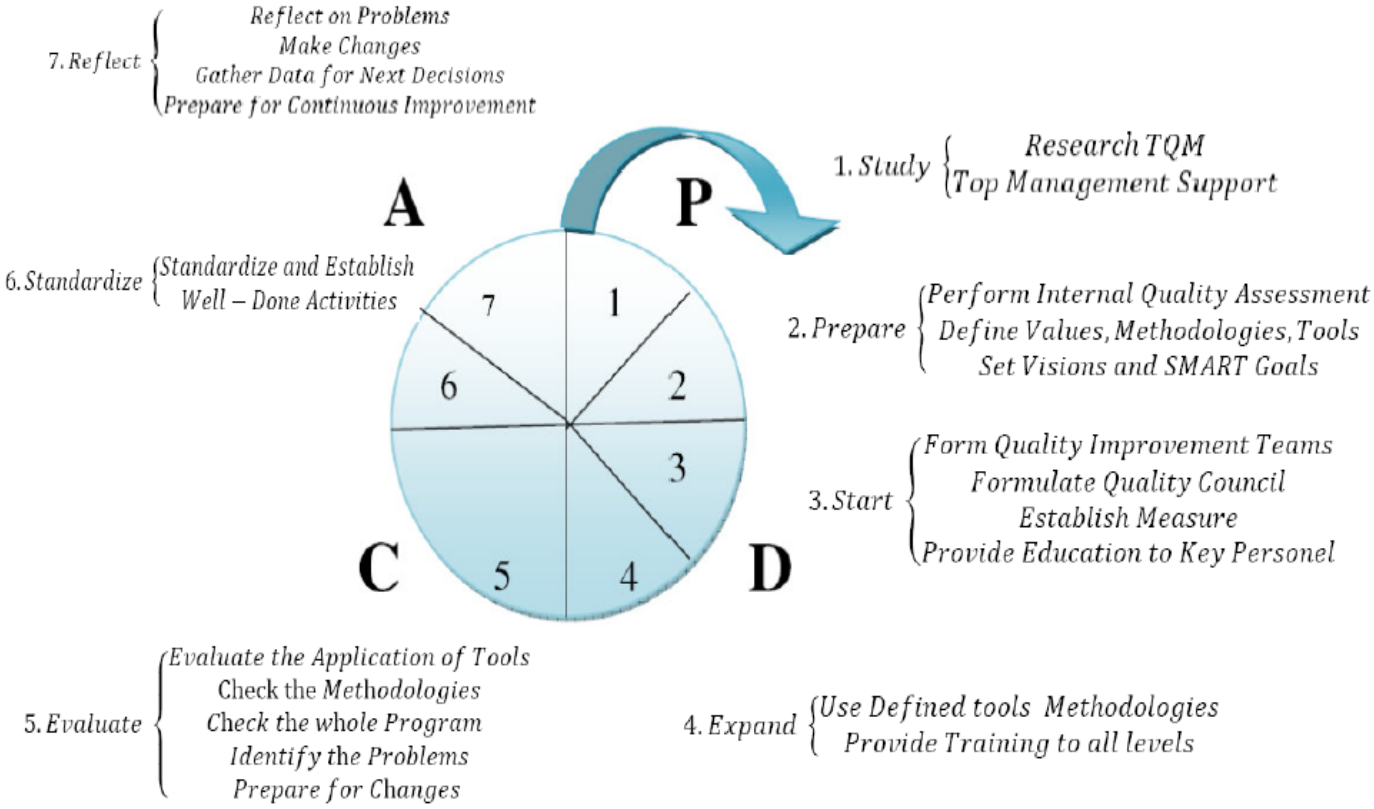

Figure 12: TQM model for implementation in higher education

CHAPTER II

Applying Total Quality Management in Higher Education a case study in Kurdistan Region

2. Method

This chapter explains the method used in project for data collection and research. Moreover, in this chapter the authors will try to give a comprehensive view to those thoughts and conditions, which are necessary for result presentation. In fact, this chapter is a reference for scientific method necessities.

2.1 Research methods

The work directly depends on the author's understanding towards the problem. How the authors see the problems related to quality goes back to the literature studies and data collected in interviews and meeting.

Research phase

The author's opinion has got effects on the results of research. The researcher's attitude based on old experiences and using literature studies has got effects on the result of research that she has done. This matter is called hermeneutic, Johansson-Lindfors (1993). Using both the research and theory improves the knowledge that applied in the project a lot. Therefore, using hermeneutic approach helps in organizing the project effectively. However, some effective methods can be used in doing a research such as induction, deduction and abduction, two most common ones will be clarified here and the authors will try to motivate the one they have used.

Induction and Deduction

Induction method refers to reaching from general to specific in research work. In fact, experiences play important role in summarization of inductive method. Using measurements and quantitative methods is common is induction. Induction starts with and unclear issue. Then a comprehensive view of the unclear matter will be created,

Bengtsson (1995). Deduction method points out reaching from general principles or theories to conclusions of each individual phenomenon, Patel and Davidsson (1994). In fact, deduction means that the researcher moves toward from available literature and present problems to consequence results about specific event. In this case, one hypothesis inspection can be done during the experimental studies. The main goal of deduction is analyzing quality of the company products and then comparing the analysis with the theory. Given that, this research is in the form of case study, and in case studies the most common methodology is abduction, according to Alvesson and Sköldberg (1994), this methodology will be used for this thesis work. Therefore, the empirical application of TQM will be developed and the theory will be adjusted.

2.2. The Research Methodology

2.2.1 The Research Importance and Objective

Recently, there has been an increased competition locally and globally in adopting and implementing TQM in higher education universities and institutions. The purpose of the implementation in education area is to reach global university ranking and gain a competitive advantage.

TQM conceder as one of modern quality management methods that have proved effectiveness in many educational institutions including most of the USA and the UK universities. There is still a lack of research and studies about the interest of Kurdistan region universities to adopt the TQM concept. Therefore, this study aimed the following objectives:

1) To explore the experiments, benefits and recommendation of TQM successful implementation in Kurdistan region universities.

2) Identify best TQM practices to support the implementation of TQM concepts in the Kurdistan region universities.

2.2.2. The Research Problem

Studies about TQM implementation in Kurdistan region need to be increased, especially with the lack of involving all the important parts of the educational process, which may affect the performance and improvement of the educational institution for this purpose, a set of research question formulated as:

1) What is the TQM nature and concept in the institutions of higher education?

2) What is the influence of adopting TQM implementation in Kurdistan region universities?

3) What are the best practices to help the TQM implementation in HE in order to improve the universities' qualities and the university rankings?

4) How to establish best TQM practices to support the implementation of total quality management?

2.2.3 The Research Hypothesis

1. Hypothesis 1

Ho: Employee involvement as a TQM principle is not practiced at Universities.

H1: Employee involvement as a TQM principle is practiced at Universities.

2. Hypothesis 2

Ho: Teamwork as a TQM principle is not practiced at Universities.

H1: Teamwork as a TQM principle is practiced at Universities.

3. Hypothesis 3

Ho: System of recognition and appreciation as a TQM principle is not practiced at Universities.

H1: System of recognition and appreciation as a TQM principle is practiced at Universities.

4. Hypothesis 4

H0: Self-assessment as a TQM principle is not practiced at Universities.

H1: Self-assessment as a TQM principle is practiced at Universities.

5. Hypothesis 5

H0: Subscription to quality award system as a TQM principle is not practiced at Universities.

H1: Subscription to quality award system as a TQM principle is practiced at Universities.

2.3Tools Used in The Research Were as Follows:

- Structured interviews with College administration, faculty and students.
- Survey Questionnaire for data collection.

2.4 Qualitative Research

In research method, both qualitative and quantitative research is useful. In fact, election between qualitative and quantitative research depends on the quality and status of the problem.

The base of qualitative research is on study items and non-quantified data like thoughts and principles.

Generally, the focus would be on different ways of information collection in order to get a deeper understanding of the study items. Qualitative research emphasizes on interviews, meeting, and observation. In the case of using these approaches, a deep understanding about the matter will be gained, Marshall and Rossman (2006).

