**HEBRON UNIVERSITY**

**COLLEGE OF GRADUATE STUDIES**

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# Assessing the possibility of implementing the requirement of quality management system according to ISO 9001:2008 in nongovernmental institutions. Case study: Public Palestinian Universities in West Bank.

# دراسة امكانية تطبيق متطلبات نظام إدارة الجودة وفقا لمعايير ISO 9001:2008 في المؤسسات الغير حكومية. دراسة حالة: الجامعات الفلسطينية العامة في الضفة الغربية

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# DEDICATION

Every challenging work needs self efforts as well as guidance of elders especially those who are very close to our heart. My humble effort I dedicate to my parents whose affection, love, encouragement and endless support make me able to get such success and honor.

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## ABSTRACT

The purpose of this study is to assess the extent of implementing quality management system in Public Palestinian Universities in West Bank according to ISO 9001:2008 requirements. The researcher chose to carry out a concurrent triangulation mixed method research design. The study encompassed qualitative as well as quantitative research. This approach helped the overall analysis and depth of the problem researched in Public Palestinian Universities. The population of this research is defined as all academic employees including deans, chair persons, quality managers, and teachers in Public Palestinian Universities in West Bank. For the quantitative method the researcher selected a proportional stratified non random sample from academic teachers. For the qualitative method the researcher selected a purposive stratified non random sample from quality managers. The sample that the researcher selected in the quantitative method contained 204 academic employees out of 465 which represent 44% of the population from deans, chairpersons, and teachers in different faculties in Bethlehem University, Hebron University, and Palestine Polytechnic University. The researcher conducted interviews with quality managers, who were three individuals, one from each university. The findings indicated that Public Palestinian Universities were strong in the area of product realization and management responsibility but need improvements in the area of quality management documentation, resource management and monitoring and measurement improvement. It also revealed insufficient funding which has a negative impact on the quality of higher education, lack of highly qualified professionals in the field of quality, lack of knowledge of self-assessment mechanisms, lack of knowledge of continuous improvement methods, lack of adequate space, poor pay structure and lack of incentives for the teachers for professional growth and performance, and centralized decision making. Universities need to transform their institution's culture into a total quality culture. There should be cross linkage and well communication between the various functional departments. The research adds recommendations for quality assurance in Public Palestinian Universities and proposed a TQM implementation framework following the guidelines of quality management system for the application of ISO 9001 in education to create an efficient quality management system which encourage the universities for continual growth.

**الملخص**

إن هدف هذه الدراسة هو التعرف على مدى تطبيق نظام إدارة الجودة في الجامعات الفلسطينية العامة في الضفة الغربية وفقا لمتطلبات ISO 9001:2008. إختارت الباحثة تطبيق منهج البحث العلمي المختلط الذي يضم البحث الكمي والبحث النوعي في ذات الوقت. و قد ساعد هذا النهج في التحليل الكلي وبحث أعماق المشكلة التي يتم البحث فيها في الجامعات الفلسطينية. يتمثل مجتمع البحث من كافة الموظفين الأكاديميين بما في ذلك عمداء الكليات ورؤساء الأقسام و مدراء الجودة و الأساتذة الأكاديميين في الجامعات العامة في الضفة الغربية. فيما يتعلق بالبحث الكمي إختارت الباحثة عينة طبقية نسبية غير عشوائية من الأساتذة الأكاديميين. أما بالنسبة للبحث النوعي فقد إختارت الباحثة عينة قصدية غير عشوائية من مدراء وحدات الجودة. تضم العينة الكمية 204 موظف أكاديمي من 465 و التي تمثل 44% من مجتمع البحث الذي يشمل عمداء الكليات ورؤساء الأقسام والأساتذة الأكاديميين في الكليات المختلفة من جامعة بيت لحم وجامعة الخليل وجامعة البوليتكنك فلسطين. كما وقامت الباحثة بإجراء مقابلات مع مدراء الجودة و عددهم ثلاثة؛ واحد من كل جامعة .أشارت النتائج إلى أن الجامعات الفلسطينية العامة كانت قوية في مجال إدراك و تحقيق المنتج والمسؤولية الإدارية؛ ولكنها تحتاج إلى التحسين في مجال توثيق نظام إدارة الجودة وإدارة الموارد والرقابة وقياس التحسين. كما وأظهرت عجز في تمويل الجامعات مما له أثر سلبي على جودة التعليم العالي و قلة الفنيين المؤهلين في مجال الجودة و نقص في معرفة آليات التقييم الذاتي وطرق التحسين المستمر ونقص المساحة المناسبة و ضعف جدول الأجور و نقص الحوافز لتطوير الأداء الوظيفي ومركزية صنع القرار. تحتاج الجامعات إلى تحويل الثقافة الخاصة بها إلى ثقافة الجودة الشاملة و أن يكون هناك ربط و تواصل جيد بين الإدارات الفنية المختلفة. كما وأضافت الباحثة توصيات لضمان الجودة في الجامعات الفلسطينية العامة و اقترحت نموذج لتطبيق إدارة الجودة الشاملة وفقا للمبادئ التوجيهية لنظام إدارة الجودة لتطبيق ISO 9001 في التعليم لإنشاء نظام إدارة جودة يشجع الجامعات على النمو المستمر.

# DEFINITION OF SIGNIFICANT TERMS

**A student**: refers to a learner or someone who attends an educational institution and a partner

**Customer:** refers to the society.

**Quality**: the consistent conformance of product or service to a given set of standards or expectations.

**Quality assessment**: overall system of monitoring activities which provides assurance that the quality control is performed effectively and the evaluation of environmental data comprised of data verification and data quality assessment meet the quality criteria needed.

**Quality assurance**: system of activities involving planning, quality control, and quality assessment, reporting and quality improvement to ensure that a service or product meets defined standards of quality with a stated level of confidence.

**Quality assurance management**: all activities of the overall management function that determines and implements quality policy, objectives and responsibilities.

**Quality manager**: individual designated by top management who has the defined authority and obligation to ensure that the requirements of the quality assurance system are implemented and maintained.

**Quality audit**: systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve the objectives.

**Quality Circle:** a small group of individuals from an organization or unit who have related interests and meet regularly to consider problems or other matters related to the quality of the product or process.

**Quality control**: overall system of activities whose purpose is to measure and control the quality of a product or service and modify so that it meets the needs and requirements. The aim is to provide quality that is satisfactory, adequate, dependable and economical.

**Internal quality control**: set of procedures undertaken for continuous monitoring of operations and results in order to decide whether the results are reliable.

**Quality improvement:** actions taken throughout the organization to increase the effectiveness and efficiency of activities and processes in order to provide added benefits to both the organization and its customer.

**Quality management**: all activities of the overall management function that determines the quality policy, objectives and responsibilities, and implement them by means such as quality planning , quality control, quality assurance, and quality improvement within the quality system.

**Quality management system(QMS):** documentation of policies, systems, procedures and instructions to the extent necessary to assure the quality of its results, to meet requirements and to satisfy the needs of the customer.

**Quality planning:** activities that establish the objectives and requirements for quality and for the application of quality system elements.

**Quality manual**: Document stating the general quality policies, procedures and practices of an organization.

**Quality policy**: overall intentions and direction of an organization with regard to quality as formally expressed by top management.

**Quality standard**: The standard lists a set of requirements which must be fulfilled in order to be accredited to the standard by an external accreditation body.

**Quality system**: a structured and documented management system describing the policies , objectives , principles , organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products, and services. The quality system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required Quality assurance and Quality circles.

**Stakeholders**: they are affected by the outcome of university activities. Governments, presidents and administrators, faculty and staff, board of trustees, parents and students,

suppliers, competitors, donors, communities, government regulators, non-governmental regulators, financial intermediaries, and joint venture partners.

# Chapter One

# INTRODUCTION

## 1.1 Introduction

In the past higher education institutions had to compete locally and regionally because of the geographical limitation, now with the help of technology and ease of travel, universities need to think and act globally in order to survive. To enhance their competitiveness many universities turn to high quality level of education and research to increase their reputation. In addition, many of them work to improve the quality of their internal systems and processes to gain operational effectiveness as well as strategic position (Paunescu&Fok, 2005). The rapid changes in the business environment and the pressures from the global competition have led several institutions to pay attention to adopt the concept of total quality management to achieve their competitive advantage. Therefore, several calls have been made by international and regional institutions to focus on higher education institutions as the body directly responsible for building the human resources and society (Elgobbi, 2014).

Total quality management is assigned to play a major role in education and the continuous enhancement of quality. It becomes an important and long-term goal for educational establishments on all levels. Higher education institutions are focusing more and more on quality management activities to compete locally and globally (Schmitt, Grabler, &Beaujean, 2014).

Total quality management is a strategy that facilitates institutions to achieve and sustain competitive advantage. This philosophy provides holistic approach to aim continuous improvement in all dimensions. The implementation of total quality management significantly improves quality of products, services and processes, increases satisfaction of employees and society and leads to institutional performance in financial and nonfinancial dimensions (Khan, 2011).

One of the purposes of implementing the quality management system within an institution is to establish its processes within a system and encourage it to seek the objectives suitable to the university mission and vision (Sencila&Skipariene, 2007). Designing the effective

internal system of quality assurance in education is one of strategic elements in the development of the university (Roszak, 2009).

Higher education institutions are concerned about ensuring and improving the quality of their services and satisfying society's expectations and requirements. These concerns have led to implement a quality management system with compliance to the ISO 9001 standard which is a popular choice for educational organizations (El Abbadi, Bouayad, &Lamrini, 2014).

The ISO 9001 standard can be applied to every type of industry and service and to all organization sizes. As a result of its applicability to a variety of organizations, it has attracted service organizations. In many countries certain service sectors have experienced a strong growth in ISO 9001 certificates like education, health service, hotels, social services and activities and public administration (Psomas, 2013). ISO 9001 is increasingly used by higher education institutions as an active option in implementing quality assurance practices (El Abbadi, Bouayad, &Lamrini, 2014). ISO 9001:2008 international standards specify the requirements for quality management system where an academic institution needs to demonstrate its ability to consistently provide the proper educational design and development, educational delivery process, procedures for implementation and the measurement of results. Therefore ISO 9001: 2008 certifications are needed for an academic institution. These institutions follow process approach of transforming inputs as students into matured human resources being capable of taking proper decision and solving problems to help in improving the society and nation (Nath De, 2010).

Most of the Palestinian universities are nongovernmental institutions. In Palestine the name of these nongovernmental institutions is public. This expression refers to their establishment under a public law, not their type of funding or governance. The public or nongovernmental institutions are financed by local public or private funding and sometimes by religious or foreign nongovernmental organization which is the case for most Palestinian universities (Taweel, 2007).

Many public universities in Kenya have started the ISO 9001 certification process to remain competitive. ISO 9001 is part of a series generally referred to as ISO 9000 where an ISO 9000 registration means that an organization's quality management system meets the requirements of the standard as issued by the international organization for

standardization. ISO certification in public universities is acting as an award of excellence, helping constantly reviewing organizational structure, improving industrial based learning, improving general institutional publicity (public Awareness) and helping student placement after a course (post training). Moreover it leads to teaching facilities improvement which ensures quality in teaching and also helps in cost cutting measures. Also, university's physical facilities, including teaching and recreational facilities, determine student enrolment and the number of academic programs it can offer (Okibo&Kimani, 2013).

## 1.2 Problem Statement

Quality is the indicator of the effectiveness of the higher education institutions, and the function of their competitive advantages. However, the attention and interest to quality does not only depend on the quality of the final service provided, but also on the quality of the entire institution. This is what has been indicated in the international standards of ISO 9001:2008 in order to ensure that the requirements of the beneficiary are met (Elgobbi, 2014). The main problem is inefficient educational quality management system in the developing and emerging countries which is one of the biggest obstacles in education developments and to the economic development. This is because the administrators forget to tie service delivery with predetermined performance standards. They are not paying attention to implement and monitor their quality standards as they give to formulating these standards. A minority of universities has a coherent and comprehensive quality management system that can link different methods and as a result creates synergies for the management in higher education(Roszak, 2009; Khalil, 2014; Sencila&Skipariene, 2007; Okibo&Kimani, 2013; Schmitt, Grabler, &Beaujean, 2014; Losse, Beaujean, & Schmitt, 2014; Altahayneh, 2014)

The management of higher education institutions in the Arab world lacks the effectiveness, lack the understanding of what total quality management is and slows implementing the total quality management criteria, the uniqueness of the senior management of decision making with the absence of participation by academic and administrative members as well as students in the process of decision making , and universities resistance to change and development, lack of excellence and creativity, highly centralized control by Ministry of

Higher Education results in very little autonomy to universities thus restrain initiative and innovation, very limited financial support from government and other sources; lack of understanding what total quality management is and slow implementation of total quality management criteria (Abu- Al- Sha'r, 2013). In other words, in seeking the quality perceptions and satisfactions of customers and society, a higher education institution does nothing but trying to improve its service (Mashagba, 2014). Adoption of total quality management in the application of the requirements of the required specifications that are appropriate to the nature of the institution's activities in order to get the ISO 9001:2008 will help institutions of higher education maintain their competitiveness, eliminate inefficiencies in the organization, help focus on the market needs, achieve high performance in all areas, and satisfy the needs of society (Wani&Mehraj, 2014; Elgobbi, 2014). Therefore, the problem statement is summarized in the following question:

"**Do Public Palestinian Universities implement the requirement of quality management system and to what extent does it comply with international standard of ISO 9001:2008?"**

## 1.3 Significant of the Study

The importance of this study derived from the implementation of the principles of total quality management. Total quality management considered as one of the most important tools in measuring the effectiveness of the universities work. Through using of a total quality management, the university can produce a product -student- that performs according to its stated promises. Using of total quality management to improve the quality of the outputs of the universities and to design a new programs and requirements that feeding the marketplace with suitable workforce. It is very important to adopt total quality management principles not only for making profits but also for survival. Total quality management provides the logical, coherent structure and scientific tools for the enhancement and improvement of quality (Elgobbi, 2014).Therefore, this study aims to measure to what extent Public Palestinian Universities are applying quality management requirements according to ISO 9001:2008 standards and how this implementation will affect the output of these universities. This study is expected to find out how to support the implementation of total quality management concepts at Palestinian public universities. Since this concept is one of the most recent concepts in higher education in developing

countries, Palestinian public universities could benefit from the tools that total quality management offers to gain advantage and in improving its ranking and quality (Wani&Mehraj, 2014).