In fact, qualitative research trust and apply four methods to assemble and gather the data and information.

These four methods are participation in location, direct observation, deep interview, and analysis of documents and material culture. These methods organize the necessary part of the investigation. Several secondary and special methods of data collection enhance them.

Four choosing the methods of research and applying effectively, we use Brantlinger's useful explanation of seven parts of critical statements for qualitative inquiry. The first part refers to researcher's views of the nature of research. The second part shows researcher's location relative to participants.

Third element is about the direction of researcher's look. The most important divisions are fourth and fifth parts which relate to the objectives of the research and main audience of study. The sixth part points out the researcher's political location.

At last, seventh part refers to the view of the researcher about herself and the participants towards the exercise of organization. Assumptions made in these seven kinds outline how the special research methods are considered and executed during a study. Quantitative research focuses on collecting a large number of data items that can be quantified.

The quantitative research provides information that can be measurable and conclusions and results can be gained on the basis of these. In the research and study working, using both qualitative and quantitative research methods may be applied. In fact, qualitative and quantitative methods complete each other in an effective way.

Therefore, we have to use and analyze the results produced by both qualitative and quantitative methods in the work of investigation. However, this work was mostly qualitative and the researchers rely on the existing documents and interviews with some chairs of committees and councils.

2.5 Reliability and validity

The meaning of validity is to design indirect questions and interpret the answers of respondent in the own view. In order to achieve high validity, interview questions must be planned so that they are in agreement with the survey's aim and what is intended to be measured is measured and nothing more, Bell (1995).

Reliability explains how measurements methods resist against the unwanted effects. In most cases, reliability of interviews and questionnaires depends on personal status, comfort factors, and formulation factors, Bell (1995).

An effective way to reach high reliability in interview is choosing appropriate questions, enough time allocated to each question, and a comfortable environment. Besides, we must try to avoid of errors in making questionnaire, because these errors can decrease the reliability of questions in interview.

Choosing accurate and understandable questions in information gathering phase helps us in increasing reliability and leads to gaining effective information and data related to usage, Bell (1995).

However, in this work the authors have tried to increase the validity and reliability of the work based on the following facts. The questions for interviews have designed in advance and the authors' supervisor has checked them. In addition, these questions were given to the interviewees few days before the meeting to give enough time to them, and the selected interviewees were appointed in the top position, they were the chairs of different committees.

In the meeting session, enough time has been assigned for each question. Finally, after interviews the researchers have collected the answers and provided answers were given back to the respondents for final approval of what it has been discussed.

2.6 Information Gathering

In the step of data and information collection, there are two groups of data known as primary and secondary data. Primary data is related to data that is gained by different techniques such as interviews and questionnaire distribution.

The sources of secondary data are literature studies, newspaper, magazines, related articles, and internet.

Primary data

Primary information can be collected in three ways: observations, opinion investigation, and interviews, Dahström (1996). Using interviews and observation is more common than opinion investigation. Depending on the data needed, the questions in the interviews are different.

For instance, for a statistical study the questions must be limited into few alternatives for answering. Qualitative surveys are suitable with open questions and consequence questions.

In this case, designing a question for writing the own interpretation about each question can lead to better results.

Interview

Interview is the situation of asking question similar to communication among three types of operators: interviewer, interviewee and possible spectators.

In Depth interviewing

Qualitative researchers use and trust on deep interview more than the other methods of data collection." Kahlan and Cannell explain interviewing as "a conversation with a purpose".

A qualitative interview is characterized on its width instead of its depth. As a matter of fact, Interviewing differs in terms of a former construction and in the scope the interviewee has in answering to questions. Interviews are divided into three groups according to "Patton".

These groups are the informal conversational interview, the general interview guide approach, and the standardized open-ended interview. Qualitative in depth interview are similar to conversation rather than formal procedures with recognized answers. In this case, the interviewer introduces some facts and common issues to reveal the participant's views, but on the other hand respects how the participant structures the answers.

Moreover, systematization in asking questions must be considered when many interviewees are participated in the interview or the explanation and analysis of the results is critical for interviewer, Marshall and Rossman (2006).

Generally interviews produce large amount of data quickly when a lot of people take part in. The most important aspect of interviewer's approach is considering the participant's attitudes helpful and precious. Besides, the prosperity of interviewing depends on the interviewer's role in moral issues, meaning her ability in effective communication and interaction.

Although interviews are effective and useful in gaining information and finding some facts, they have some limitations and weak points. For instance, maybe interviewee does not tend to answer all the questions asked by interviewer, or because of lack of profession or unfamiliarity with local language, interviewer made some mistakes in making questions and could not show her main object in questioning.

Interviewers must be skillful at listening and question designing. Large amount of data can be gathered by interviewing, but analyzing all of them takes a lot of time. Therefore, important issue is the quality and useful application of collected data.

However, due to lack of time for the interviewees the researchers could not answer to all of the questions, which some of those missed question were important to be asked.

Nevertheless, the researchers send back answer to the questions asked in the interview session to the respondents, in order to increase the reliability of their work. In fact, the respondents approved what was written by the interviewers.

In conclusion two sources of data has used in this work. From primary data, interview was used and from secondary data literature studies, the researchers used related articles, and internet.

2.7 Methods criticism

On the way of identifying aims and problems to reach solutions, results, and conclusions, there are a variety of stages in which occurrence of mistakes is not avoidable. However, it is possible to follow these types of errors and prevent them from happening in some cases, Lekvall and Walbin (1993).

Some types of errors are:

• Wrong aim: if the aim of project is not understood correctly and accurately, the works from the start point up to end will be nonsense.

• Wrong direction and contents: this problem is occurred when somebody does not concentrate on questions relevant with the goal. Moreover, this error will happen when denoting the survey information is incorrect.

• Inference errors: these types of errors increase when the sample of people for making survey or research is not chosen in a correct way.

• Measuring errors: these mistakes happen when utilized measurement methods have got influence on results. These errors happen when interviewee is not honest in answering questions or the kind of questions on environment are not appropriate.

In fact, all the interviews aimed at raising the validity and quality of work, and they are used as the foundation for more outcomes and investigations.

As long as interviewee must be able to express his opinions in a comfortable way, interviewing must be organized and executed in closed locals.

2.8. Higher Education in Kurdistan Region

In Kurdistan Region there are at present some 19 state and state-recognized private higher education institutions. There are two semesters each academic year. The standard study period in which a degree programmer can be completed is at least eight to ten semesters at universities.

The institutions above include universities and equivalent higher education establishments such as technical universities, comprehensive universities and specialized institutions at university level (eg. for medicine, sport, administrative studies, philosophy and theology). Only universities and equivalent institutions are entitled to confer doctorates.

The total number of the students at higher education institutes in Kurdistan region are 94,700. The percentage of female students is 48%. There is no tuition fee as the education is free in Kurdistan Region.

Professional Career Institutions

Technical and vocational institutions:

Professional career institutions have the task of providing students with practical training on an academic or artistic basis. Degree programmes and teaching at these are strongly oriented towards vocational studies and the practical requirements of working life.

The Professional career institutions offer shorter courses than the universities and arts and music colleges, particularly in the engineering disciplines, in business administration, social work and creative arts disciplines.

Accommodation

Accommodation is not warranted for students upon humanities. Their registration with Kurdistan universities or Colleges. There are halls of residence but most Kurdish and foreign students have to find their own accommodation.

You should go to your university of choice region well in advance of the beginning of the semester to arrange a place to live. Initially you may have to stay in a privately own

rented house or other cheap accommodation until better housing is found. Selection of students for the relatively few halls of residence takes place six months in advance of the semester so you should apply well in advance. The academic advice center and other university services will give you assistance.

Student Organizations and services

In most Kurdistan Region areas, you would automatically become a member of the student union when you register – this is an organization established to help students-look after their own interests. You could also join one of the political groups or other societies. Your overall interests as a foreign student would be looked after by the Academic advisers. The advisory service will provide general tips to help you organize your studies when you arrive. Student welfare offices will give your assistance with economic, social or medical problems. Kurdish and foreign students receive a student card upon registration at a higher education institution and can, as a rule, use public transport at reduced prices and get inexpensive meals in student canteens.

The system of higher education in the Kurdistan Region of Iraq faces a lot of challenges and problems. The quality of the system in general, in terms of conducting scientific and high quality research has been criticized by the local media, public opinion, and many international media platforms. Even some high governmental officials of the Kurdistan Regional Government (KRG) have admitted to the existence of the low quality system, including Dlawer Abdul-Aziz Ala'Aldeen himself, the Minister of Higher Education and Scientific Research.

The local media, both independent and Kurdish political media have revealed that academic qualifications and the role of the universities are under question in the region. Major problems are the absence of complete academic freedom, suppression of freedom of speech, and political charges and interference of politicians over the public and private universities.

However, there has been plenty of excellent progress in improving higher education quality since Barham Salih, Prime Minister of KRG, appointed Ala'Aldeen as the Minister. Despite insurmountable political barriers and struggles, they both are truly continuing to make a lot of efforts to reform extensively. Having said that, from the

quality standpoint, the KRG's Human Capacity Development Program (HCDP) which awards scholarships to graduate students to study abroad, and the opening of new universities in Raparin, Halabja, Zakho, and Garmyan are two immensely popular achievements of his cabinet.

Ala'Aldeen does not conceal encountering difficulties and radical changes. "Reform of Higher Education and Scientific Research in Kurdistan is a big challenge that requires a clear vision and a well thought out road map. Here, the top level strategies mentioned are to provide a frame work for the Ministry's future activities, and to generate lively debates in the academic community.

The issues are complex and the challenge is enormous, however, these are not overwhelmingly so. We shall brain-storm every milestone, and with the determination and hard work of the academic leaders, we shall move from one milestone to another." Ala'Aldeen wrote a vision and strategy titled "A Vision to the Future of Higher Education in Kurdistan" which was published on the official website of the ministry www.mhe-krg.org on November 8, 2009.

Besides the lack of practical sessions, logical arguments, discussions and training, lecturing is the main priority and common technique of teaching in the majority of the professors.

Thomas Hill, clinical assistant professor at New York University's Center for Global Affairs, who has been working, conducting research, monitoring and leading discussions and workshops with professors and students at the universities throughout the Kurdistan Region for 11 years, exposed the biggest obstacles of the universities. He criticized the way that professors teach and lecture.

"I know that all of the public universities struggle with issues related to financial resources and developing modern facilities," he said. "To me, however, the biggest issue facing the universities in the Kurdistan Region is finding ways to encourage new and more effective methods of learning, teaching and research. Lecturing is still the primary method used by most professors, even though it has been demonstrated that adults, even young adults learn most effectively when more interactive approaches to education are used."

Hill also encouraged students alongside the professors to be more responsible and active. "Students in the Kurdistan Region also have to take greater responsibility for

being active learners. One way they can do this is by undertaking more rigorous research."

Furthermore, Hill admitted that it is not an easy process to work on large collections of books and research for the universities here, but there are still other ways to achieve increasing knowledge. "I understand that it is still very difficult for the universities to develop large collections of books in their libraries, but there are other forms of research that can be utilized, such as exploring reputable scholarly materials available on the internet and conducting field research in their communities that can help develop knowledge for the communities as well as for the student researchers."

Hill was generally speaking about public universities. To know about major problems of private universities, Athanasios Moulakis, President and Provost of the American University of Iraq Sulaimaniyah (AUIS), indicated the difficulties that they face. While MoHESR ranked AUIS as the top university among the private universities in the Kurdistan Region, it is still not far from several problems, even so distinct problems. At least, it cannot prevent difficulties that come up from improving things at the margin.

Moulakis said they have to keep all the balls in the air at the same time which is inevitable. "Most of the difficulties we face are connected to our being a very young institution. In well-established institutions you can content yourself with improving things at the margin. In a "start-up" you have to keep all the balls in the air at the same time, obviously you will drop some. AUIS has, however, been making very rapid progress and we look forward to the future with confidence and high hopes."

Unlike the public universities, AUIS attempts to eliminate the financial crisis by raising funds from different sources such as donations from local and international companies, businessmen, and student tuition fees. Moulakis clearly stated that "As a private non-profit institution AUIS must raise the funds needed for its operation."

"Charging fees is, of course, something of a challenge in a country accustomed to state institutions that provide higher education for free – or, more exactly at public expense," Moulakis added, "The enormous support we have received from individuals, businesses and civil society in the region and beyond is an excellent sign that we can look forward to continued material and moral support as we grow stronger in the service of the people of this region."

In addition to illustrating the difficulties of the higher educational system in the Kurdistan region in the first part of this article, Thomas Hill also discussed a what needs to be changed, and what is required to be done.

From Hill's point of view, what needs to be changed is the students and professors minds against old hierarchies. The process of learning is not only from the professors to the students, but also the exchange of knowledge that can be transferred from the students to the professors and as well as among the students themselves. "I think the main change that needs to happen is a shift in thinking by students and professors to break down old hierarchies so that they can learn from each other," said Hill. "Professors can learn as much from their students as students learn from their professors and other students. Professors who employ new, interactive student-centered teaching techniques and students who undertake new forms of critical research can lead this transition."

Hill's response about the requirements of this change is encouraging the students and professors by leaders who make policies of higher education. "Of course, they also need to be encouraged to take these steps by the political and university leaders who make higher education policies for the Kurdistan Region."

Athanasios Moulakis spoke about AUIS in more detail by stating that it is the only educational institution in Iraq that provides American-style liberal arts education. He said AUIS has met resistance by those people who are not familiar with its style. "The innovations that AUIS introduces to Iraqi and Kurdish education, for example the pattern of student-centered learning and the single core in arts and sciences taken by all students, regardless of what their major will be, rather than immediate specialization into "faculties" according to the antiquated ways of the traditional national universities, meets with resistance by the public, students and their parents, who are unfamiliar with these approaches."

Moreover, Hill's comprehension about the current role of universities in the current and future developments of the Kurdistan Region in terms of improving high standards of education, economic and political developments was having lots of young, bright, inquisitive college students in Kurdistan who need to be taught critical thinking and effective planning of research, and then need to be employed.

"Every bit of public and private practice in the region needs to be exposed to critical, scholarly inquiry through a reflective research process," said Hill, "The leaders of the region need to welcome this scholarly criticism and commit to turning the best ideas that emerge from this process into new policies that will benefit all the people in the region. There are plenty of young, bright, curious university students throughout the Kurdistan Region, and, indeed, throughout Iraq. They need to be encouraged to learn new research methods, to employ them, to share their research outcomes widely, and then to see that the region's leaders value their critical thinking by developing innovative new policies that take advantage of what the region's best and brightest minds can produce."

Moulakis also said that they have met resistance to their innovations. "Yet our task is precisely to innovate, to introduce a fresh and better way for students to realize their full potential for themselves, their families, their employers and their country. One can say, therefore, that we need to overcome resistance to our innovative ways to do our work. Overcoming such resistance, opening new horizons is, however, not only a means but also an end: Change for the better is our work, and it will be borne out by the recognized excellence of our graduates."

One of Ala'Aldeen's main reform dimensions is a vision not only to the current, but also to the future of educational systems by prioritizing quality assurance. "The role of higher education institutions (HEI) in the process of nation-building is indispensible. Raising standards in these institutions has long been a top priority for the people and Government of Kurdistan Region," Ala'Aldeen added: "(MoHESR) will embark on reviewing the entire system of higher education, in a way that no legal or administrative barrier would be considered too sacred to change. On the contrary, they will all have to be removed to accommodate reform and serve the ultimate purpose, namely, improving quality and raising standards. Even the role of the Ministry and the Government in HE would have to be re-defined."

Finally, the biggest concern of a lot of people is the continuation and protection of the reform process after Ala'Aldeen. What will happen after changing the current cabinet of KRG for the next two years? It seems that by changing the current Prime Minister, the minister of HESR will be replaced by another person. The question is will his vision and the process of reform continue after he leaves his office?