The very essential reason for formulating this research is to help higher education institutions to implement the concepts of total quality management (TQM) that is when applied, with strong leadership support, TQM leads to continuous improvement in management systems, processes, products and services, and results in delighted partners, customers and society (Ahmed &Siddiek, 2012). The output of this research paper is directed towards informing higher education institutions how to use basic quality tools to manage and improve processes. Once the basic tools are mastered, higher education institutions are able to determine if their processes are capable of meeting customer requirements. If processes are capable, higher education institutions know how to standardize the process to assure stable and capable performance. If processes are found to be not, then higher education institutions will know how to use TQM model to being improving the processes so that they meet society requirements (Bhalla, 2012).

If institutions really want to improve quality in their higher education system then it is necessary for them to focus on the concept of total quality management. This study may provide some advantage to all parties involved in the development of higher education institutions such as Palestinian Ministry of Higher Education and Ministry of Labor.

## 1.4 Purpose of the Study

The purpose of this concurrent triangulation mixed method study is to better understand the implementation of quality management system requirements according to ISO 9001:2008 in Public Palestinian Universities in West Bank. In this study the questionnaire is used to examine to what extent the current quality management system in Public Palestinian Universities apply quality management system according to the specification of ISO 9001:2008. At the same time a qualitative exploration of the practice of quality management system in Public Palestinian Universities in the West Bank is compared to the requirement of ISO 9001:2008 by collecting information through interviews from head of quality managers at Public Palestinian Universities. The reason for combining both quantitative and qualitative data is to better understand the research problem by converging

both quantitative and qualitative data and better explore the practice of quality management system in Public Palestinian Universities in West Bank.

## 1.5 Research Objectives:

1. To study the current quality system in Public Palestinian Universities for the application of quality management system according to the specification of ISO 9001:2008 by identifying the gap between the current reality of quality and what is required to be achieved.

2. To find out the weaknesses and challenges which prevent the implementation of quality management system requirements according to ISO 9001:2008 in order to accomplish the total application of these requirements.

3. To find out the differences between Public Palestinian Universities in implementing quality management system requirements according to ISO 9001:2008.

4. To find out the differences between Public Palestinian Universities in weaknesses and challenges that prevents the implementation of quality management system requirements according to ISO 9001:2008.

5. To find out the benefits of implementing quality management system requirements according to ISO 9001:2008 in Public Palestinian Universities.

6. To suggest recommendations and solutions that help administration of Public Universities to improve the level of service quality and to continue the process of continuous improvement of their services.

## 1.6 Research Questions:

1. What is the current quality system applied in Public Palestinian Universities regarding the requirements of quality management system and to what extent does it comply with the international standard of ISO 9001:2008?

2. What are the weaknesses and challenges that prevent the implementation of quality management system requirements according to ISO 9001:2008 in order to accomplish the total application of these requirements?

3. What are the differences between Public Palestinian Universities in implementing quality management system requirements according to ISO 9001:2008?

4. What are the differences between Public Palestinian Universities in weaknesses and challenges which prevent the implementation of quality management system requirements according to ISO 9001:2008?

5. What are the benefits of implementing quality management system requirements according to ISO 9001:2008 in Public Palestinian Universities?

6. What are the solutions that help the administration of Public Palestinian Universities to improve the level of service quality and to continue the process of continuous improvement of services?

## 1.7 Importance of the study & its contribution to the field of business

One of the most important misconceptions about ISO certification is that the certificate is awarded to private sector only (Al-Najjar&Jawad, 2011). Actually any organization public, private, mixed, for profit and nonprofit can be ISO certified upon compliance with the requirements. Many companies that have implemented a quality management system reported cost saving through improved process, effectiveness and efficiency. ISO can lead to improved management and operational processes, resulting in less waste time and material, increased productivity and cost saving. Palestinian Universities should seek ISO registration in order to improve the educational quality through better quality management systems. Many Managers recognized ISO 9001 registration as a way to assist the educational system transformation, a stepping stone toward education excellence and expected that it also increase administration efficiency through top management commitment which is the key to the success of any quality activity (Cheng, Lyn, & Lin, 2004).The use of total quality management as an organizational strategy facilitates firms in achieving their goals. If ISO 9001:2008 international standards can be adopted properly by

educational institutions and certification by third party can be obtained, the nation and society will benefit from that academic institution (Khan, 2011).

## 1.8 Reasons and importance of selecting the study

ISO 9001:2008 standards focuses on customer satisfaction through the application of a quality management system based on the process approach, and the necessity of continuous improvement. ISO 9001 registration is rapidly becoming common certificate for the institutions and universities all over the world and more colleges and Universities in the process of seeking ISO 9001 registration in order to improve the educational quality through a better quality management system. ISO 9001 certification is an important step to transform from an internal integrated system toward education excellence.

Globally, the ISO 9001 certification of universities becomes more and more a necessity required by the increasing competition for excellent students ,as well as high-performance faculty and staff, also growing importance of quality education services for students, their potential employers and governmental agencies (Paunescu&Fok, 2005). As industrial standards continue to gain importance in industries, so do employers demand graduates and course programs that do not only meet up with national but also international standards and recommendations. (Losse, Beaujean, & Schmitt, 2014)

Implementation of ISO 9001 series standards is one of the ways to seek quality in higher education. The key objective of the standards is to give recommendations to an organization how to create an efficient quality management system which would encourage an organization for continual growth (Sencila&Skipariene, 2007). Organization that aren't ready to undertake a full total quality implementation but want to move in the direction can use the criteria of several different award and certification programs as a starting point such as ISO 9000 (Roszak, 2009). From the literature studies, the first step in quality system development might be the implementation of ISO 9001:2008 as minimum quality associated requirements (El-Morsy, Shafeek, Alshehri&Gutub, 2014).

The objectives of universities are to provide in-depth knowledge, seek academic development, educate students, conduct research, provide community service, and coordinate national development demands. Process in the education system includes teaching, learning, research, administrative activities and knowledge transformation.

Outputs are tangible outcomes, Value addition (through examination results, employment, earnings and satisfaction), Intangible outcomes (educated people, research findings and service to community). ISO 9001:2008 certification defines responsibilities clearly, improves communication within the universities, facilitates data gathering for management, improves the attitude of the staff, improves staff management, improves integration within the university (Okibo&Kimani, 2013).

## 1.9 Methodology

The research design that was selected for this research was the one most suited so as to achieve an answer to the proposed research questions. For the purpose of the proposed research questions the researcher chose to carry out a concurrent triangulation mixed method research design to explore the implementation of quality management system requirement according to ISO 9001:2008 in Public Universities in West Bank. This approach helped the overall analysis and depth of the problem researched in Public Palestinian Universities, and it got vast amount of data for all events associated with the situation, and allowed the researcher to summarize, analyze and select directly what is suitable for the study. It required the use of more than one scientific method of research to gain access to the most accurate results. The study encompassed qualitative as well as quantitative research. This concurrent triangulation approach was useful because the researcher implemented the qualitative and quantitative methods the same timeframe so equal priority is given to both types of research , data collection took less time, and the researcher best understand the research problem, compare, validate and confirm the results, and end up with valid and well substantial conclusion about implementing the requirement of quality management system according to ISO 9001:2008 standards in Public Palestinian Universities in West Bank. (Saunders & Lewis &Thornhill, 2009).

### 1.9.1 Population and sampling

The population of this research is defined as all academic employees including deans, chair persons, quality managers, and teachers in Public Palestinian Universities in West Bank which are seven universities An-Najah National University, Birzeit University, Bethlehem University, Hebron University, Al-quds University, Palestine Polytechnic University, and Al-Quds Open University. The research took place in West Bank Public Palestinian

Universities .For the qualitative method the researcher selected a purposive stratified non random sample from quality managers to help the researcher understand the problem and the research questions. The researcher intended to select a purposive sample from quality managers which means that participants were selected because they are likely to generate useful data source and who have experience and knowledge of the issues being addressed in the research. Here the researcher was looking for individuals who have particular expertise that is most likely to be able to advance the researcher's interests and potentially open new doors. For the quantitative method the researcher selected a proportional stratified non random sample from academic teachers to help the researcher understand to what extent the universities implement quality management system requirements according to ISO 9001:2008 standards from academic teachers' point of view.

### 1.9.2 Data collection

Interviews in qualitative method are used as a tool for data collection. Collecting information was through semi structured face to face interviews based on site visits. Another primary data collection method was through a questionnaire adapted from previous studies and researches which enabled the researcher to get a clearer picture about implementing quality management system requirements in Public Palestinian Universities from academic employees and generalize results to other populations from the words of participants and represents data which are thoughtful in that participant.

## 1.10 Statement of limitation

This research was limited to Public Palestinian Universities in West Bank in the Southern Area which are Hebron University, Bethlehem University and Palestine Polytechnic University. Also the research was limited to deans, directors, and chairs of academic departments, teachers and quality managers at Public Palestinian Universities mentioned above. Some of the teachers and deans were not available and busy, other refused to cooperate, others promised to send the completed questionnaire to their faculty secretary but they didn't. Other deans and teachers refused to participate because the questionnaire is in English, they couldn't understand the questions due to the fact that these teachers didn't study in English. In addition, sometimes the interviewees and participants were not to open

up much, towards some question, the sensitivity of the topic caused a barrier in the manner in which the respondents completed the questionnaire and interview; this led to incomplete or incorrect information. Some respondents weren't interested and treated the whole study with suspicion. Another limitation was the distance. Due to time and distance constraint, the researcher wasn't able to take many participants at the same day, the participants didn't interact easily, the researcher had to ask the participants to fill out the questionnaire many times and came back twice to take the questionnaire and make sure that it is complete and filled out .

## 1.11 Ethical statement

The researcher protected research participants by developing trust with them, promoting the integrity of the research, guarding against misconduct and any impropriety that might reflect on their institutions and cope with new challenging problems. First and foremost the researcher had an obligation to respect the rights, needs, values, and desires of the participants because this kind of research motivate deep and sensitive answers to questions extracting meaning from statements and opinions. Additionally the reputation and positions of the participants were visible especially since the findings of the study could be shared with other people and organizations. To address ethical issues in the study, an official facilitation letter was sent to each Public Palestinian University, requesting permission to conduct this study and outlining the purpose of the study. Participants were advised in writing of the voluntary nature of their participation and that they were informed that they could withdraw from the study at any time during the process and they could decline to answer any question. They also were informed of their right to withdraw their permission at any stage if they feel it necessary.

## 1.12 Organization of the study

This research was divided into five main chapters. Each chapter consisted of several sections and sub sections. The following is a summary outline of the content of each chapter:

- Chapter one introduces the study and briefly describes what the study is all about and how it was conducted. The chapter begins with a general introduction, followed by the problem statement, significance of study, purpose statement , research objectives, research questions, importance of the study and its contribution to the field of business, reasons and importance of selecting the study, methodology, population and sampling, data collection, statement of limitation, ethical statement, and organization of the study.

- Chapter two reviews the relevant literature on the theory enhancing this research, concept and definition of quality, higher education institutions in West Bank and Gaza, quality in higher education, quality assurance in higher education, quality management in higher education, total quality management, implementing total quality management.

- Chapter three outlines the methodology of the research. It discusses the issue related to research design and justifies the rationale and reason for choosing the mixed method study strategy. The chapter aims at defining the population and sampling, research resource, instrumentation, procedure and time frame, validity and reliability, data collection, limitation, and statistical methods.

- Chapter four presents the findings and data analysis of both interviews and the questionnaires which include analysis of the findings and summarizing the results.

- Chapter five presents summarizing the findings, conclusions and recommendations of the study.

# Chapter Two

# LITRETURE REVIEW

## 2.1 Introduction

The previous chapter gave background information about the research problem, significance of the research and the research methodology. This chapter deals with the related literature review mainly concerning implementing total quality management system in higher education drawing examples from various places in the world.

## 2.2 Concept and Definition of Quality

Quality is a dynamic state associated with products, services, people, processes, and environments that meet or exceeds expectations and help produce superior value. The dynamic state element speaks to the fact that what is considered quality can and often does changes as time passes and circumstances are changed. Quality applies not just to the product and services provided but also to the people and processes that provide them and the environments in which they are provided. This means that organizations should focus not only on the finished product but also on the continual improvement of the people who produce the product, the processes they use, and the environment in which they work in the long run and in the short run. This is because quality products are produced most consistently by quality organizations. Achieving organizational excellence is about developing the ability to consistently provide superior value to customers over the long term (Goetsch& Davis, 2010).

Total quality is an approach to doing business that attempts to maximize the competitiveness of an organization through the continual improvement of the quality of its products, services, people, processes, and environments (Goetsch& Davis, 2010).

Total quality principles consist of customer focus, continual process improvement, teamwork, strategically based, long term commitment, obsession with quality, scientific approach to decision making and problem solving, education and training, freedom through control, unity of purpose, and employee involvement and empowerment. ISO 9000, as a quality practice, includes eight quality management principles consisting of

leadership, customer focus, continual improvement, process approach, system approach, factual approach, involvement of people, and mutually beneficial supplier relationship. So, ISO already includes total quality principles (Goetsch& Davis, 2010).

**Table 2.1 Total quality management characteristics compared with ISO 9000**:

| Characteristics | ISO 9000 | TQM |
|---|---|---|
| Customer focus (internal and external) | √ | √ |
| Obsession with quality | | √ |
| Scientific approach to problem solving | √ | √ |
| Long term commitment | Partial | √ |
| Teamwork | | √ |
| Continual process and product improvement | √ | √ |
| Education and training intensive | √ | √ |
| Freedom through control | | √ |
| Unity of purpose | √ | √ |
| Employee involvement and empowerment | Partial | √ |

Total quality is characterized by its principles, practices, and techniques. Principle is defined as "law, truth, or assumption that is verifiable". Quality principle is the root of quality practices and quality techniques or tools. Quality practices are the implementation of quality principles. Therefore, understanding the nature quality practice requires understanding the principles of quality. Quality techniques or tools are useful if they can support the quality principles. Quality practices that have been developed based on the core of quality concepts include total quality management, quality assurance, and ISO 9000 (Kuncoro, 2013).

Many experts have significantly contributed to the field of quality management among whom are Walter E. Deming, Joseph J. Juran, Armand Feigenbaum, and Philip Crosby (Kuncoro, 2013).

Deming's contributions provide guidance for organization to understand the importance of quality and effectively manage the organizations itself. Deming developed Deming's 14 Points to manage effective organization. These points are: (1) Create a vision and demonstrate commitment, (2) Learn the new philosophies, (3) Build in quality from the start and stop depending on inspection to achieve quality, (4) Stop making decisions purely on the basis of cost, (5) Improve continuously and forever, (6) Institute training, (7) Institute Leadership, (8) Drive out fear, (9) Optimize the efforts of teams, (10) Eliminate

exhortations and slogans, (11) Eliminate numerical quotas and management by objective, substitute leadership, (12) Remove barriers that take employees of their pride of workmanship, (13) Encourage education and self-improvement, and (14) Take action. The Deming's 14 Points reveals that there is a need of cultural change in the organization to facilitate quality improvement practice and it requires strong leadership (Goetsch& Davis, 2010).

Juran defines quality as "fitness for use". Juran suggests Quality Trilogy: (1) quality planning, (2) quality control and (3) quality improvement. Quality planning is "the process of meeting the organization goal". It starts by defining both the internal and external customers. The customers' needs also need to be identified. These needs are translated into product or service specification requirements. Quality control is "the process of meeting quality goals during operations*"* .This process ensures that the product or service meets the requirements. Quality improvement is "the process of exceeding the current performance" (Kuncoro, 2013).

Feigenbaum proposes three step approach to quality: quality leadership, quality technology, and organizational commitment. Feigenbaum is also known for using phrase "Total Quality Control*"*. Quality is applied to all stages in organization. Thus, it encourages involvement and commitment. Feigenbaum also states that leadership plays an important role in leading the quality effort (Kuncoro, 2013).

Crosby defines quality as *"*conformance to requirements". He is also known for his quality philosophy *"*Absolutes of Quality Management*"* that includes the following points : (1) quality means conformance to requirements, (2) there is no such thing as quality problem, (3) there is no such thing as the economics of quality; doing the job right the first time is always cheaper, (4) the only performance measurement is the cost of quality, which is the expense of nonconformance, and (5) the only performance standard is zero defects(Kuncoro, 2013).

According to the International Organization for Standardization (ISO9000) quality is the totality of features and characteristics of a product that bear on its ability to satisfy stated or implied needs (Khan, 2010).

## 2.3 Higher Education Institutions in West Bank and Gaza

The Council of Higher Education and the Ministry of Higher Education are responsible for drafting and enacting the rules that all higher education universities must adopt. The higher education universities are mostly independent but they have to follow the law and regulations of the ministry and the council of higher education.

The law on higher education combines two approaches; the central national planning and supervision by Ministry of Higher Education and the Council for Higher Education, and the self-management, self-monitoring and self-control at institutional level. This means that higher education institutions have the benefit of self-management. They are responsible for admissions, recruitment of staff, assessment of students, granting of degrees and diplomas and the development of facilities. In addition to the Council of Higher Education, a Council for Scientific Research and a National Commission for Accreditation and Quality Assurance were set up.

According to the Law on Higher Education, Higher Education Institutions can be one of the following:

-**Universities**: consisting of no less than three colleges or faculties which give bachelor degrees or higher.

-**University colleges**: offering academic, technical or professional programs and giving two or three-year diplomas or bachelor degrees.

-**Polytechnics**; they give diplomas or bachelor and higher degrees in professional and technical fields;

-**Community colleges**: offering academic, professional or technical programs of a minimum of one year's duration leading to diplomas in the respective programs. These programs aim at preparing a middle-level labor, which forms the link between specialized and skilled workers.

There are three different types of universities in higher education. These are governmental, public (Non-governmental organizations) and private universities.

**Governmental universities**: the Palestinian National Authority runs and finances the governmental higher education institutions in the West Bank and they are under the supervision of the Palestinian Ministry of Higher Education. There are 3 governmental universities in West Bank and Gaza; Palestine Technical University (Khadoorie), Al-Istiqlal University and Al-Aqsa University.

**Private Universities**: these universities are run and financed by several foundations, charitable societies, religious organizations, individuals and companies. There are 3 private universities in West Bank and Gaza; the Arab American University, Palestine Ahliya University and Gaza University.

**Public (Non-governmental organizations) Universities**: most higher education universities were set up during the period of Israeli occupation of the West Bank and the Gaza Strip. The majority are non-profit and originally created and owned by local charity associations and NGOs. They depend on fundraising and receive partial government funding. There are 9 public universities in West Bank and Gaza; Hebron University, Birzeit University, Bethlehem University , An-Najah National University, Al-Quds University, Al-Quds Open University, Palestine Polytechnic University, Al Azhar University and The Islamic University.

## 2.4 Quality in Higher Education

Higher education is the highest level of education and split into undergraduate and postgraduate. It offers academic programs and other services to the students. The quality of a university is judged not only by the quality of academic programs and the faculty and staff it has but the quality of other services it offers (khan, 2010). Improving and ensuring quality is no longer the responsibility of certain people, it is the responsibility of everyone. The people in the University are required to make quality a culture in their daily lives (Elgobbi, 2014). Universities must constantly monitor and analyze their global and local environments and the institution's responses to the situation. They should take into account regional needs and educational policy in strategic planning and reconcile them with the University's resources and internal processes. The management is responsible to communicate and implement the strategic plan in the internal processes of the University.

Management takes feedback from customers and continuously develops the internal processes and aligns resources to achieve the objectives (Kettunen, 2011).

### 2.4.1 Higher Education Customers

**Students:** The primary customers of universities are students to whom are provided information or service. Students as customers and partners take different roles: the product in process; the internal customers for many campus facilities; the laborers of leading process; and the internal customers for delivery of course material need is determined by education mix, teaching, research and extension activities (Abedel- Qader, Abu Quleh, &Almahyra, 2013).

**Community:** Community includes stakeholders which are parents, employers, administration, board of trustees, faculty, support staff, alumni, students, donors, ministry of education, other universities, secondary educator providers, sponsoring organizations, service partners, and social services. Parents of students may influence their choice of profession, specialization or even university. Employers have to realize the changes in the external environment for the betterment of the institute. In other words society may shape the mindset of prospect and current student. As a result it may eventually affect the inputs for the process of education (Khan, 2010).

**Companies:** Companies make use of the outputs of the process of education. As a consequence of the growing needs of the market, companies seek better educated staff at a lower price. Being pressured by competitors they hire more competent people who can meet the requirements for more than a single position. According to ISO 9001:2008 staff competence depends on four major factors–education, training, skills and experience. Education is the basis of that scheme. If a person lacks first step, it would take a lot of effort, time and money to fill that gap. This is the reason schools, colleges, and universities are so important for business and industry (Unal, 2001).

**Government:** The state is the primary funded and responsible for education system and the supervisor of all levels and specialties. Governments has passed several laws that facilitate the improvement of education including the law for encouragement of scientific research, the law for higher education, and the law for professional education and training

(Ali &Shastri, 2010). Governments realized early on the importance of empowering individuals, especially the youth, through focusing on the knowledge economy and the use of technology in planning and educational programs (Abedel- Qader, Abu Quleh, &Almahyra, 2013).

### 2.4.2 Dimensions of Quality in Higher Education

**Fitness of purpose**: fulfilling a customer's requirements needs or desires and describes the extent to which universities are capable of meeting their standards and fulfilling their declared mission and constantly meets its objectives (Bhalla, 2012; El-Morsy, Shafeek, Alshehri&Gutub, 2014).

**Value of Money**: The demand for higher education is influenced by the ability of the customers in terms of his ability to pay. In all countries; the price is an important issue in determining as to have access to higher education. Most of the universities are public funded institutions and are playing a positive role in providing higher education to the economically unprivileged ones at a reasonable cost. This definition is associated with an increase in institutional autonomy and better fund management (Ahmed &Siddiek, 2012; El-Morsy, Shafeek, Alshehri&Gutub, 2014).

**Transformation:** In educational terms, it refers to the enhancement and empowerment of students or the development of new knowledge and an increase in student skills in the educational process (sarbu, Ilie ,Enache&Dumitriu, 2009; El-Morsy, Shafeek, Alshehri&Gutub, 2014).

**Excellence**: the degree of excellence of the entire educational experience. The quality of student's life; the adequacy of university or college finances; the expansion and methods of learning offered; and student access to faculty (Altasheh, 2013; El-Morsy, Shafeek, Alshehri&Gutub, 2014).

### 2.4.3 Factors that affect the quality of higher education

Financial resources are critical for teaching and research. Universities must be able to attract financial resources to keep their superiority in research. Lack of financial resources may lead to overcrowding in the classroom and thereby, reducing the quality of the educational experience. Funding is necessary to provide for adequate facilities for teaching and research. It also plays an important role in attracting high quality academics. Besides funding, a number of cultural factors may affect the quality of higher education. These factors include attitudes towards meritocracy, academic freedom and shared governance. Meritocratic systems based on power sharing are most effective and productive forms of academic administration. Meritocracy is essential in students' admission and evaluation. Meritocracy ensures that the most qualified faculty members are recruited, and that they are subsequently treated fairly with regard to their promotions, bonuses and other benefits. Meritocracy is also highly important in deciding who should receive research grants. A university that does not adhere to meritocracy does not attract and retain innovative and highly competent people, and instead, sends them to its local, regional, or international competitors. Meritocracy is not likely to be achieved without transparency and shared governance. Attitudes towards academic freedom are also highly important in higher education. Universities are supposed to be the place for open discussion of debatable issues. Academic freedom for professors leads to better education for students who can be exposed to a wide variety of viewpoints and styles. Academic freedom is the prerequisite for innovation and creativity as it allows students and faculty members to challenge conventional wisdom. The sustainability of academic freedom requires a governance system. Shared governance fosters a sense of empowerment, encourages staff, and results in improved morale and an improved university environment. Shared governance is exercised through various means from independent faculty senates and departments committees. Universities function better when they have better funding and when they are in environments that have limited corruption levels, less centralization, and more freedom and transparency. Countries with higher Gross Domestic Product have the possibility of spending more funds on higher education than other countries (Jabnoun, 2009). Universities need to diversify their sources of funding and attract foreign funding. They should strive harder to adhere to highest norms of meritocracy, respect, and shared governance. They should lead the change for the betterment of their societies. In order to achieve excellence, universities should ensure having less corruption, more freedom and

more shared governance. This can be achieved through translating the values of freedom, power sharing, and meritocracy in the systems and structures of the universities. This includes their organizational structure, their decision making processes, reward system, processes of appointments and promotions.

## 2.5 Quality assurance in higher education

The quality assurance system in higher education can be defined as a set of policies, systems and processes directed to enhance educational quality, relying on constant assessment and comparison between intended results and obtained results (sarbu, Ilie, Enache&Dumitriu, 2009).

Assessment, audit and accreditation are the most frequently used methods for quality assurance in educational institutions. Assessment focuses on outputs and quantitative measurement. It measure the current level of achievement with regard to set target which results in a grade or descriptive like excellent, good, satisfactory or unsatisfactory. An external quality audit is qualitative approach and measures to what extent the institution is achieving its objectives and to what extent the institutions is achieving what it claims to achieve. Accreditation is a broad term and includes quality assessment as well as quality improvement addressing both inputs and outcomes. It evaluates whether the institution is qualified for a certain status or not and good enough to be approved to give degrees. Accreditation is the choice of the governments around the world for quality assurance at educational institutions for which they have established accreditation councils and other accreditation bodies. Higher education institution gets accredited when there are proofs that the institution has clear and suitable academic objectives, possesses sufficient human and financial resources to achieve the objectives, has demonstrated the achievement of objectives and will be able to do so in future. Accreditation and audit are external quality assurance measures while assessment and ISO 9000 are institution based. Both internal quality assurance system which represents bottom-up approach and external quality assurance systems which represents top-to-bottom approach are complementary and essential for quality assurance. Assessment focuses on input and outcome but quality is best ensured when educational inputs and processes are controlled as in ISO 9000.

Therefore, ISO 9000 is a frequently adopted method for quality assurance (Khan, 2010; Bakr, 2014; Elgobbi, 2014)

In internal quality assurance, formal statements are required about the expected practice in a university, regarding: policy and procedures for quality assurance; approval, monitoring and periodic review of programs and awards; assessment of students; quality assurance of the teaching staff; learning resources and student support; information systems and public information. The external quality assurance is assessed on the following standards: use of internal quality assurance procedures; development of external quality assurance processes ;criteria for decisions; processes fit for purpose; reporting; follow-up procedures; periodic reviews; system-wide analyses (sarbu, Ilie, Enache&Dumitriu, 2009).

Quality assurance in education is achieved by supplying information about the functioning of the education system; taking responsibility for creating conditions to attain quality; maintaining and improving high academic standards; proving a high quality of academic or professional training programs for all students in a higher education institution; developing an institutional culture of quality and providing real protection to its students (sarbu, Ilie, Enache&Dumitriu ,2009).

A real educational quality act can be obtained by the following aspects; the objectives of the educational act, the competence level and the curricula; the study environment, the competence of the teaching staff, of the technical staff and the efficiency of work practices; the independent assessment of pedagogical and research activity and the students' results; a functional education system and sufficient financial resources (sarbu, Ilie, Enache&Dumitriu ,2009).

In the universities, there are three main fields for quality assurance: education, research and administration. In Educational Field the higher education client is society in general, and in particular, the organizations or companies. The university student is the final product of the university, as a result of the teaching-learning process. This product is achieved, on one hand, by means of the legal reference of the studies Plan, and on the other, as a consequence of the success of the teaching-learning process, in which the students, the faculty, the methods and the quality process assurance system play a very important part. In research field the fundamental line of universities is research and development. These activities should also be subject of a control, so that the given service,

in connection with the research plans or the companies that demand this service have the necessary quality. In administration field the administrative management associated to a university degree forms a responsibility assigned to the centers. It is necessary to work with coordination as refers to functional aspects as well as to human resources, the administrative management and the specific quality management. The system should consider the proper interactions, so that the intervention of different areas on the processes will not prevent the achievement of the objectives (Roszak, 2009).