2.9. History of University of Sulaimaniyah

The university was founded in 1968. In the beginning there were only three colleges but during the years that followed, the number of the colleges increased dramatically as the result of growing demands of higher education in the country.

In 1981, Ba'ath Regime transferred this academic establishment to the city of Erbil (Hawler) because of political activities against the regime. And then the name was changed to (University of Salahaddin).

In 1992 University of Sulaimaniyah was reestablished by tremendous efforts and enthusiasm of many Kurdish intellectuals and academics with the people of Sulaimaniyah and was officially reopened on 14 November.

This university is the mother of other universities in Kurdistan. It is the oldest University in Kurdistan proper, therefore, it has its own significance in the history of Kurdistan. So, in 1968, the first university in Iraqi Kurdistan was founded in Sulaimaniyah. Now University is the largest and oldest university in Iraqi Kurdistan Region. From that day onward, University of Sulaimaniyah has become one of the bright candles of science and Kurdish consciousness that prepared many generations in Kurdistan. The Ba'ath regime was not expecting that from this university, thus, in an unexpected step in 1981, the University was transferred to Erbil and its name was changed to University of Salahaddin in order to eliminate the revolutionary spirit of this center of science and Kurdish consciousness.

This situation lasted for twelve years till the uprising of 1991 which led to the reopening of the University in Sulaimaniyah. With the effort of the Kurdish political leadership and positive response of the science loving people of Sulaimaniyah, in 1992 this University was once again re-established.

2.10 The Vision and Mission of University of Sulaimaniyah

2.10.1 The Vision

• The University of Sulaimaniyah is a center for knowledge and change in Kurdistan Region and Iraq.

• The goal of this University is to become one of the top universities in the Middle East.

2.10.2 The Mission

• The University of Sulaimaniyah considers itself a leading institution in Kurdistan Region and Iraq and works to prepare the unborn generations so as to secure a bright future for Kurdistan as well as Iraq.

• The University tries to provide the best training for the students to become inventors and participate in the processes of progress and development in this region.

• The University keeps on preparing qualified and trained staff for Kurdistan Regional Government directorates as well as for the private sector and it continues to enlighten this region, simultaneously, it remains the leader in the process of diverting the community through preparing graduates who are provided with science, knowledge and training.

• Among the principles of working in this university is to observe human rights, women's rights, children rights, tolerance and democracy.

CHAPETR III

3.1 Data Analysis and Discussion

The concept of quality and its related notions like Total Quality Management has been elaborated so forth in this project. In addition, there was an investigation about the quality work at this university college and how they work within different quality issues, however some problems were found as a result of this investigation. Now it is time to analyze problems founded and give some recommendations in order to improve the quality system and work of this university.

In fact, it has been discussed that overall objective of this project is to highlight the general principles of TQM involved and to point out how this approach has been and can be used to improve the quality of an academic institution. Therefore, the researchers have tried to compare the quality work of this university college to the general principles of TQM, from definition to the implementation.

3.2 Data Analysis

University of Sulaimaniyah has defined its strongest vision to become a university of profession. Moreover, they have defined some short-term goals, which are towards their vision. One of the strongest points that this university is stand for is about focusing on their vision and this vision has not been changed from quite a few years ago. In order to reach these goals and vision they have started to improve the quality of their institution in different issues. Some policies and guiding principles were published by this university. Within these policies and principles, they have identified different responsible peoples and the activities, which should be done by these people.

In fact, different boards of directors, quality coordinator and quality improvement teams were appointed to work towards these policies and this quality movement and within different quality issues. Quality improvement team in this university in the highest level is consisting of the chairman of different committees, quality coordinator and the

chairman of the quality council, however some other improvement teams have been appointed in departments' level in somedepartments.

In addition, this university has defined a plan of action including activities that the university must follow to reach its objectives. Within these movements, they try to evaluate and assess their work regularly and in all issues. However, they are working hard and good enough in the direction of their objectives they believe that things can be always better and in other words, they are seeking for continuous improvement.

Finally, they believe that some departments, programs and committees have been successful to achieve objectives defined by this university as a result of these movements and this quality system. For instance, the committee for equality and multiplicity has been successful to achieve its objectives towards improving the equality, and Swedish school for Textile has been successful when it comes to profession.

Although, some people say that quality work in different departments differ and this is while not necessarily all work within the concept of quality. These departments try to improve their education system in their own way and they use their own terms in this circumstances.

Nevertheless, this institution is persisting to evaluate and audit the quality work of its institutions regularly, which one committee has been appointed for this purpose. They believe that by this internal assessment and audit they will be able to find possible problems and resolve them, which is regarded as a tool for continuous improvement in this university.

Accordingly, the committee for evaluation and self-assessment offered this project in order to uncover some possible problems that might prevent them to have this continuous improvement. The overall findings about the quality work of university of Sulaimaniyah in this investigation are as follows. First, not all people working in the context of quality are familiar good enough with the concept and its related terms and issues. There is a need for this institution to define the concept of quality i.e. quality of higher education.

Furthermore, there are some responsible groups of people for doing tasks in the context of quality, while not all know about their tasks good enough. In addition, some tasks

have not been clearly defined for those who are responsible for. Some more detailed problems were found as a result of this investigation, which will be discussed consequently.

There were questions about the goals and visions of this university. However, there are some defined goals and visions by this university; some think that a number of these are rather far and not measurable.

Furthermore, not all the people involved the quality work have a good picture of what are the objectives of the university. According to findings, some of the responsible people for the quality work of this institution think that employees can be considered as external customer as well.

However, in designing programs at this university, decision makers try to finalize their decisions based on collected data and analyzing them. They collect some data to identify the needs of society and students, and then they design programs based on the needs of both the society and students as well. This fact reveals that in some cases, they have a systematic data collection, and they are successful in making decisions based on relevant facts in this context.

Although, there are some discussions about other decisions that the university board make within each year. It does seem that there are only some meeting, evaluations and surveys, which they use in order to make final decisions for achieving their objectives. In fact, there is no systematic data collection.

The existing documents and interviews show that there is lack of well-defined processes in this university. In fact, there are some documents, which define certain activities but the relation between these activities and the purpose of the actions is not clear.

Furthermore, as a part of plan of action in this university, there is an investigation about allocating resources in order to develop strong disciplines in specific areas. Although, improving the methodologies and consumption of resources are founded to be some concern for this institution. For instance, some responsible people for the quality work think that this university can use Bologna process as an approach. One of the principles of this university is that every department should be involved the quality work, and they are all responsible for what they do and the way they act. In fact, they all try to be committed to the university plans. However, collected data show that there are some departments, which are not so active in this context. At the same time, some people who

are responsible for quality issues in this university, and are part of the council or committees are not fully active.

Moreover, it does seem that even those involved and responsible for quality work of university have not been educated in this context. In fact, lack of knowledge about the concept of quality and its related issues has been found within some people involved the quality work. So forth, the discussion was mainly about oral problems founded within this investigation, which in the recommendation part we will refer to defining values. Although, the researchers have found some other problems, which they are mainly related to methodologies and tools that university uses in order to improve quality of its higher education.

In fact, no well-defined methodology was founded in this university and in their quality work. Here come some relevant problems founded by the researchers. Existing documents and interviews show that this institution is lack of systematic planning for improving institutions' management.

In addition, according to findings there must be a systematic way to facilitate university for controlling the strategic goals of the university and actions done more regularly. However, this systematic way should also take into consideration the point that there should not be more workload for employees and staffs.

Although, there are many documents regarding activities should be done, towards objective of the university and the needs of different stakeholders, still lack of some well-defined processes that show the connection between these activities and objectives are visible. The university board and top management are always looking for continuous improvement and they have plan for their activities. Although, there are some actions done towards their plans and they check what they have done, but it does seem that there is no record on well-done actions.

According to existing documents and interviews, it does seem that for analyzing verbal information and numerical data there is no such a structured way. However, there are some meetings and many discussions for analyzing all kind of data and information. This may lead to wrong analysis and consequently some inappropriate decision may be make.

At this institution, different departments have special procedures and methods for improvement. The overall objective of all of them should be the same and towards the

objectives of the university. These diverse procedures may lead to different results, which not necessarily are the same as what the university wants to achieve.