The Palestinian quality assurance policy was upgraded in 2002 with the establishment of the 'Accreditation and Quality Assurance Commission' (AQAC) as the only authorized agency responsible for the accreditation and quality assurance of higher education in West Bank and Gaza. The AQAC is a governmental semi-autonomous body under the umbrella of the Ministry of Education and Higher Education. The Palestinian quality assurance system is based on the belief that internal quality assurance is the basis for external quality assurance evaluation. External quality assurance evaluation is applied to public and private institutions, university and non-university sectors and all types of academic programs.

## 2.6 Quality management in higher education

To provide an evidence of quality management system existence, a university has to set up its overall quality policy and objectives, design university structure and communication system, identify and document its processes, review job specifications, analyze data and make decisions based on data, measure quality performances, and maintain quality records(Paunescu&Fok, 2005, p.7). The quality management system in education must also take into account the curriculum, the learning processes system, the responsibilities, processes and resources that ensure the quality of all activities carried out in education, not only those connected to the teaching act(sarbu, Ilie, Enache&Dumitriu ,2009). Also, a university has to demonstrate the top management commitment to continual improvement of its quality management system through: planning and communicating the most significant quality goals throughout entire organization; making reviews of the university's performance; and monitoring implementation of corrective and preventive action. The university has also to prove that resources, infrastructure and work environment are sufficient to achieve quality objectives of enhancing customer satisfaction. These refer to classrooms, laboratories, study rooms and libraries with a sufficient material, books,

internet connections; ensuring competence of faculty and staff in performing their jobs; and providing training and professional development for all university's employees. Furthermore, a university must demonstrate its services and processes meet customer's needs and expectations (Paunescu&Fok, 2005).

## 2.7 Total Quality Management

TQM is composed of three terms: ***Total***: every person is involved ***Quality***: customer requirements are met ***Management***: senior executives are fully committed (Altahayneh, 2014).

TQM is a set of management applications and practices, concentrating on customer satisfaction, total involvement and commitment and continuous development. Therefore, it has been adopted by a lot of organizations and institutions .TQM involves managing for the future and putting efforts to put together people, organizational processes, and other organizational resources successfully and effectively. The focus of the TQM values is based on continuing relationships with staff, suppliers and society (Elgobbi, 2014; Altahayneh, 2014).TQM can be defined as the process of integration of all activities, functions and processes within an organization in order to achieve continuous improvement in cost, quality, function and delivery of goods and services for customer satisfaction". It refers to the application of quality principles to overall process and all the management functions in order to ensure total customer satisfaction (Ali &Shastri, 2010).

The use of TQM provides guidance in educational institutions. It promotes management-teacher-student involvement, which leads to the improvement of higher education (Slack, Champers, & Johnston, 2007). TQM implementation at some Universities; found that TQM can be a powerful technique for release of employee creativity and potential, reducing bureaucracy and costs, and improving the speed of service and efficiency, if the right leadership style had been used. TQM have key elements which need to be considered in order improving the quality, which are Leadership, Continuous improvement, Employee participation and empowerment and information management (Oahland, 2003).

TQM is a necessarily common factor that will shape the strategies of higher education institutions in their attempt to satisfy various stakeholders including students, parents,

industry and society as a whole. The main objective of TQM is to establish quality into processes, products and services (Kothari &Pradhan, 2011; Staiou&Yeralan, 2014).

Those adopting TQM in higher education have varying perspectives on the approach. Some see TQM as a management system with customer or student satisfaction as the crucial element. Others see TQM as a philosophy enhancing change in an organization or the educational institutions. Academic institutions have used both the approaches in applying TQM in higher education settings. Quality of education takes into account external environment in which institutions operate: internal environment where teaching learning takes place and home environment of learners (Unal, 2001; Altahayneh, 2014). The systems approach to education includes inputs, processes and outputs. Inputs from its environment cross the boundary into the system: these are acted on within the transformation/ production process and finally released from the system back into the environment as outputs. The direction of flow from the inputs, through transformation/production process to the output indicates the flow of energy, information etc. Inputs are human, physical and financial resources, (students, faculty, administrators, and organizational culture). Process is a series of actions or operations concluding to an end. A process transforms measurable inputs into measurable outputs under a value adding operation. Educational process is a series of actions or operations leading to an educational end learning, training, and or scholarly activity. Transformation process for an educational institution consists of activities performed to spread knowledge, to conduct research and to provide community service. Process in the education system includes teaching, learning, research, administrative activities and knowledge transformation. Outputs are tangible outcomes, Value addition (through examination results, employment, earnings and satisfaction), Intangible outcomes (educated people, research findings and service to community) (Khan, 2010).

Quality circles (QC) is an important management technique to implement TQM in higher education, it should be directly involved with four core elements of TQM in higher education which are Leadership, Human Resource Management, Information Management, and Educational Management (Ahmed&Siddiek, 2012). Leadership stands out as a major theme in the TQM implementation. It should examine senior management's commitment and involvement in creating and supporting a customer focus, clear goals and high expectations. Leadership system also would promote performance excellence for the Higher Education. It should sit the rule and responsibilities for each member of staff

toward the student's satisfaction and create a partnership with parents and public communities. It should ensure all messages are clear for any stations, also accessible and reliable at all levels (Bhalla, 2012). Human resource management element will examine if the staff recruitment and development will meet the institution objectives to ensure the best performance, also to provide staff with the best quality work environment to ensure the staff satisfaction and participations. Educational management will examine aspects of process management, including education design, learner-focused, education delivery, services and institution operations. It should examine how processes are creatively designed, effectively managed and continuously improved. This element should ensure continuous improvement and innovation in educational processes of the institution (Ahmed &Siddiek, 2012).

Traditionally, the higher educational services include the three fundamental functions;

**Teaching:** Teaching forms the backbone of any educational system. The objective of teaching is the transmission of knowledge from the teacher to the students. Apart from classroom lectures, more innovative teaching can be found through other ways including discussions, case study analysis, presentations, field projects, role play, and simulation methods and others. Teaching methods in synchronization with the learning will facilitate better teaching-learning process (Staiou&Yeralan, 2014).

**Research:** Research focuses on exploration of the knowledge. In an educational system of any country, research has been part of higher education system. It is generally associated with the university system where research is followed after obtaining a post graduates level, though there may be need of research at lower levels of the educational system hierarchy. Research facilitates new insight into the subject matter. It is related to innovation. It has been evidenced that many scientific innovation were led by research, which were followed by commercialization of products. Therefore a good research system not only promotes scientific and rationale thinking, but also leads to economic well being in the long run (Mashagba, 2014).

**Extension:** Extension activities are primarily aimed on the application of the developed knowledge to address the common problems of the society. Higher educational system does not operate in isolation. There are many interfaces including sociological, cultural, economic, technological, and political and so on. A good higher education serves to solve

the problem of the society affecting these interfaces. It serves to promote local community development by involving the locals. Development in agricultural fields is always associated with the benefits associated to the farming community. It also aids in reduction of poverty by generating ways for jobs through placement. Commercial organizations are working in cooperation with the university laboratories to develop new products; their products are also part of extension activities (Ahmed &Siddiek, 2012).

The demand for higher education is influenced by:

**Service price:** In developing and underdeveloped nations, where a huge number population still lives below the poverty line, price is an important criterion in determining as to have access to higher education. In this context most of the universities and public funded institutions are playing a positive role in controlling the cost rising and providing higher education to the economically unprivileged ones at a reasonable cost (Slack, Champers, & Johnston, 2007).

**Place and accountability:** The location of the institution is also determining factor for choice of higher education. It is generally observed that students prefer institutions located in closer to their villages or town. The role of location becomes less significance if the educational institutions offer a course of a superior quality coupled with a high demand and low supply phenomenon, where students are willing to relocate for educational purposes (Abedel- Qader, Abu Quleh, &Almahyra, 2013).

**Delivery Mechanism:** Students also look at the way of acquiring education in terms of accessibility and price. Generally the preference is given to full time courses. But part time learning, distance learning, correspondence courses, open learning, and e-learning is a beneficial to those who cannot go for full time education, especially those in the organized employed sector (Altasheh, 2013).

**Physical evidence:** Physical evidence in terms of infrastructure and other facilities often serve as a major attraction to the end user. A well-equipped classroom promotes better teaching –learning process whereas modern laboratory facilities open the way for better skill acquisition. Institutions serve to the varying needs of the students, teachers and administrators by providing better accommodation, offices, cafeteria, clinics, gymnasiums and good atmosphere in general (Ahmed &Siddiek, 2012).

## 2.8 Implementing total quality management

The requirements and critical success factors for total quality management implementation in Higher Education:

1. **Customer Focus and Satisfaction.** The most important feature and the essential purpose of TQM is the organization's focus on its customers and their satisfaction. Quality means satisfying or exceeding customer expectations. Organizations need to continually gather information by means of focus groups, market surveys, and customer interviews in order to stay in tune with what customers want. The top management should identify customer requirements and meet these requirements to enhance customers' satisfaction. The management should introduce processes for monitoring and measuring customer satisfaction. Students are regarded as the main customers of the teaching learning process. So gathering and survey of students' complaints, course evaluation, and support to students' curricular and co-curricular activities and alumni follow-up studies are the key concerns of the successful implementation of students focused TQM program. Besides students, there are other customers of the Higher Education Institutions like Higher Education employees, faculty, parents etc. The customer should be closely involved in the product design, development process and their input should be at every stage .Top management should make arrangement for getting feedback from both external and internal customers regarding the academic program courses and services provided by the educational institution for improvement (Khan,2010).

2. **Leadership and Commitment by Top Management**. Total Quality Management efforts cannot succeed without top management commitment and leadership. Top management can support TQM implementation by allocating budgets and resources, control through visibility, monitoring progress and planning for change. The general manager must commit not only resources but also a considerable amount of his own time. Top executives should plan on a third to half of their time being used in the total quality effort. For an organization to completely adopt total quality, a deep change is required in the organization culture. If the boss is not involved in it day to day, he will never know enough about what is happening to make rational decisions affecting the change (Goetsch& Davis, 2010). The senior management is expected to create customer focused approach, clear goals, and leadership system that promotes

performance excellence. Top management develops policies that impact staff, students and public responsibilities industry linkages, relationship with parents and the community. Senior management involves the internal and external stakeholders in decision making by developing a comprehensive feedback mechanism and setting strategic directions and goals that lead to the students' satisfaction and other stakeholder in general. Leadership should not force TQM on the employees but should make it attractive through good communication and sufficient training. Top management of Higher Education Institutions should be aware of the needs of TQM, understand the importance of employee involvement; and concentrate on long-term stable performance measures while actively showing their support to TQM practices through their actions. Vice chancellor, dean and head of the department's performance check-list may include: commitment to the development, implementation and continual improvement of the quality management system by adopting customer focused approach; developing vision, mission, quality policy and quality objectives; delegating responsibility and authority with proper checks and balances; conducting management review; setting channels for communicating quality management system plan; reviewing quality plan and follow-ups throughout the organization; appointing management representative to oversee the quality management system; providing the sufficient resources for quality management system to achieve the desired quality objectives; ensuring the educational processes comply with legal and regulatory requirements of the certification and accreditation; making arrangements for monitoring and measurement of the processes and performance of the organization for achieving established policies, objectives and improvement of quality management system (Khan, 2010).

3. **Commitment of Resources.** Top management should not only establish the organization's vision, mission, and quality policy and quality objectives but also provide human and financial resources on continuous basis to achieve quality. Total quality implementation need not be expensive, but everything has a cost. The cost will include training and career development, staff performance and recognition and quality work environment and consultant expense to achieve organizational goals and performance excellence. Training involves obtaining specific skills or knowledge. The employees went through the training are expected to perform those specific activities and jobs for which they are trained. For effective operation of

the quality management system, it is important that the person performing work should be competent enough on the basis of appropriate education, training, skills and experience to affect quality. The organization should first identify the qualifications and competence needed for performing certain task that affect the quality of the product, define the required training, evaluate the training and maintain record of the training. Training is a must while implementing TQM in Higher Education Institutions. Training needs of academic and nonacademic staff and those directly involved in the implementation of TQM should be identified separately. To determine the competences needed for teaching and support staff, the organization should compare the curricula requirements with the existing personnel competencies. Then determined the need for training to make up for the deficiency by analyzing the data and evaluate the effect of the training after it has been implemented. The organization should maintain record of all the staff competence acquired as internal or external professional trainings, workshops, seminars and conferences attended. The record should also show a periodic review of training needs and their outcome. Top management should provide teaching and supporting staff with information on how their competence, awareness, and training are aligned with their responsibilities, authorities, and academic-administrative activities (Goetsch& Davis, 2010; Khan, 2010).

4. **Organization-wide Steering Committee.** It should be chaired by the person filling the top position in the structure. The function of this group is to establish how total quality is to be implemented and then to see that it happens. There are different types of teams like quality circles, problem solving teams, management (cross-functional) teams, work teams, virtual (computer) teams which vary on the basis of their function, structure and degree of formality. It will be necessary to set up the cross-functional teams, to establish the team's objectives and to monitor results. This group will find itself operating as a team rather than just as the staff. It will set the vision and goals for the organization, establish teams to follow the goals, monitor the teams progress and reward them for their achievements. The important point is that implementation requires management. The typical staff is made up of stars, not team players. They have isolated their departments with walls that can challenge all efforts to penetrate them. Their interests usually lie in their own departments rather than in the long-term vision and objectives of the organization.

The person with the biggest challenge is the one who has to put people working in mutually supportive team. Once they really start to function as a team, staff members will never want to go back to the old ways again (Goetsch& Davis, 2010).Teamwork improves performance as it breaks the barriers to effective communication and collaboration among people and departments and makes people take more responsibility for the success of the overall operation. These teams are involved with quality circles which are called in some higher education institutions as quality assurance department, educational quality department or total quality management department. The quality circles are group of people responsible for enhancing educational quality. Quality circle is the most common type to team. It is a team of eight to ten members from employees and their supervisors. They meet weekly during work and work together to solve quality problems. Decisions are taken on the basis of group agreement (Khan,2010).

5. **Planning and Publicizing.** The steering committee must develop the vision statement and guiding principles, set the goals and objectives, put the implementation plan in place and then develop awards and recognition program and other publicity efforts. The vision statement is a long-range strategic view. Total quality needs a long range vision because total quality is achieved only over a long period where there will be fundamental changes in the way people do things and how they work together. The broad strategic goals and objectives established by the steering committee must harmonize with the vision statement. These goals are for the total organization; they flow from the vision statement and are part of the organization's strategic plan. Total quality implementation plan is driven by the vision, goals and objectives and it determines the way. After the steering committee has been trained, it will be ready to start its work. An awards and recognition program should be in hand before the implementation starts. When trying to do things through teams, the focus of the reward system should be on the teams not individuals. Publicizing total quality activities and results is important. All the employees need to know what is going on all the time, only when employees are fully informed can understand many management decisions and support management. Employees need to know ahead of time what is planned and how they will be affected (Goetsch& Davis, 2010).

6. **Infrastructure that supports continual improvement.** Infrastructure is vital for effective implementation of a quality management system. The organization should provide sufficient resources for managing, performing and verifying activities affecting quality to enhance customer satisfaction by meeting customer requirements. The educational organization should: establish information inputs for detecting the needs for resources; perform resource planning at a short and long term; verification and assessment of tasks; provide the resources needed for teaching staff, the administrative staff, employees and customers. Higher Education Institutions should first identify the infrastructure and equipment and then define responsibilities and authorities for procurement and maintenance. Infrastructure includes: buildings and working spaces: such as classrooms, laboratories, workshops, libraries, green areas; associated services/utilities: such as water, electricity and its installations, gases and fuels including those needed for instrumental usage, health services; equipment for the teaching-learning process (hardware & software): this includes accessories, supplies and consumables, hardware; support services: such as transport, bookstore, school items ,and cafeterias(Khan,2010).The vision and its objectives, the awards and recognition program, and communication are part of supporting infrastructure. Three other infrastructure features- organization operating procedures, organizational structure, and union situation can offer support for total quality implementation efforts. All organization should operate in accordance with published procedures, but if the procedures don't support total quality and there is a better way, we need to change the procedures. Organizations are arranged in departments that effectively raise all kind of barriers to efficient operation. Communication among them is a problem. Some organizations designed new organizational structures to eliminate the walls. All members of the team must see their prospects as tied to the project team, not to the home department. Union must be part of the team, organization must place the top union official on the total quality steering committee (Goetsch& Davis, 2010).

7. **Documentation Management**. A documented quality management system makes employees understand exactly what they are supposed to do in their work areas. A quality management system is a set of standards, procedures, activities, feedback mechanisms and management actions which together ensure the quality of the products and services delivered and include all those activities and processes in an

organization which affect quality in one way or another. The quality management system in an educational organization should be viewed in term of curriculum; a system of learning processes, the organizational structure, responsibilities, processes, and resources. ISO9001 QMS has general requirements and documentation requirements. The general requirements of QMS are to establish, document, implement, maintain, and improve the QMS by adopting a process approach. Higher education institutions should identify processes regarding academic program design, development and delivery and also determine how these processes interact and operate by providing criteria and methods of interaction and information for operation of the processes. The documentation requirements of ISO 9001 quality management system include a documented quality policy, mission statement, quality objectives, a quality manual, quality system procedures, work instructions, control of documents and control of records . The quality manual is a design plan of the quality management system and documents the scope of the quality management system including details and justification for any exemption, references to documented procedures for educational and support processes and applicable documents and criteria upon which the quality management system is based. Reference to different aspects such as terms and definitions required by the organization, regulatory and organizational policies, applicable laws and regulations, the competencies of the teaching staff, accreditation and certification programs, study plans and curricula competence programs, awareness, education, training and updating; and support services may be included in the quality manual of an educational. Quality manual is supported by a document called procedures manual. It contains written procedures outlined in flowchart form. A written procedure describes the scope and purpose of an activity i.e. what is to be done and by whom; when; where and how, what materials, equipment and documents to be used and how the activity be controlled and recorded. Same as detailed documented work instructions are also given to the employees to lead them perform specific work. Control of documents means that there should be a documented procedure for continually updating QMS related documents and they are easily accessible. The procedure also specify how internal and external documents be controlled. Internal documents include documents regarding instruction, instruction resources like textbooks, information on course registration, lesson plans and research reports etc. and support services. External documents include legislation, rules and

regulations, accreditation regulations and student's legal documents. The higher education institutions should maintain record of the academic program design; staff training, qualification and performance; students' progress, tests assessments, certificates and degrees; important meetings minutes and memos, contractual and procurement records and complaints and action taken etc(Khan, 2010).

8. **Internal Communication.** Communication is the responsibility of the top management to maintain channels for organization wide communication and sharing information related to the effectiveness of the quality management system. There should be communication from top to bottom and bottom up and also among different departments. For effective communication it must be established as what to be communicated, to whom, who is responsible, how often and how the information to be saved. Effective communication enhances employees' participation it help them share ideas and create a common understanding. The organization should communicate its vision and mission, strategies, policies and plans to its employees and the employees should have access necessary for performing their jobs. Also the employees should be updated about the daily changes that take place in the organization. The top management in the educational organization should establish appropriate communication processes and channels including intranet, memos, newsletters, posters, videos, internal meetings, emails, phones etc. For communicating the vision, mission, objectives, quality management system plan to students, faculty and all other employees. Students should also be provided with accurate programs and courses information. They should also be informed of their rights and responsibilities and various services offered by the organization through orientation sessions and other means. They should be provided in time information on acceptance or rejection of their application and what choices are available to them. The top management should also publish institution's bulletins for communicating the relevant quality-related matters as performance quality objectives, giving feedback to students (Khan, 2010).

9. **Work Environment.** The work environment includes noise, ventilation, health & safety, workspace, cleanliness and temperature etc. The firm needs to continuously improve working conditions. It is the management's responsibility to provide both social and working environment helpful for producing quality products. In higher

education institutions the environment support learning and meet the requirements of the customers and the product. The physical facilities like classrooms, offices, laboratories, hostels, and common spaces should be safe and healthy. Similarly supporting services should reinforce learning and not interfere with the learning process. Similarly there should be proper reward and recognition system based on team approach and equality (Khan, 2010).

10. **Program Design.** Universities are becoming more and more important participants in the creation of sustainable social development, because connecting the learning process with economic activities can affect the creation of sustainable dynamics of economic and social development of the community in which the university works. Universities follow the market trends, develop programs that meet the demands of the environment and focus on integrating their characteristics and programs into economy and society. The academic program, course and supporting services should meet the stated standards and outcome. Educational organizations should plan different processes regarding instructional design, development, delivery, evaluation and support services activities, resource allocation, evaluation criteria, and improvement procedures to achieve the desired results. The students expect the educational organization to provide academic program that is relevant and according to the standards which may enable them to stand up professional responsibilities. Furthermore, the educational organization should review the product design i.e. curricula and the outline of the subjects in a course of study and established program in new academic session and informal feedback provided by students, recommendations from business and industry and a desire to keep programs current and relevant. Students' feedback may be collected through questionnaires, surveys, interview and meetings with students' representatives on programs, and other services offered by the organization and use the gathered data for program planning and reviewing. Changes made in the curriculum should be identified, documented, authorized and communicated. Also, when making changes to any subject, its effects on the entire curriculum should be evaluated and records maintained. There should be processes for advertising program information and institution marketing material, students' recruitment, hiring of the personnel and providing training to them. There should be well established processes for students' registration, exit and graduation, provision of student support services, design and

development of programs and curriculum, delivery of programs, procurement and purchasing of equipment for teaching and learning, teaching-learning support services, and maintenance and security services. In order to continuously improve teaching learning processes seven steps are taken into consideration for academic program evaluation: 1. Select the course to be evaluated. 2. Prepare the terms of reference for course evaluation. 3. Conduct the course evaluation. 4. Prepare an evaluation report of the findings. 5. Prepare an action plan with improvement measures. 6. Implement the action plan for continuous improvements. 7. Monitor the action plan for continuous improvements (Khan, 2010; Dahleez ,2015).

11. **Monitoring and Measurement of Processes.** Educational institutions are considered as service organizations which have specific academic and administrative processes. These processes need continuous improvement and maintenance i.e. these should be measured, evaluated and controlled through comprehensive statistical data collection. ISO 9001 standards require that the educational organization should measure and monitor the processes used to manage and deliver the educational product .Organization should establish a process for gathering data from different sources and using different statistical tools and techniques to analyze the data continuously to improve the effectiveness of the teaching/learning processes, the product meet customers' requirements and enhance or exceed customers' satisfaction. The different aspects of the educational process on which the data is required include students and employers' satisfaction regarding the academic program and support service, teaching methods, organizational-administrative effectiveness, teaching staff, support staff and students' performance. The organization should provide required information to students regarding the academic program/courses, what is expect of them and the outcome of the program in the start. Then the organization should seek feedback from the students and other stakeholders; employers, alumni, donors, ministry of education, other universities, secondary educator providers, sponsoring organizations, service partners, and social services regarding the academic program, teaching methods, administration, teaching and support staff, support services, assessment and evaluation process (Khan, 2010).

12. **Monitoring and Measurement of Product (Product Management).**. The academic program is a set of services, knowledge and learning experiences designed to bring about desirable changes in the students. So the academic program processes should be monitored and measured to check it effectiveness. The educational organization should seek customer's satisfaction and measure the changes through different types of assessments, tests and examination that the curriculum has brought in the students in order to check that the planned results have been achieved or not. Records of this evaluation process should be maintained show that to what extent the planned objectives results have been achieved. Proper analysis and systematic investigation improvement and corrective actions are taken (Khan, 2010).

13. **Responsibility and Authority.** The educational organization top management should clearly define in the quality manual or procedural manual the responsibilities and authorities of all the staff who manages and performs and verifies work affecting quality through organizational charts and job descriptions and communicate them throughout the organization. It is the responsibility of the top management in the educational organization to appoint a person from the management as management representative who has the responsibility to observe that the processes of the quality management system are established, implemented and maintained; to report to the top management on the performance and need for improvement of the QMS and to create awareness regarding customer requirements throughout the organization. The management representative should have knowledge and experience which help him provide guidance and advice regarding the processes needed for the implementation of quality management system. Management representative can be called Quality Manager and he is the head of quality management unit (Khan, 2010).

14. **Teaching Processes.** Process management is essential for successful TQM implementation. Teaching processes need to be controlled and managed as they are the core processes directly involved in the product formation. The academic program design must include the course outlines with skills and knowledge to be acquired by the students, appropriate instruction strategies and delivery plan and Instruction material, and student's performance assessment criteria. In order to

ensure compliance with the planned program, teaching activities should also be monitored. The top management in consultation with the faculty should identify overall topic and subject matters to be taught, methods of instruction and establish measures to ensure achieving the learning objectives. Also records of actual instruction provided should be maintained which may include student course records, the course outline, instruction materials, relevant pre-requisite knowledge or experience, the learner group schedule, textbook and edition and list of instructors' names (Khan, 2010).

15. **Assessment Processes.** Testing and inspection are important aspects of quality control. There should be some assessment, test and examination to evaluate the performance of students and program. Ways of assessment and evaluation depend upon the nature and type of the program. The tests, quizzes and assignments should be validated for their reliability and usefulness. Also equipment used in laboratories and workshops should be standardized to national standard. There should be students' performance profiles (Khan, 2010).

### 2.8.1 The process of Total Quality Management in Universities is applied in three stages:

1. The stage of preparation and the adoption of the philosophy of total quality management by institution management. Top executive must make the commitment of total quality and implementing quality management system as part of management, forming and building the total quality steering committee team, declaration of mission, vision and strategy and guiding principles, establishment of broad objective, communication and publicity, identifying organizational strengths and weaknesses, reservation of financial sources and human recourses (Roszak, 2009;Goetsch& Davis, 2010; Sudha, 2013; Sencila&Skipariene, 2007).

2. The planning stage includes the development of detailed plans for implementation the requirements of the application of the system. Plan the implementation approach by using Plan-Do-Check-Adjust (PDCA Cycle), identification of projects based on strengths and weaknesses and the steering committee should be open to suggestions

for projects from all sources. Establish team composition. After the projects have been selected, the steering committee establishes the composition of the teams that will execute them. Provide team training. Team must be trained before working (Roszak, 2009;Goetsch& Davis, 2010; Sudha, 2013; Schmitt, Grabler, &Beaujean, 2014; Sencila&Skipariene, 2007).

3. The implementation phase includes identification of processes and definition of the process map, definition and documentation of processes, process performance assessment, team activation and direction. The steering committee gives each team its direction and activates it. Teams work on their assigned projects using the total quality techniques they have learned. Project team provides feedback information about the process and results to the steering committee. Customer satisfaction feedback. Project teams obtain customer feedback information covering both internal and external customers. Employee Satisfaction feedback. Project teams give feedback to the steering committee about employee attitude and satisfaction. Modify Infrastructure as Necessary. Feedback to the steering committee will guide the steering committee to address necessary changes in the corporate infrastructure- procedures and processes, organization structure, awards and recognition programs, and union rules (Roszak, 2009;Goetsch& Davis, 2010; Sudha, 2013;Sencila&Skipariene, 2007).

Organization that aren't ready to undertake a full total quality implementation but want to move in the direction can use the criteria of several different award and certification programs as a starting point such as ISO 9000 (Roszak, 2009). From the literature studies, the first step in quality system development might be the implementation of ISO 9001:2008 as minimum quality associated requirements (El-Morsy, Shafeek, Alshehri&Gutub, 2014).