In another word, within one institution it might be more effective if all departments use the same frame of reference for their improvement, although this does not mean they must all follow the same methodology or the same processes.

Another finding in this investigation is that group of chairman of different committees, quality council, and quality coordinator form a quality improvement team for the whole university, and some schools have their own quality improvement teams like school of engineering.

In our point of view, appointing a technical and supportive quality improvement team is differing from these improvement teams, while they must have the whole responsibility for the quality work of university.

This university has started to use ISO 14000 as a tool for moving towards environmental issues. Furthermore, in all meetings appointed for discussions about quality issues, brainstorming is a tool in order to uncover problems as well as suggestions for problem solving.

According to this investigation, there is no evidence proving that some other practical tools have been used by this university i.e. some appropriate and more structured tools for collecting ideas, data and analyzing, and prioritizing.

Evaluation and assessment of the quality work at this institution is about internal assessment, which not necessarily will lead to identifying the problems and recognition of areas for improvement. In fact, self-auditing has many advantages but some external audits can facilitate and motivate this institution for more improvement.

According to above discussions the following points were founded regarding to the quality system of the university:

1. There are some defined visions and goals; however, they could be defined better.
2. There should be some overall awareness about the goals and visions defined by the university.
3. The concept of quality has not been fully understood by those involved the quality work of university.
4. Commitment of all people involved the quality work is desirable.

5. There is a need for participation of more people in quality work, and they must be active in this context.

6. The tasks of different groups must be clarified, and there should be some well-defined goals and objectives for them.

7. Well-done activities should be recorded in order to let others to know. This will prevent overdo activities and making the same experiences by different groups of people and at different timetables.

8. Lack of some well-defined processes is visible in the quality work of university.

9. Although, there are many documents and activities defined for improving the quality of higher education at this university, still there is no a systematic way of improvement.

10. In some departments there are some quality improvement team, other departments have different procedures for improvement. That might be a vise idea to implement a unique approach in all departments.

11. Quality work should be conducted in a way, which will not lead to more work for employees and staffs.

12. Some well-defined methodologies must be classified by the university, and requirement of different stakeholders will be translated to university objectives in all areas.

13. Some more practical quality tools must be used by those involved quality work. This will facilitate the university to have more structured data collection and analysis.

14. There is a need for some external audits. Assessing the quality work of university by some other quality assurances and accreditation agencies not only will facilitate the university in the context of quality, but also it will motivate them to work more straight forward.

Table (1) The Number of occurrences and the percentages of the research sample according sex

Title	Occurrences	Percentages
MALE	238	60.86%
FMALE	153	39.13%
Total	391	100%

The data in Table 1 show that 60.86% of the respondents were male and 39.13% were female.

Table (2) The Number of occurrences and the percentages of the research sample according the Age

Title	Occurrences	Percentages
20 to 29 Years	111	28.38%
30 to 39 Years	146	37.34%
40 to 49 Years	98	25.06%
Over 50 Years	36	9.207%
Total	391	100%

The number of individuals in the age group under 30 years of age was 28.38%, while individuals in the 30-39 year group comprised 37.34% of individuals. The sample of the study represented the largest percentage. The percentage of individuals in the category of (40-49) years reached (25.06%), and the percentage of individuals surveyed (50 and over) reached (9.207%).

Table (3) The Number of occurrences and the percentages of the research sample according the Years of work Experience

Title	Occurrences	Percentages
Under 5 Years	77	19.69%
5 to 9 Years	69	17.64%
10 to 14 Years	153	39.13%
Over 15 Years	92	23.51%
Total	391	100%

The results of the survey indicate that the percentage of individuals interviewed in the career service from (5-9) years was 17.64% and the largest proportion was represented.).The percentage of individuals under the category of less than (5) years was 19.69%. The percentage of respondents (15 years and over) was recently (23.51%).

Table (4) The Number of occurrences and the percentages of the research sample according the Certificate

Title	Occurrences	Percentages
Diploma	84	21.48%
PHD	9	2.301%
BSC	231	59.07%
Master	67	17.13%
Total	391	100%

Table (4) shows that the percentage of individuals with a master's degree reached (17.13%), while the percentage of holders of the bachelor degree (59.07%), and those who have a doctorate certificate amounted to (2.301%) and those who have a diploma degree amounted to 21.48%). It is noted that those with a bachelor's degree are the majority in the study sample, indicating their ability to objectively answer the study tool.

Table (5) The Number of occurrences and the percentages of the research sample according their Fields

Title	Occurrences	Percentages
management & related	301	76.98%
Others	90	23.01%
Total	391	100%

(5), the percentage of individuals in the jurisdiction of the administration (76.98%) and the largest proportion, while the form of individuals of the category (other sections) of the jurisdiction of respondents (23.01%) of the study sample.

Q 1	Sex		Certificate					Field	
	F	M	More 15	Master	Bsc	PHD	DIPLOMA	Management	others
	No	no	no	no	no	no	No	No	no
	%	%	%	%	%	%	%	%	%
Totally agree	81	113	63	52	109	3	30	147	47
	52.94	47.47	68.47	77.61	47.18	33.3	35.7	48.8	52.2
Agree	56	100	21	11	93	4	48	117	39
	36.50	42.01	22.82	16.41	40.25	44.4	57.1	38.8	43.3
I don't know	10	13	6	2	16	1	4	22	1
	6.535	5.462	6.521	2.985	6.926	11.11	4.76	7.30	1.11
Disagree	3	5	1	0	6	1	1	7	1
	1.960	2.100	1.086	0.000	2.597	11.11	1.19	2.32	1.11
Totally disagree	3	7	1	2	7	0	1	8	2
	1.960	2.941	1.086	2.985	3.030	0.00	1.19	2.65	2.22
Total	153	238	92	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Means			Standard .Deviation						

1. Attention to the application of TQM in higher education leads to the improvement and achievement of management objectives

4.4	0.8

Table (1) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized

Sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Attention to the application of TQM in higher education leads to the improvement and achievement of management objectives) with a mean of (4.4) This means the direction of this paragraph towards (Attention to the application of TQM in higher education leads to the improvement and achievement of management objectives) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (0.8) and this result of the responses of the respondents.

2. Paying attention to using the TQM application in higher education appropriately needs to train administrators.

Table (2) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as

Q 2	Sex		Certificate				Field	
	F	M	Master	Bsc	PHD	DIPLOMA	managment	others
	No	No	no	no	no	No	No	no
	%	%	%	%	%	%	%	%
Totally agree	61	74	43	52	2	38	89	46
	39.86	31.09	64.17	22.51	22.22	45.23	29.5	51.11
Agree	77	144	23	152	5	41	180	41
	50.32	60.50	34.32	65.80	55.55	48.80	59.8	45.55
I don't know	8	11	0	14	2	3	17	2
	5.228	4.621	0.00	6.060	22.22	3.571	5.64	2.222
Disagree	5	7	1	9	0	2	11	1
	3.267	2.941	1.492	3.896	0.00	2.380	3.65	1.111
Totally disagree	2	2	0	4	0	0	4	0
	1.307	0.840	0.00	1.731	0.00	0.00	1.32	0.00
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%
Means			Standard .Deviation					
4.8			0.9					

specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Paying attention to using the TQM application in higher education appropriately needs to train administrators) with a mean of (4.8) this means the direction of this paragraph towards (Paying attention to using the TQM application in higher education appropriately needs

To train administrators) most of them agree with the content of the question according to the views of the respondents and the standard deviation of (0.9) and this result of the responses of the respondents.

3. Having good skills in using TQM in higher education generates the ability to use the Internet better.

Table (3) shows the frequency and proportionality of the first question for all

Q 3	Q 4	Sex		Certificate				Field	
		F	M	Master	Bsc	PHD	DIPLOMA	Management	others
		No	no	no	no	No	No	No	no
		%	%	%	%	%	%	%	%
Totally agree		52	95	27	83	3	34	111	36
		33.98	39.91	40.29	35.93	33.33	40.47	36.8	40.0
Agree		61	98	27	97	3	32	136	23
		39.86	41.17	40.29	41.99	33.33	38.09	45.1	25.55
I don’t know		14	17	6	21	2	2	9	22
		9.150	7.142	8.955	9.090	22.22	2.380	2.99	24.44
Disagree		12	12	3	11	1	9	19	5
		7.843	5.042	4.477	4.761	11.11	10.71	6.31	5.555
Totally disagree		14	16	4	19	0	7	26	4
		9.150	6.722	5.970	8.225	0.00	8.333	8.63	4.444
Total		153	238	67	231	9	84	301	90
		100%	100%	100%	100%	100%	100%	100%	100%
Means					Standard .Deviation				
3.9					1.8				

respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Having good skills in using TQM in higher education generates the ability to use the Internet better.) with a mean of (3.9) This means the direction of this paragraph towards (Having good skills in using TQM in higher education generates the ability to use the Internet better.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.8) and this result of the responses of the respondents.

4. Appropriate skills in use The TQM application in higher education generates the ability to create websites for the organization

	F	M	Master	BSc	PHD	DIPLOMA	management	others
	No	no	No	no	No	No	No	no
	%	%	%	%	%	%	%	%
Q 5	Sex		Certificate				Field	
Agree	66	102	28	85	2	53	119	49
	43.13	42.85	41.79	36.79	22.22	63.09	39.5	54.44
I don't know	3	15	1	11	4	2	4	14
	1.960	6.302	1.492	4.761	44.44	2.380	1.32	15.55
Disagree	9	14	2	19	1	1	17	6
	5.882	5.882	2.985	8.225	11.11	1.190	5.64	6.666
Totally disagree	19	13	4	22	1	5	27	5
	12.41	5.462	5.970	9.523	11.11	5.952	8.97	5.555
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%
Means					Standard .Deviation			
3.9					0.8			

Table (4) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Appropriate skills in use The TQM application in higher education generates the ability to create websites for the organization.) with a mean of (3.9) This means the direction of this paragraph towards (Appropriate skills in use The TQM application in higher education generates the ability to create websites for the organization.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (0.8) and this result of the responses of the respondents.

5. Obtain new information by using the TQM application in higher education to investigate educational goals.

	F	M	Master	BSc	PHD	DIPLOMA	management	Others
	No	no	no	No	no	No	No	No
	%	%	%	%	%	%	%	%
Q6	Sex		Certificate				Field	
	F	M	Master	B.Sc.	PHD	DIPLOMA	management	Others
Totally agree	No 36 % 41	No 60 % 40	No 25 % 17	No 63 % 76	No 19 % 2	No 40 % 6	No 31.16 % 81	No 33.33 % 20
	know 3 26	79 44	25 21	21 25	87 44	32.90 22.22	7.142 26.9	5 27
	Disagree 22 22	73 17	22 42	31.34 4	19.04 5	44.44 6	.142 48	18.9 17
		15.03	17.64	5.970	23.80	0.00	7.142	15.9	18.88	20.0
Totally disagree	9	30	5	23	1	10	33	6
	5.882	12.60	7.462	9.956	11.11	11.90	10.9	6.666
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%
Means			Standard .Deviation					
3.7			1.6					

Table (5) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Obtain new information by using the TQM application in higher education to investigate educational goals..) with a mean of (3.7) This means the direction of this paragraph towards (Obtain new information by using the TQM application in higher education to investigate educational goals.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.6) and this result of the responses of the respondents.

Agree	51	94	16	96	2	31	114	31
	33.33	39.49	23.88	41.55	22.22	36.90	37.8	34.44
I don't know	32	46	15	36	2	25	55	23
	20.91	19.32	22.38	15.58	22.22	29.76	18.2	25.55
Disagree	26	33	10	31	1	17	47	12

Q 7	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	Public Rela.	others
	No. 65.5	no. 10.08	no. 7.462	no. 10.38	no. 0.00	No. 5.932	No. 9.30	No. 6.666
	% 153	% 238	% 67	% 231	% 9	% 84	% 301	% 90
	100%	100%	100%	100%	100%	100%	100%	100%
Means			Standard .Divination					
3.7			1.7					

6. The use of the TQM application in advanced higher education requires the need for skilled and capable cadres to deal with their characteristics

Table (6) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (The use of the TQM application in advanced higher education requires the need for skilled and capable cadres to deal with their characteristics) with a mean of (3.7) This means the direction of this paragraph towards (The use of the TQM application in advanced higher education requires the need for skilled and capable cadres to deal with their characteristics.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.7) and this result of the responses of the respondents.

7. Completion of most of the functions University administration requires high functional skills through the application of TQM in higher education.

Totally agree	81	131	40	122	3	47	175	37
	52.94	55.04	59.70	52.81	33.33	55.95	58.1	41.11
Agree	49	77	22	66	4	34	89	37
	32.02	32.35	32.83	28.57	44.44	40.47	29.5	41.11

Q 8	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	Management	others
	No	No	No	No	No	No	No	No
	%	%	%	%	%	%	%	%
disagree	8	11	1	16	0	2	14	5
	5.288	4.621	1.492	6.926	0.00	2.380	4.65	5.555
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%

Means	Standard .Deviation
3.6	0.8

Table (7) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Completion of most of the functions University administration requires high functional skills through the application of TQM in higher education.) with a mean of (3.6) This means the direction of this paragraph towards (Completion of most of the functions University administration requires high functional skills through the application of TQM in higher education..) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (0.8) and this result of the responses of the respondents.

8. I feel that the application of TQM in higher education is declining as scientific developments increase.

Totally agree	69	80	32	94	1	22	143	6
	45.09	33.61	47.76	40.69	11.11	26.19	47.5	6.666
Agree	44	77	14	78	2	27	87	34
	28.75	32.35	20.89	33.76	22.22	32.14	28.9	37.77
Q9	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	Management	others
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
disagree	7.189	7.142	5.970	6.926	11.11	8.333	2.32	23.33
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%
Means					Standard .Deviation			
4.7					1.8			

Table (8) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (I feel that the application of TQM in higher education is declining as scientific developments increase.) with a mean of (4.7) This means the direction of this paragraph towards (I feel that the application of TQM in higher education is declining as scientific developments increase.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.8) and this result of the responses of the respondents.

9. Many hours were wasted when using technology developments in the application of TQM in higher education such as the Internet.

Totally agree	50	54	18	67	3	16	63	41
	32.67	22.68	26.86	29.00	11.11	19.04	20.9	45.55
Agree	67	109	34	82	3	57	158	18
	43.79	45.79	50.74	35.49	33.33	67.85	52.4	20.00
I do kno	Q 10	Sex		Certificate				Field	
		F	M	Master	BSc	PHD	DIPLOMA	management	others
Dis		11	5	8	8	0	7	6	13
		1 %	3 %	5 %	3 %	0 %	2 %	33 %	11 %
Tot dis	Totally agree	7. 89	13 86	7	16	3	16	70	34
		26	28	26.86	29.00	33.33	19.04	23.2	37.77
Total		133	238	67	231	9	84	301	90
		100%	100%	100%	100%	100%	100%	100%	100%
Means				Standard .Deviation					
4.1				1.1					

Table (9) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Many hours were wasted when using technology developments in the application of TQM in higher education such as the Internet..) with a mean of (4.1) This means the direction of this paragraph towards (Many hours were wasted when using technology developments in the application of TQM in higher education such as the Internet..) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.1) and this result of the responses of the respondents.

10. It is difficult to evaluate and analyze the application of TQM in higher education without the use of advanced technology

Agree	73	103	34	82	3	57	158	18
	15.03	43.27	50.74	35.49	33.33	67.85	52.4	20.00
I don't know	11	25	4	26	3	3	21	15
	7.189	10.50	5.970	11.25	33.33	3.571	6.97	16.66

Q 11	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	management	others
	No	no	no	No	no	No	No	no
	%	%	%	%	%	%	%	%
Totally agree	31	46	8	57	0	12	87	13
	20.26	19.32	11.94	24.67	0.00	14.28	28.9	14.44

Means	Standard Deviation
4.2	1.7

Table (10) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (It is difficult to evaluate and analyze the application of TQM in higher education without the use of advanced technology.) with a mean of (4.2) This means the direction of this paragraph towards (It is difficult to evaluate and analyze the application of TQM in higher education without the use of advanced technology.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.7) and this result of the responses of the respondents.