## 2.9 Application of ISO 9001 in Higher Education Institutions

The new management of Vysoka skola banska (VSB)-Technical University of Ostrava, Czech Republic decided to implement QMS into university management and led to the decision to implement QMS according to ISO 9000 series. The university consists of seven faculties: Faculty of Economics, Faculty of Civil Engineering, Faculty of Mechanical Engineering, Faculty of Electrical Engineering and Computer Science, Faculty of Mining

and Geology, Faculty of Metallurgy and Material Engineering, Faculty of Safety Engineering. There are more than 19,000 students in bachelor degree, master degree and doctoral degree programs in daytime, distance and combined studies. They split the implementation of QMS into several stages. The first stage was the implementation of QMS at one faculty as the pilot project. The second stage was the implementation of QMS at the next faculties with utilization of the experiences from first stage. Final ongoing third stage is the implementation of QMS at the rest of faculties and at the administration and executive part of whole university. Processes at the faculty level were divided into three basic groups: 1.Customer related processes (education – bachelor, master and doctoral level, research and development activities, and cooperation with industry) 2.Managing processes (strategy management of faculty, operational management of faculty, and source management) 3.Supporting processes (support of education process, support of research and development, purchasing, control of information system.) facility management, finance management and human resource management are ensured at university level. The descriptions of all existing processes and implementations of ISO 9001 required procedures were followed by trial period. They evaluated the performance of each process through the defined process performance criteria. These process performance measurements were completed by customer satisfaction measurements. They evaluated the satisfaction of students during their study at the university, students after some years of their professional career, employers with graduate's skills, and industry partners. These measurements were, together with internal audits findings, the bases for analysis. The results of analysis defined area for improvement. From management point of view all faculties are doing the same work. They provide the university education, research and development and cooperation with industry. However, there are some differences caused by different orientation of faculties. The experiences from pilot project were used during implementation of QMS at next faculties. The management of the university recognized the improvement of university culture and benefits in different areas: increased level of managing processes in the university, better set-up of activities inside the university, accurate definition of authority and responsibility, forcing the university to identify and satisfy the actual needs and expectation of their customers. QMS forces the university to identify and satisfy the actual needs of their customers, saving of operating expenses. The proper set-up of activities inside the university together with accurate definition of authority and responsibility leads to elimination of wasted effort and it edges saving of operating expenses, improvement of the educational processes evaluation of customer

satisfaction, better set-up of activities inside the university leads to improvement of the educational process, improvement of competitive ability of university ISO 9000 registration is a competitive advantage. It is the evidence the university is properly managed, the needs of their customers are identified and the environment to satisfy them is established. The existence of defined procedures for problem solving (control of nonconforming product, corrective action, and preventive action) and tools for independent assessment of any designed process or activity (internal audit) leads the employees to proactive behavior. As a conclusion, the decision to implement QMS into university management is a strategic decision. Such a change has to be led by the top management of the university. The internal audits were found as the very effective tool. Not only as the tool for identification of issues (nonconformities) and possibilities for improvement, but also as the means which helps to the dissemination of information and awareness about QMS both at faculty and university level. Internal auditors act the role of promoters. They spread the best practices in the informal way from audited area to the departments they come from. It is the best way how to involve the abilities of people at all level to be used for organization's benefit. The implemented QMS brings the benefits both to customers of the university (students, employers, society) and to university itself. It is the reason why they started this process at VSB – Technical University of Ostrava. The results of the implemented and certified Quality Management System at the VSB-TUO are very positive. The implementation of QMS according to ISO 9000 series is looked as the starting point. The further development will be directed to reach the excellence in the sense of EFQM Model Excellence (Hutyra, 2008).

An engineering university in Taiwan implemented quality management system and earned ISO 9000. The spirit of the university is to establish a campus culture that integrates technology and humanities, grows knowledge and wisdom, unites theory and application, and combines quality and innovation. Non-conformances where found when quality systems have started implementation. The quality policy and quality objectives weren't documented. As a result, different parties in the university may have conflicting interests and do not focus their efforts to improve engineering education. Also, when developing the curriculum many departments do not put the customer requirements in the first place but are guided by the available facilities and the previous program. Students may learn some techniques that have already been phased out in industry. And service quality and higher education are not integrated through an effective management system. Furthermore,

documents such as the manuals in the laboratories, research theses, computer programs and their descriptions, textbook notes, etc. weren't there. But once processes are well documented, benchmarks are defined in order to achieve best practices. Other issues weren't found such as appointing a management representative, performing internal audit but only monitoring the university, performing preventive action but corrective action only. The development of its engineering education after the implementation of ISO 9001 was noticed in several areas: 1. program development; the university developed the administrative management system which evaluated through planned budget control to build up integral planning systems for administrative development of higher education. All the administration functions to support teaching and research have been implemented by the strategy, method and tool of total quality management. 2. Integrated university; faculty members have engaged in the establishment and supervision of educational programs. The teaching quality assurance system was designed to develop a systematic and integrated education system. The system was fully implemented in the university after a two-year effort and made the university an integrated one. 3. ISO certification; the university was registered as complying with the ISO 9001 standard. They had implemented the system without the support of outside consultants. Total quality improvement system was designed .The objective of the system was to improve its performance, especially the customer satisfaction. The ISO 9001 standard set more than the basic requirements for the university, it energized its quality. The ISO 9001 standard provides a learning environment for the engineering university to transform itself into customer-focused organizations. It is known that ISO registration is only the beginning of implementing an effective quality system. Top management commitment is the key to the success of any quality activity (Cheng, Lyn & Lin, 2004).

Strathmore University-Kenya management decided to implement a quality assurance system. Strathmore was in the early stages of developing into a university and had plans to become a leading outcome driven entrepreneurial university in the region. Strathmore planned to offer world class and accessible high quality university education and training in the areas of ICT, business administration and management, hospitality management, entrepreneurship and enterprise development. A decision to implement a quality management system was made and the process began. The management had plans to expand and implement a form of quality assurance before the planned growth, was seen as a way to ensure that quality was maintained as expansion occurred. It was a means of

establishing a systematic approach to quality management in both its administrative and academic functions. The QMS would provide assurance to management and the university's customers that the systems it had in place were working well. The university received fund to attain ISO 9000 certification as a structured way to achieve its quality objectives. The QMS has been used as a vehicle to implement various aspects of work in the university. The procedures are used in the process by the human resource department. The results of the customer communication process (customer surveys) are taken into consideration when departments are planning and setting performance goals. The quality manual has been used as a framework to hold policies and guidelines, for example, the teaching and learning quality assurance guidelines. A great challenge is to totally integrate the QMS into the everyday working life at the university, and not to see it as a separate entity. In a survey conducted, 100% of staff responded that the university QMS had improved on their work procedures. Overseeing the integration and the growth of quality has been the responsibility of the quality committee. This committee is headed by the quality manger of the university. The committee works to ensure that quality is maintained in the university and coordinates quality activities during the year like audits and the quality day. Another step that has been taken to ensure that the QMS is actively running in the university is the appointment of QMS departmental representatives. These are members of staff in each department who are charged with maintaining their departmental quality procedures, audit issues and implementing improvements. They also represent their department in the QMS departmental representative meetings and participate in the making of quality related decisions in the university. The human resource department has integrated quality issues as part of the both administrative and teaching staff seminars (Gatei & Seville, 2015).

# Chapter Three

# METHODOLGY

## 3.1 Introduction

This chapter discusses research design and methodology adopted for conducting the research study. It also explains development of research instrument, its validity and reliability. The chapter also gives details regarding population, sample selection and procedures adopted for data collection. Finally, it explains how the analysis and discussion of results are handled.

## 3.2 Research design and methodology

Research design ensures that study is relevant to problem under investigation and use appropriate tools. Selection of a right research design depends upon research study objectives, type of information needed, nature of the subject, degree of researcher's control over the case under and efforts, time and money (Saunders & Lewis &Thornhill, 2009). According to the researcher, the design that was selected for this research was the one suited so as to achieve an answer to the proposed research questions. For the purpose of the proposed research questions, the researcher chose to carry out a concurrent triangulation mixed method research design to explore the implementation of quality management system requirement according to ISO 9001:2008 in Public Universities in West Bank. In the concurrent triangulation approach the researcher collected both quantitative and qualitative data at the same timeframe and then compared the two databases to determine if there is convergence, differences, or some combination. The researcher used separate quantitative and qualitative methods to offset the weaknesses inherent within one method with the strength of the other. The quantitative and qualitative data collection happened in one phase of the research to save time; both the qualitative and quantitative data were gathered at one time at the universities. The weight is equal between the two methods. The researcher integrated and compared the two results of two databases side by side in the discussion. This side by side integration has a discussion section first provides quantitative statistical results followed by qualitative quotes that support or disconfirm the quantitative

results. The intent in using this design is to compare quantitative statistical results with qualitative findings to validate quantitative results with qualitative data. The researcher attempts to merge the two data sets typically by bringing the separate results together in the interpretation. The researcher collected and analyzed quantitative and qualitative data separately on the quality management system in Public Palestinian Universities in West bank and to what extent it complies with international standard of ISO 9001:2008 requirements. The different results were converged by comparing and contrasting the results. This approach helped the overall analysis and depth of the problem researched in Public Palestinian Universities, and it got vast amount of data to summarize and analyze. The goal of qualitative data is to understand the research topic more explicitly, from the perspective of the interviewee, and to understand how and why they have arrived at this perspective. Qualitative method gave a deeper understanding of implementing the requirement of quality management system in Public Palestinian Universities and helped in obtaining an edge in knowing the concept well. Qualitative method was typically more flexible that it allowed greater spontaneity and adaptation of the interaction between the researcher and the study participants. Participants have the opportunity to elaborate more and in greater detail than is typically the case with quantitative method. The quantitative method, in contrast, adopts standardized instruments with predetermined response categories which are numbered and the data thus gathered is usually numeric. In a quantitative method a set of structured questions are administered to a large number of respondents and the data thus collected can be statistically compared and contrasted. Moreover the findings are clear and exact which have broad generalization. Quantitative research is weak in understanding the context or setting in which people behave, something that qualitative research makes up for. On the other hand, qualitative research is seen as deficient because of the potential for biased interpretations made by the researcher and the difficulty in generalizing findings to a large group. Quantitative research does not have these weaknesses. Thus, by using both types of research, the strengths of each approach can make up for the weaknesses of the other. When used in combination, quantitative and qualitative data complement one another and yield a more complete analysis. This concurrent triangulation mixed method allowed the researcher to identify aspects of implementing the requirement of quality management system according to ISO 9001:2008 in Public Palestinian Universities more accurately by approaching it from different points of view using different methods and techniques. This mixed method is advantageous because it is familiar, the researcher looks at the research questions from different angles,

and clarify unexpected findings and potential contradictions, and can result in well-validated and substantiated findings (Saunders & Lewis &Thornhill, 2009).

## 3.3 Research Questions:

1. What is the current quality system applied in Public Palestinian Universities regarding the requirements of quality management system and to what extent does it comply with the international standard of ISO 9001:2008?

2. What are the weaknesses and challenges that prevent the implementation of quality management system requirements according to ISO 9001:2008 in order to accomplish the total application of these requirements?

3. What are the differences between Public Palestinian Universities in implementing quality management system requirements according to ISO 9001:2008?

4. What are the differences between Public Palestinian Universities in weaknesses and challenges which prevent the implementation of quality management system requirements according to ISO 9001:2008?

5. What are the benefits of implementing quality management system requirements according to ISO 9001:2008 in Public Palestinian Universities?

6. What are the solutions that help the administration of Public Palestinian Universities to improve the level of service quality and to continue the process of continuous improvement of services?

## 3.4 Population and sampling

The population of this research is defined as all academic employees including deans, chair persons, quality managers, and teachers in Public Palestinian Universities in West Bank which are seven universities An-Najah National University, Birzeit University, Bethlehem University, Hebron University, Al-quds University, Palestine Polytechnic University, Al-

quds Open University. The research took place in West Bank Public Palestinian Universities.

### 3.4.1 Sampling

The sample of the study consisted of three Public Palestinian Universities in the West Bank which are Bethlehem University, Hebron University, and Palestine Polytechnic University they represent the Southern Area.

For the qualitative method the researcher selected a purposive stratified non-random (non-probability) sample from quality managers to help the researcher understand the problem and the research questions. The researcher intended to select a purposive sample from quality managers which means that participants were selected because they are likely to generate useful data source and who have experience and knowledge of the issues being addressed in the research. Here the researcher was looking for individuals who have particular expertise that is most likely to be able to advance the researcher's interests and potentially open new doors. For the quantitative method the researcher selected a proportional non-random (non-probability) sample from academic teachers to help the researcher understand to what extent the universities implement quality management system requirements according to ISO 9001:2008 standards from academic teachers' point of view.

The researcher selected a purposive sample from head of quality managers in these universities. In order to achieve the aim of the study, the researcher conducted interviews with quality managers, who were three individuals, one from each university. The sample that the researcher selected in the quantitative method is a proportional non-random sample. The sample contains 204 Academic employees out of 465 which represent 44% of the population from deans, chairpersons, and teachers in different faculties in Bethlehem University, Hebron University, and Palestine Polytechnic University as shown in the table below:

**Table 3.1 Sample size and response rate**

| Public University | Academic employees Population | Questionnaire | | Response Rate % |
|---|---|---|---|---|
| | | Sent | Returned | |
| Bethlehem University | 104 | 47 | 47 | 100% |
| Hebron University | 172 | 80 | 78 | 97.5% |
| Palestine Polytechnic University | 189 | 86 | 79 | 91.8% |
| Total | 465 | 213 | 204 | 96.43% |

**Table 3.2 Distribution of the Sample**

| University | | Frequency | Percent |
|---|---|---|---|
| Valid | Bethlehem | 47 | 23% |
| | Hebron | 78 | 38% |
| | PPU | 79 | 39% |
| | Total | 204 | 100% |

## 3.5 Research resources

### 3.5.1 Primary Data

The research dealt with views and experiences of the selected quality managers in implementing the requirement of quality management system according to ISO 9001:2008 standards in Public Palestinian Universities. It was necessary to conduct the research through semi structured interviews. The use of interviews is more appropriate for the researcher to understand and get an in depth view of the topic being examined. Another primary data collection method was through a questionnaire adapted from previous studies and researches. Questionnaire is a set of questions addressed to obtain reliable answers from respondents of the selected sample. It is the most frequently used tool to collect information about a certain subjects through survey. Questionnaires are used to obtain information from participants who cannot be interviewed personally because of distance or time constrains. Questionnaire is an economical, quick and less bias data collection technique. The respondents become more open while answering questions because the questionnaire is more anonymous than an interview. Questionnaires are a flexible way to obtain data even from a large population or sample (Saunders & Lewis &Thornhill, 2009).

### 3.5.2 Secondary Data

This has been provided through the available research and various reports. This was done by accessing the library and books, journals, and internet extensively.

## 3.6 Instrumentation:

The qualitative research method included semi-structured interviews focusing on interviewees' perspectives and experience of implementing the requirement of quality management system in Public Palestinian University according to ISO 9001:2008. The quantitative research method used a survey in form of questionnaire. The researcher used self administered questionnaire as a research instrument as it is an appropriate tool to get information for the approach. The self-administered questionnaire is economical in efforts and money and permits a wider geographic contact. It gives respondents privacy and is more adequate in situations in which the respondents have to check information and give more valid data.

### 3.6.1 Design of interview questions:

The interview questions were designed, keeping in mind the research objectives. Twenty three questions were designed in accordance with the literature review. The interview questions were categorized into four parts. The first part reflected on the current quality system applied in Public Palestinian Universities regarding the five requirements of quality management system according to international standard of ISO 9001:2008 which are quality management system documentation, management responsibility, resource management, product realization, and measurement, analysis and Improvement. The second part, focused on the weaknesses and challenges that prevent Public Palestinian Universities in implementing quality management system according to ISO 9001:2008 and how do the universities respond to these challenges. The third part, focused on the benefits that result from implementing quality management system in Public Palestinian Universities. The last part was designed to suggest recommendation and solutions that help administration of Public Palestinian Universities to improve the level of service quality and to continue the process of continuous improvement of their services. The questions

designed were semi structured and open-ended because, it could give the employee the chance to elaborate his given situation. A copy of interview questions is in Appendix B.

### 3.6.2 Design of Questionnaire*:*

The questionnaire was developed as per the requirements of the five sections of ISO 9001: 2008 which are quality management system, management responsibility, resource management, product realization, measurement, analysis, and improvement. Keeping in view the requirements of ISO 9001, the items for the instrument were selected as a result of the literature review for the study. Majority of the items were taken from Khan's (2010) research which was taken from Gozacan Borahan & Ziarati's (2002) article. Thus 130 items were created. Then these items were broadly grouped under the headings of five sections of ISO 9001, documentation management, management responsibility, resource management, product realization and monitoring, measurement and improvement. The items under each section were further grouped under sub-sections as shown in the table 3.3.

### Table 3.3 Distribution of Questions According to Five Dimensions of ISO 9001:2008

| Group | No. of Questions asked | |
|---|---|---|
| | | **Total** |
| A. Documentation management (Quality Management system) | | 13 |
| 1. Documentation | 10 | |
| 2. Record | 3 | |
| B. Management Responsibility | | 27 |
| 1. Management commitment | 8 | |
| 2. Customer focus | 7 | |
| 3. Responsibility and authority | 5 | |
| 4. Internal Communication | 7 | |
| C. Resource management | | 27 |
| 1. Financial Resources | 3 | |
| 2. Human Resources | 7 | |
| 3. Training and Development | 3 | |
| 4. Infrastructure | 6 | |
| 5. Work Environment | 8 | |
| D. Product realization | | 43 |
| 1. Program Planning | 6 | |

| | | |
|---|---|---|
| 2. Program Design | 17 | |
| 3. Teaching processes | 8 | |
| 4. Assessment processes | 7 | |
| 5. Student admission processes | 5 | |
| E. Measurement Improvement & Analysis | | 20 |
| 1. Customer Satisfaction | 4 | |
| 2. Monitoring and Measurement of processes | 6 | |
| 3. Monitoring and Measurement of product | 10 | |
| **Total Questions** | **130** | **130** |

Also 25 items were created for problems faced by the Public Palestinian Universities in enhancing the quality management system of education. These items were grouped under the headings of, leadership, resource management, product realization, customer focus, training and development, work environment, and internal communication as shown in the table 3.4.

## Table 3.4 Distribution of Questions according to problems faced by Public Palestinian Universities

| Group | No. of Questions asked |
|---|---|
| | Total |
| 1. Leadership | 11 |
| 2. Resource Management | 4 |
| 3. Product realization | 2 |
| 4. Customer focus | 2 |
| 5. Training and development | 2 |
| 6. Work Environment | 2 |
| 7. Internal Communication | 2 |
| **Total Questions** | **25** |

The purpose from this questionnaire was to get information from the academic employees in higher education institutions no regular database is available. Majority of the questions consisted of close-ended questions and respondents were asked to respond on 5-point Likert scale with 'Fully Agree=5, 'Agree=4 ', Neither agree nor disagree= 3', 'Disagree=2' and 'Totally disagree=1, except the second question where three alternatives 'No=3 ', 'To Some Extent=2' and 'Yes=1' were given. The last two questions were open-ended. A copy of questionnaire is in Appendix C. The difference between totally agree=5 and totally disagree=1 equals 4 (5 – 1=4). The length is 5 divided by 4 equals 0.8; the table 3.5 below shows the scale used for questionnaire data analysis

**Table 3.5 Mean scale**

| Mean (Average) | Respondents' perception |
|---|---|
| Less than 1.8 | Very low |
| 1.8- 2.59 | Low |
| 2.6- 3.39 | Moderate |
| 3.4- 4.19 | High |
| 4.2 and more | Very High |

## 3.7 Validity

To make sure that our interview questions and questionnaire are valid and measure what it is designed to measure, The researcher contextualized Khan (2010) instrument then it was validated by the researcher's supervisor who provided his own modification and feedback and then it was sent to five referees three of them are holding PhD degree and another two are consultant in ISO 9001 field. They reviewed the interview questions and the questionnaire and suggested some improvements which were considered in the final format Appendix D shows referees. The validity of a questionnaire is the degree to which the questionnaire measures what it claims to measure, which called also the accuracy measurement. One of the most useful methods to measure the validity is the factor analysis by principal component method. It gives numbers called extraction communalities which estimate the variance in each questionnaire's item accounted for by the factors (components or dimensions) in the factor solution. For other extraction methods, these values are the proportion or the amount of variance accounted for in each variable by the rest of the variables. High values of the extraction coefficients (>0.5) indicate that variables (Parts) fit well with the factor solution, and should possibly not be dropped from the analysis. The next table 3.6 shows the range (Minimum-Maximum) of extraction coefficients for all items in each part and it's clear that all of them are greater than 0.5 which means that the questionnaire has high level of validity.

## Table 3.6 Extraction Communalities Range

| Part | Extraction Communalities Range (Min-Max) |
|---|---|
| Documentation Management | 0.56-0.79 |
| Management Responsibility | 0.53-0.87 |
| Resource Management | 0.57-0.85 |
| Product Realization | 0.65-0.86 |
| Measurement Improvement & Analysis | 0.56-0.85 |
| Weaknesses and challenges | 0.52-0.84 |
| **Total** | 0.77-0.94 |

## 3.8 Reliability:

To make sure that our interview questions are consistent and reliable, we conducted the interviews with the 3 quality managers for the first time. Then we chose one of them who participated in the first time to conduct the interview with her again. The responses were matching and this is clear evidence of the reliability of questions. Reliability analysis allows determining the extent, to which the items in the questionnaire are related to each other, and the reliability coefficient value represents overall index of the repeatability or internal consistency of the scale (questionnaire) as a whole, this procedure also enables to identify problem items that should be excluded from the scale. The next table 3.7 shows Alpha Cronbach coefficients which represent the most common procedure to assess scale of reliability and was used to test the reliability of the questionnaire:

## Table 3.7 Alpha Cronbach coefficients

| Part | N of Items | Cronbach's Alpha |
|---|---|---|
| Documentation Management | 13 | 0.86 |
| Management Responsibility | 27 | 0.94 |
| Resource Management | 27 | 0.91 |
| Product Realization | 43 | 0.96 |
| Measurement Improvement & Analysis | 20 | 0.90 |
| Weaknesses and challenges | 25 | 0.94 |
| **Total** | 155 | 0.97 |

The Reliability Coefficients (Alpha Cronbach) were 0.97 of the whole questionnaire, and it is clear that they lie between 0.86 and 0.96 for the parts of the questionnaire. These values of reliability coefficients indicates that there exist acceptable reliability level of the questionnaire(all greater than 0.70), and 97% of all data can be reproduced or repeated in the case of repeating this research using the same questionnaire.

## 3.9 Procedure and Time Frame:

The research was done in mid April, 2015 to September, 2016.

## 3.10 Data collection

Interviews in qualitative method are used as a tool for data collection. Collecting information was through semi structured face to face interviews based on site visits. Another primary data collection method was through a questionnaire adapted from previous studies and researches which enabled the researcher to get a clearer picture about implementing quality management system requirements in Public Palestinian Universities from academic employees and generalize results to other populations from the words of participants and represents data which are thoughtful in that participant. Collection of data for research study is really a challenging task. To facilitate the process of data collection the researcher attached an official letter to encourage university to cooperate with the researcher and provide the necessary information ( Appendix F) the researcher visited all universities personally and got the approval from vice president for academic affairs in Palestine Polytechnic University and Hebron University and from the dean of research in Bethlehem University. The researcher interviewed the persons responsible for the quality assurance in the three universities. Total of 213 questionnaires were distributed to the academic employees (deans and teachers) in these three universities. The researcher personally visited 3 universities and was successful to get the questionnaires from Bethlehem University's teachers and deans. Although the researcher gave the participants a week to complete the questionnaire, most of the deans and teachers in Hebron University and Palestine Polytechnic University were not available or busy and asked to come next day. The researcher visited these institutions again and again; some participants promised to complete the questionnaires as soon as possible while others had misplaced the

questionnaires and asked for another copy of the questionnaire. Teachers were taking time to complete the questionnaires as they were busy in their own academic activities. It took almost four weeks until the researcher was able to collect 204 completed questionnaires.

## 3.11 Limitation

This research was limited to Public Palestinian Universities in West Bank in the Southern Area which are Hebron University, Bethlehem University, Palestine Polytechnic University due to lack of cooperation and support from other Public Palestinian Universities. There was a lack of cooperation on the part of the majority of the participants as they thought completing the questionnaire wastage of their time. The participants looked at the research as benefiting only the researcher in getting MA degree with no tangible benefit to them. Also the research was limited to deans, directors, and head of quality units, teachers, and chairpersons of academic departments at Public Palestinian Universities in West Bank. In addition, sometimes the interviewees and participants were not to open up much, towards some question. They were hesitant to share factual information and present true picture because they thought that their responses might be used against them. This led to incomplete or incorrect information. Another limitation was the distance. Due to time and distance constraint, the researcher wasn't able to take many participants at the same day, the participants didn't interact easily, the researcher had to ask the participants to fill out the questionnaire many times and came back many times to take the questionnaire and make sure that it is complete and filled out. Data gathering took more time than anticipated. However, the researcher tried to capture the true picture as much as was possible and for that used all possible means. Quality in education is a new concept in Palestine. The participants were not that much familiar with the quality related concepts.

## 3.12 Statistical methods:

Once the data collection was finished, the researcher coded the data collected through the questionnaires and performed the needed data manipulation and the statistical analysis using the computer statistical package for social science (SPSS) to analyze collected data.

## The Statistical methods used in the analysis of the research are:

1. Frequencies and percentages to describe personal and demographic variables.
2. Means (averages) and Standard Deviations to measure perceptions of the respondents toward the questionnaires' Items.
3. One way analysis of variance (ANOVA) to test the differences and to make comparisons between the three universities.
4. Factor analysis method for validity.
5. Alpha (Cronbach) scales for reliability.

# Chapter Four

# DATA ANALYSIS

## 4.1Introduction

This chapter is concerned with the research findings. The demographic information presents the sample's characteristics. The descriptive analysis reveals the overall status of quality management practices in the institutions selected for the study. It shows the aspects of the quality management system where these institutions are strong and also weak areas where the institutions are lacking and need improvement. The Means (averages) and Standard Deviations were used to measure perceptions of the respondents toward the Questionnaires' Items. Then one way analysis of variance (ANOVA) was used to test the differences and to make comparison between the three universities.

## 4.2 Demographic Data

This part of the study aims to discuss the demographic characteristics of the persons who filled the questionnaire; the variables are gender, qualifications, and number of years in the job.

## Gender distribution

## Table 4.1 Gender sample table

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Missing | 32 | 15.7% |
| | Male | 125 | 61.3% |
| | Female | 47 | 23.% |
| | Total | 204 | 100.% |

The data showed that 61.3% of the respondents are males, while 23% of them are females and 15.7% didn't fill the gender

## Qualification level

## Table 4.2 Qualification sample table

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Missing | 42 | 20.6% |
| | PhD | 65 | 31.9% |
| | Master | 78 | 38.2% |
| | B.A | 19 | 9.3% |
| | Total | 204 | 100% |

The data indicated that 38.2% of the sample is Master holders, while 31.9% are PhD holders, 9.3% are B.A holders, and 20.6% didn't fill the qualification.

## Job year group

## Table 4.3 Job Years sample table

| | | Frequency | Percent |
|---|---|---|---|
| Valid | Missing | 31 | 15.1% |
| | Less than 10 years | 76 | 37.3% |
| | 10-20 | 73 | 35.8% |
| | 21-30 | 20 | 9.8% |
| | More than 30 years | 4 | 2.0% |
| | Total | 204 | 100% |

The data indicated that 37.3% of the respondents are within the group of less than 10 years, 35.8% of them are within the group 10-20 years, 9.8% of them are within the group 21-30 years, 2% of them are within the group more than 30 years, and 15.1% of them didn't fill job years.

## 4.3 Analysis and interpretations

This section contains the analysis of the data obtained from the three Public Palestinian Universities in Southern Area of West Bank. The responded answered almost all the questions except the last two open-ended questions where the respondents were encouraged to mention those problems faced by their institutions which were not covered by the respective questionnaire; and forward suggestions for improving the quality of education in the institutions.

### 4.3.1 Results related to the research questions:

### 4.3.1.1 Statistical analysis

1. **First Main Question:** What is the current quality system applied in Public Palestinian Universities regarding the requirements of quality management system and to what extent does it comply with the international standard of ISO 9001:2008?

   **Sub Questions:**

1) What is the current quality system applied in Public Palestinian Universities regarding the Quality Management System Documentation and to what extent does it comply with the international standard of ISO 9001:2008?