11. Has been able to implement TQM in higher education in institutions from the process of technological developments in its field of work

Agree	64	78	39	79	1	23	98	21
	41.83	32.77	58.20	34.19	11.11	27.38	32.5	23.33
I don't know	24	39	8	30	6	19	44	19
	15.68	16.38	11.94	12.98	66.66	22.61	14.6	21.11
Disagree	13	39	4	31	1	16	31	21
Q12	Sex		Certificate				Field	
	F	M	Master	B.Sc.	PHD	DIPLOMA	management	others
	15.72	15.12	11.94	14.71	11.11	16.66	15.6	17.77
	153	238	67	231	9	84	301	90
Totally	64	61	16	32	5	22	77	25
Means				Standard .Deviation				
4.6				1.6				

Table (11) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Has been able to implement TQM in higher education in institutions from the process of technological developments in its field of work.) with a mean of (4.6) This means the direction of this paragraph towards (Has been able to implement TQM in higher education in institutions from the process of technological developments in its field of work.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.6) and this result of the responses of the respondents.

12. Affects the application of TQM in higher education to facilitate the work of administrative and educational components in the institution

agree	22.22	25.63	23.88	22.51	55.55	26.19	23.2	27.77
Agree	74	88	32	98	3	29	147	13
	48.36	36.97	47.76	42.42	33.33	34.52	48.8	14.44
I don't know	28	21	8	27	1	13	30	19
	18.30	8.823	11.94	11.68	11.11	15.47	9.96	21.11
Disagree								
Totally disagree								
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%

Q13	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	Management.	others
	No 30	no 7	no 22	no 0	no 0	No 9	No 24	no 14
	% 12.60	% 10.44	% 9.52	% 0.00	% 0.00	% 10.71	% 7.97	% 15.55

Means	Standard .Deviation
4.4	1.2

Table (12) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Affects the application of TQM in higher education to facilitate the work of administrative and educational components in the institution) with a mean of (4.4) This means the direction of this paragraph towards (Affects the application of TQM in higher education to facilitate the work of administrative and educational components in the institution) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.2) and this result of the responses of the respondents.

13. The application of TQM in higher education affects the integration of basic functions of university administration

Totally agree	27	40	12	31	0	24	51	16
	17.64	16.80	17.91	13.41	0.00	28.57	16.9	17.77
Agree	68	72	35	100	2	3	130	10
	44.44	30.25	52.23	43.29	22.22	3.571	43.1	11.11
I don't know	38	56	13	45	2	34	56	38
	24.83	23.52	19.40	19.48	22.22	40.47	18.6	42.22

Q 14	Sex		Certificate				Field	
	F	M	Master	B.Sc.	PHD	DIPLOMA	Management	others
agree	No	no	No	No	no	No	No	no
tal	%	%	%	%	%	%	%	%
Totally	22	43	11	28	0	24	41	24
	100%	100%	100%	100%	100%	100%	100%	100%

Means	Standard .Deviation
4.2	1.6

Table (13) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (The application of TQM in higher education affects the integration of basic functions of university administration) with a mean of (4.2) This means the direction of this paragraph towards (The application of TQM in higher education affects the integration of basic functions of university administration) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.6) and this result of the responses of the respondents.

14. University administration affects the way and methods of assessment the application of TQM in higher education in the institution as a basis for evaluating the effectiveness of the system

agree	14.37	18.06	16.41	12.12	22.22	28.57	13.6	26.66
Agree	49	67	25	83	3	1	98	18
	32.02	28.15	37.31	35.93	33.33	1.190	32.5	20.00
I don't know	31	52	12	50	2	19	66	17
	58.49	21.84	17.91	21.64	22.22	22.61	21.9	18.88

Q15	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	management	others
e	No 5.535	No 8.823	5.070	5.194	0.00 no	7.85 No	6.64 No	12.22 no
	% 153	% 238	% 67	231 %	9 %	84 %	301 %	90 %
Totally	23 100%	40 100%	10 100%	49 100%	100% 2	100% 2	100% 47	100% 16

Means	Standard .Deviation
3.7	1.8

Table (14) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (University administration affects the way and methods of assessment the application of TQM in higher education in the institution as a basis for evaluating the effectiveness of the system) with a mean of (3.7) This means the direction of this paragraph towards (University administration affects the way and methods of assessment the application of TQM in higher education in the institution as a basis for evaluating the effectiveness of the system) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.8) and this result of the responses of the respondents.

15. Networks in the organization such as the Internet and traditional means of communication have an influential role in integration Application of Total Quality Management in Higher Education

agree	15.03	16.80	14.92	21.21	22.22	2.380	15.6	17.77
Agree	51	63	24	75	2	13	101	13
	33.33	26.47	35.82	32.46	22.22	15.47	33.5	14.44
I don't	32	57	12	51	2	24	50	39

Q 16	Sex		Certificate				Field	
	F	M	Master	B.Sc.	PHD	DIPLOMA	Management.	others
	22.87 No	17.64 No	19.40 No	13.85 No	33.33 No	34.52 No	21.9 No	12.22 No
	12%	36%	8%	%24	% 0	%16	%37	%11
Totally	7.843 6	15.12 14	11.94 3	10.38 11	0.00 0	19.04 4	12.2 14	12.22 6
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%

Means	Standard .Deviation
3.9	1.7

Table (15) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Networks in the organization such as the Internet and traditional means of communication have an influential role in integration Application of Total Quality Management in Higher Education) with a mean of (3.9) This means the direction of this paragraph towards (Networks in the organization such as the Internet and traditional means of communication have an influential role in integration Application of Total Quality Management in Higher Education) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.7) and this result of the responses of the respondents.

16. Effect the application of TQM in higher education to improve and develop the internal control system in the institution

agree	3.921	5.882	7.462	4.761	0.00	4.761	4.65	6.666
Agree	22	41	7	41	5	10	41	22
	14.37	17.22	10.44	17.74	55.55	11.90	13.6	24.44
I don't	31	40	6	52	1	12	55	16
Totally	7.84	6.302	5.97	5.194	0.00	15.09	6.97	6.666
Total	153	238	67	231	9	84	301	90
	100%	100%	100%	100%	100%	100%	100%	100%
Means			Standard .Deviation					
3.00			1.8					

Q17	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	management	others
	No	No	no	No	no	No	No	no
	12	15	4	12	0	1	27	8
	7.84%	6.302%	5.97%	5.194%	0.00%	15.09%	6.97%	6.666%

Table (16) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' Effect the application of TQM in higher education to improve and develop the internal control system in the institution) with a mean of (3.00) This means the direction of this paragraph towards (Effect the application of TQM in higher education to improve and develop the internal control system in the institution) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.8) and this result of the responses of the respondents.

17. The application of TQM in higher education is of great importance to all educational institutions.

agree	12.41	16.80	13.43	15.15	22.22	15.47	16.9	8.888
Agree	46	73	28	77	3	11	77	42
	30.06	30.67	41.79	33.33	33.33	13.09	25.5	46.66
I don't know	55	60	15	70	2	28	104	11

Q18	Sex		Certificate				Field	
	F	M	Master	B.Sc.	PHD	DIPLOMA	management	others
	No	No	No	No	no	No	No	no
	%	%	%	%	%	%	%	%
Totaly agree	28	41	13	36	2	18	31	10
	18.30 100%	17.22 100%	19.40 100%	15.58 100%	22.22 100%	21.41 100%	16.9 100%	20.00 100%
Agree	67	78	21	88	4	32	120	25
	43.79	32.77	31.34	38.09	44.44	38.09	39.8	27.77

Mean: Standard .Deviation

Table (17) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (The application of TQM in higher education is of great importance to all educational institutions.) with a mean of (3.9) This means the direction of this paragraph towards (The application of TQM in higher education is of great importance to all educational institutions.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.4) and this result of the responses of the respondents.

18. Successful educational institutions have developed systems for implementing TQM in higher education

I don't know	42	61	24	59	2	18	77	26
	27.45	25.63	35.82	25.54	22.22	21.41	25.5	28.88
Disagree	11	42	5	37	1	10	39	14
	7.189	17.64	7.463	16.01	11.11	11.90	12.9	15.55
Q 19	Sex		Certificate				Field	
	F	M	Master	BSc	PHD	DIPLOMA	management	others
	No	No	No	No	no	No	No	no
	%	%	%	%	%	%	%	%
Totally agree	41	70	12	86	2	11	90	21
	26.79	29.41	17.91	37.22	22.22	13.09	29.9	23.33

Means 4.4 Standard .Deviation 1.1

Table (18) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (Successful educational institutions have developed systems for implementing TQM in higher education.) with a mean of (4.4) This means the direction of this paragraph towards (Successful educational institutions have developed systems for implementing TQM in higher education.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.1) and this result of the responses of the respondents.

19. By using and implementing TQM in higher education you will get the best ideas

Agree	71	125	50	93	3	50	161	35
	46.40	52.52	74.62	40.25	33.33	59.52	53.4	38.88
I don't know	20	20	3	24	1	12	23	17
	13.07	8.403	4.477	10.38	11.11	14.28	7.64	18.88

Q 20	Sex		Certificate				Field	
	F	M	Master	B.Sc.	PHD	DIPLOMA	management	others
	No 3	No 6	No 0	no 5	no 1	No 3	No 6	no 3
	% 1.960	% 2.521	% 0.00	% 2.164	% 11.11	% 3.571	% 1.99	% 3.333
Totally agree	total 47 153	69 238	23 67	65 231	3 9	25 84	304 92	90 24
	30.71 100%	28.99 100%	34.32 100%	28.12 100%	33.33 100%	29.76 100%	30.5 100%	26.66 100%
Agree	81	93	27	115	4	28	143	31
	Means 4.6				Standard Deviation 1.4			

Table (19) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (By using and implementing TQM in higher education you will get the best ideas.) with a mean of (4.6) This means the direction of this paragraph towards (By using and implementing TQM in higher education you will get the best ideas.) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.4) and this result of the responses of the respondents.

20. The application of TQM in higher education is the basis for the development of educational performance

	52.94	39.07	40.29	49.78	44.44	33.33	47.5	34.44
I don’t know	21	38	9	28	2	20	38	21
	13.72	15.96	13.43	12.12	22.22	23.80	12.6	23.33
Disagree	3	30	6	18	0	9	21	12
	1.960	12.60	8.955	7.792	0.00	10.71	6.97	13.33
Totally disagree	1	8	2	5	0	2	7	2
	0.653	3.361	2.985	2.164	0.00	2.380	2.32	2.222
Total	153	238	67	231	9	84	301	90
	No	No	no	no	No	No	No	No
Means					Standard .Deviation			
3.9					1.3			

Table (20) shows the frequency and proportionality of the first question for all respondents 'answers according to gender, age, functional service, certificate, as well as specialized sections and non-competent sections. The table reflects the arithmetical mean and the standard deviation of one of the indicators of this variable for respondents' (The application of TQM in higher education is the basis for the development of educational performance.) with a mean of (3.9) This means the direction of this paragraph towards (The application of TQM in higher education is the basis for the development of educational performance) most of them agree with the content of the question according to the views of the respondents And the standard deviation of (1.3) and this result of the responses of the respondents.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study reached the following conclusions:

1. Acquiring good skills in the use and application of TQM in higher education generates their ability to use the Internet more efficiently.

2. There is a strong relationship between the application of TQM and increasing the efficiency of TQM performance in educational institutions.

3. The existence of specialized cadres skilled and able to deal with the characteristics of the application of TQM has a major role in achieving the functions of TQM in educational institutions.

4. Through the analysis data show that the majority of the respondents emphasize that the communication networks in the institution, such as the Internet and traditional means of communication have an influential role in the integration of the application of TQM in higher education.

5. Ensure that the application of TQM in tertiary education has a profound effect on the methods and methods of assessing the information systems in the institution as a basis for evaluating the effectiveness of the application of TQM in higher education.

6. We found that the application of TQM in higher education affects the improvement and development of the system of internal control in the institution and facilitate the work associated with it.

7. Finally, TQM systems in higher education in educational institutions have been able to keep abreast of the technological developments in the field of its work, whether for employees within the institution or for citizens who deal with educational institutions.

Recommendations

In view of the foregoing conclusions, it is possible to propose the following:

1. The need to develop, modernize and set up computer centers in higher education institutions, which have not changed in a desired manner through the use of modern and advanced technologies.

2. Improving the performance of employees both by providing programs and training courses to equip employees with the skills of using modern technology and advanced.

3. Providing information programs that focus on the intensive use of technology to facilitate the work of educational institutions.

4. Cooperation of all internal and foreign technological events to sensitize employees to take advantage of the possibilities of technology available in higher education institutions.

5. Interest in formulating a balanced policy to develop the performance and application of TQM in higher education in educational institutions in accordance with the needs of employees and clients with institutions of higher education.

6. Preparing competent cadres in higher education institutions in new technology work systems and implementing TQM in higher education.

7. The importance of studying and monitoring the developments in the IT systems that are directly related to implement TQM in higher education and try to benefit from it in providing the appropriate information to all parties with the appropriate quality and timing.

8. Work on developing and increasing the skills of employees in the use and application of TQM in higher education for all employees who are able to deal and know their characteristics.

9. It is necessary to provide educational institutions with modern communication networks and other means of communication such as networks and computers that integrate the system and the application of TQM in higher education.

10. The researchers propose to pay attention to the development of the available technology for the application of TQM in higher education in higher education institutions, to adapt what is new to them and to create what can be produced by itself.

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Appendix

General Questions (Questionnaire Form)

Note: - Put the right place √ do not need to write first the name tag: Personal Questions

1. Gender: **Male** □ **Female** □

N	Questions	Totally agree	agree	Not sure	I do not agree	I do not agree totally

2. Marital status: Single □ Married □

3. Age: less than 30 years □ from 40- 49 □ years 30-39 □ more than 50 □

4-- Number of years of service: - less than 5 years □ 5-9 years □ from 10-14 years □
More than 15 □

5. Academic Achievement: - Bachelor □ High diploma □ Master □ Ph.D. □

6. General jurisdiction:.....

7. Current job title:…….

1	Attention to the application of TQM in higher education leads to the improvement and achievement of management objectives					
2	Paying attention to using the TQM application in higher education appropriately needs to train administrators					
3	Having good skills in using TQM in higher education generates the ability to use the Internet better					
4	Appropriate skills in use The TQM application in higher education generates the ability to create websites for the organization					
5	Obtain new information by using the TQM application in higher education to investigate educational goals					
6	The use of the TQM application in advanced higher education requires the need for skilled and capable cadres to deal with their characteristics					
7	Completion of most of the functions University administration requires high functional skills through the application of TQM in higher education...					
8	I feel that the application of TQM in higher education is declining as scientific developments increase					
9	Many hours were wasted when using technology developments in the application of TQM in higher education such as the Internet					
10	It is difficult to evaluate and analyze the application of TQM in higher education without the use of advanced technology					
11	Has been able to implement TQM in higher education in institutions from the process of technological developments in its field of work					
12	Affects The application of TQM in higher education to facilitate the work of administrative and educational components in the institution.					
13	The application of TQM in higher education affects the integration of basic functions of university administration					
14	University administration affects the way and methods of assessment The application of TQM in higher education in the institution as a basis for evaluating the effectiveness of the system					
15	Networks in the organization such as the Internet and traditional means of communication have an influential role in					

	integration Application of Total Quality Management in Higher Education					
16	Effect The application of TQM in higher education to improve and develop the internal control system in the institution					
17	The application of TQM in higher education is of great importance to all educational institutions.					
18	Successful educational institutions have developed systems for implementing TQM in higher education					
19	By using and implementing TQM in higher education you will get the best ideas					
20	The application of TQM in higher education is the basis for the development of educational performance					