To answer this question, Means, Standard Deviations and Percentages are used for items related to this question as the following:

**Table (4.4): Means, Standard Deviations and Percentages for Quality Management System Documentation Measurement Items.**

| No. | Quality Management System Documentation Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 12 | Transfers in and out of programs or courses are clearly reconsidered and recorded. | 12.7% | 56.9% | 25.5% | 4.9% | 0.0% | 3.77 | 0.73 |
| 11 | The records of student's assessment are up to date and available. | 14.7% | 56.9% | 18.1% | 10.3% | 0.0% | 3.76 | 0.83 |
| 1 | A quality management system exists at the university institution. | 10.8% | 59.3% | 18.1% | 11.8% | 0.0% | 3.69 | 0.82 |
| 8 | Records of main processes are reserved. | 6.9% | 54.9% | 36.3% | 2.0% | 0.0% | 3.67 | 0.63 |
| 2 | Statements of quality policy and quality objectives are documented. | 5.9% | 62.3% | 24.0% | 7.8% | 0.0% | 3.66 | 0.71 |

| No. | Quality Management System Documentation Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 13 | Record and statistical data of student's progression are available. | 12.7% | 52.0% | 25.0% | 7.8% | 2.5% | 3.65 | 0.89 |
| 10 | Details of learning activities and students' personal development and leadership skills are available. | 7.8% | 53.4% | 29.4% | 9.3% | 0.0% | 3.60 | 0.77 |
| 7 | Documented procedures are reviewed and updated as necessary and re-approved. | 8.3% | 48.0% | 30.4% | 10.8% | 2.5% | 3.49 | 0.88 |
| 4 | The university has a documented quality procedures and work instructions. | 4.9% | 49.5% | 32.8% | 12.7% | 0.0% | 3.47 | 0.78 |
| 9 | Details of the staff involved in quality management system and control arrangement is available. | 7.8% | 43.6% | 35.3% | 10.3% | 2.9% | 3.43 | 0.89 |
| 3 | A quality manual exists at the university. | 7.8% | 38.2% | 35.8% | 15.7% | 2.5% | 3.33 | 0.92 |
| 6 | Documented procedures are approved before issuance. | 4.9% | 42.2% | 35.3% | 15.2% | 2.5% | 3.32 | 0.88 |
| 5 | Quality system procedures are consistent with the requirements of ISO standard and Institution's quality policy | 1.0% | 26.0% | 50.5% | 20.1% | 2.5% | 3.03 | 0.77 |
| | Total | 8.2% | 49.5% | 30.5% | 10.7% | 1.2% | 3.53 | 0.50 |

The table 4.4 shows means and standard deviations of quality management system documentation measurement items, the items were arranged descending by means. The total value of mean indicates that the respondents' attitudes are high, where the total mean value equals to (3.53) with standard deviation equals to (0.5) which indicates that we have little dispersion in the attitudes of the respondents and their attitudes are highly closed to gather. The items were arranged descending by its means, and the highest items are: the item(Transfers in and out of programs or courses are clearly reconsidered and recorded.) with mean (3.77) ,standard deviation (0.73), and agreed percentage 69.6% ,the item(The records of student's assessment are up to date and available.) with mean (3.76) ,standard

deviation (0.83), and agreed percentage 71.6% ,the item(A quality management system exists at the university institution.) with mean (3.69), standard deviation (0.82) and agreed percentage 70.1% ,the item(Records of main processes are reserved.) with mean (3.67), standard deviation (0.63) and agreed percentage 61.8% .From the other hand, the lowest items are: the item(Quality system procedures are consistent with the requirements of ISO standard and Institution's quality policy) with mean (3.03) and standard deviation (0.77),the item(Documented procedures are approved before issuance.) with mean (3.32) and standard deviation (0.88),the item(A quality manual exists at the university.) with mean (3.33) and standard deviation (0.92),the item(Details of the staff involved in quality management system and control arrangement is available.) with mean (3.43) and standard deviation (0.89) .

According to the highest perception of the respondents, the following conclusions can be obtained: transfers in and out of programs or courses are clearly reconsidered and recorded, the records of student's assessment are up to date and available, a quality management system exists at the university institution, records of main processes are reserved, statements of quality policy and quality objectives are documented, record and statistical data of student's progression are available, details of learning activities and students' personal development and leadership skills are available, documented procedures are reviewed and updated as necessary and re-approved, the university has a documented quality procedures and work instructions, and the details of the staff involved in quality management system and control arrangement is available. However the results show that it isn't clear if there is a quality manual at the universities, documented procedures approved before issuance, and quality system procedures are consistent with the requirements of ISO standard and Institution's quality policy.

Cumulative percentage indicates that 58% of the respondents agreed that documentation management is practiced at different levels, while 12% of them disagreed, and 30% neither agreed nor disagreed.

2) What is the current quality system applied in Public Palestinian Universities regarding the management responsibility requirement and to what extent does it comply with the international standard of ISO 9001:2008?

To answer this question, means, standard deviations and percentages are used for items related to this question as the following:

## Table (4.5): Means, Standard Deviations and Percentages for Management Responsibility Measurement Items.

| No. | Management Responsibility Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 2 | The university has a clear mission linked to quality | 21.1% | 59.3% | 10.3% | 3.4% | 5.9% | 3.86 | 0.98 |
| 1 | The university has a clear vision linked to quality | 20.1% | 57.8% | 13.2% | 2.9% | 5.9% | 3.83 | 0.98 |
| 24 | Details regarding the location and availability of all learning and physical resources such as buildings, playgrounds, libraries, IT labs etc, including those available off-site are provided to students. | 11.3% | 64.7% | 17.2% | 6.9% | 0.0% | 3.80 | 0.72 |
| 13 | Financial support for poor but talented students is available. | 12.3% | 63.7% | 14.7% | 6.9% | 2.5% | 3.76 | 0.84 |
| 4 | The university has clear quality objectives and values | 13.2% | 63.7% | 12.7% | 6.9% | 3.4% | 3.76 | 0.89 |
| 15 | The official of the university/institution are easily available to the teachers and the students. | 13.2% | 55.9% | 25.0% | 4.9% | 1.0% | 3.75 | 0.78 |
| 16 | Academic program leader is identified. | 9.3% | 55.4% | 31.4% | 3.9% | 0.0% | 3.70 | 0.69 |
| 20 | There is job specification for the staff/employees. | 7.8% | 62.7% | 20.1% | 6.9% | 2.5% | 3.67 | 0.82 |
| 3 | The university has a policy to improve quality and maintain standards | 15.7% | 50.5% | 20.1% | 10.3% | 3.4% | 3.65 | 0.98 |
| 26 | The staff/employees are made aware of the appraisal. | 5.4% | 57.4% | 32.4% | 4.9% | 0.0% | 3.63 | 0.66 |
| 11 | There are arrangements for counseling and welfare support for the students/the teachers. | 6.9% | 61.3% | 20.1% | 8.3% | 3.4% | 3.60 | 0.87 |
| 18 | Roles of staff involved in learning resources and technical support staff are identified. | 4.9% | 61.8% | 22.1% | 8.8% | 2.5% | 3.58 | 0.82 |

| No. | Management Responsibility Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 14 | Teachers are provided opportunities to improve their qualifications. | 11.8% | 52.5% | 20.1% | 12.3% | 3.4% | 3.57 | 0.97 |
| 5 | Details of learning activities and students' personal development and leadership skills are available. | 10.3% | 50.5% | 25.0% | 13.2% | 1.0% | 3.56 | 0.88 |
| 17 | The roles of other staff involved in the program are established. | 6.9% | 50.0% | 34.8% | 8.3% | 0.0% | 3.55 | 0.74 |
| 27 | There is effective communication between academic staff and learning resources staff. | 8.3% | 50.5% | 31.4% | 7.4% | 2.5% | 3.55 | 0.84 |
| 9 | The students have access to an office for their social and co-curricular activities. | 10.8% | 46.6% | 27.9% | 14.7% | 0.0% | 3.53 | 0.87 |
| 23 | The students are fully informed of their rights and responsibilities. | 9.3% | 43.6% | 36.8% | 10.3% | 0.0% | 3.52 | 0.80 |
| 25 | Plans are communicated to the academic and the nonacademic staff/employees. | 7.4% | 50.5% | 27.0% | 12.7% | 2.5% | 3.48 | 0.90 |
| 6 | Study is conducted to identify the needs of the students/staff/employees/business and industry needs. | 7.8% | 42.6% | 35.8% | 10.8% | 2.9% | 3.42 | 0.89 |
| 12 | There is a comprehensive service to students on careers and the world of employment. | 4.9% | 50.0% | 28.9% | 13.7% | 2.5% | 3.41 | 0.87 |
| 19 | There is a quality management representative. | 11.3% | 39.7% | 32.8% | 11.3% | 4.9% | 3.41 | 1.00 |
| 8 | Management reviews the quality management system (objectives, processes, achievements, audit results) and take appropriate action when needed. | 6.4% | 44.1% | 34.3% | 12.7% | 2.5% | 3.39 | 0.88 |
| 22 | The students/ staff are aware of the vision, mission and objectives of the institution. | 3.9% | 44.6% | 36.3% | 11.8% | 3.4% | 3.34 | 0.86 |
| 10 | Students/Teaching staff/Non-academic staff is involved in decision-making. | 5.4% | 39.7% | 35.8% | 15.2% | 3.9% | 3.27 | 0.92 |

| No. | Management Responsibility Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 7 | The students'/ staff's views on the operational aspects of the institution are sought. | 1.0% | 43.6% | 39.7% | 12.3% | 3.4% | 3.26 | 0.82 |
| 21 | The students/ staff/ employees are aware of quality management system and control arrangements. | 2.5% | 33.8% | 41.7% | 17.2% | 4.9% | 3.12 | 0.89 |
| | Total | 9.2% | 51.7% | 26.9% | 9.6% | 2.5% | 3.56 | 0.54 |

The table 4.5 shows means and standard deviations of management responsibility measurement items, the items were arranged descending by means. The total value of mean indicates that the respondents' attitudes are high, where the total mean value equals to (3.56) with standard deviation equals to (0.54) which indicates that we have middle dispersion in the attitudes of the respondents and their attitudes are closed to gather moderately.

The items were arranged descending by its means, and the highest items are: the item(The university has a clear mission linked to quality) with mean (3.86) , standard deviation (0.98) , and highest agreed percentage ( 80.4%),the item(The university has a clear vision linked to quality) with mean (3.83), standard deviation (0.98) , and agreed percentage( 77.9%),the item(Details regarding the location and availability of all learning and physical resources such as buildings, playgrounds, libraries, IT labs etc, including those available off-site are provided to students.) with mean (3.8) , standard deviation (0.72), and agreed percentage (76%),the item(Financial support for poor but talented students is available.) with mean (3.76) , standard deviation (0.84) and agreed percentage (76%) , the item(The university has clear quality objectives and values.) with mean (3.76), standard deviation (0.89), and agreed percentage (76.9%).

The lowest items are: the item(The students/ staff/ employees are aware of quality management system and control arrangements.) with mean (3.12), standard deviation (0.89) and disagreed percentage (22.1%) ,the item(The students'/ staff's views on the operational aspects of the institution are sought.) with mean (3.26) , standard deviation (0.82) and disagreed percentage (15.7%) ,the item(Students/Teaching staff/Non-academic staff is involved in decision-making.) with mean (3.27) , standard deviation (0.92) and disagreed percentage (19.1%),the item(The students/ staff are aware of the vision, mission

and objectives of the institution.) with mean (3.34) , standard deviation (0.86) and disagreed percentage (15.2%), the item(Management reviews the quality management system (objectives, processes, achievements, audit results) and take appropriate action when needed.) with mean (3.39) , standard deviation (0.88) and disagreed percentage (15.2%) , the item (there is a comprehensive service to students on careers and the world of employment,) with mean (3.41), standard deviation (0.87) and disagreed percentage (16.2%),the item (there is a quality management representative) with mean (3.41) , standard deviation (1) and disagreed percentage (16.2%).

According to the highest attitudes of the respondents, the following conclusions can be obtained: The university has a clear mission linked to quality, the university has a clear vision linked to quality, details regarding the location and availability of all learning and physical resources such as buildings, playgrounds, libraries, IT labs etc, including those available off-site are provided to students, financial support for poor but talented students is available, university has clear quality objectives and values, the official of the university/institution are easily available to the teachers and the students, academic program leader is identified, there is job specification for the staff/employees, the university has a policy to improve quality and maintain standards, the staff/employees are made aware of the appraisal, roles of staff involved in learning resources and technical support staff are identified. However the results show that it isn’t clear if the management reviews the quality management system (objectives, processes, achievements, audit, and results) and takes appropriate action when needed. Also if the students, teaching staff and non-academic staff are aware of the vision, mission and objectives of the institution, are involved in decision making , their views are sought on the operational aspects of the institution, and are aware of quality management system and control arrangements.

The table 4.6 shows means, standard deviations and the percentages for the management responsibility measurement components:

**Table (4.6): Means, Standard Deviations and the Percentages for the Management Responsibility Measurement Components.**

| No. | Management Responsibility Measurement Components | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 1 | Management commitment | 11.9% | 51.5% | 23.9% | 9.1% | 3.6% | 3.59 | 0.67 |
| 3 | Responsibility and authority | 8.0% | 53.9% | 28.2% | 7.8% | 2.0% | 3.58 | 0.60 |
| 2 | Customer Focus | 9.3% | 52.8% | 24.6% | 10.9% | 2.4% | 3.56 | 0.65 |
| 4 | Internal Communication | 6.9% | 49.3% | 31.8% | 10.2% | 1.9% | 3.49 | 0.53 |
| | Total Management Responsibility | 9.2% | 51.7% | 26.9% | 9.6% | 2.5% | 3.56 | 0.54 |
| F-test-Value(Repeated Measures)=1.13 , P-value=0.34 | | | | | | | | |

The table 4.6 shows the highest management responsibility measurement component was the (Management commitment) with mean (3.59), standard deviation (0.67) and agreed percentage (63.4%), then the (Responsibility and authority) with mean (3.58) , standard deviation (0.6) and agreed percentage(61.9%)then the (Customer Focus) with mean (3.56) , standard deviation (0.65) and agreed percentage (62.1%), and the last one is the (Internal Communication) with mean (3.49) , standard deviation (0.53) and agreed percentage (56.2%). The F-test shows that the differences between these components are not significant (P-value<0.05).

Cumulative percentage indicates that 61% of the respondents agreed that Management Responsibility exists in the University at different levels, while 12% of them disagreed, and 27% neither agreed nor disagreed.

**3)** What is the current quality system applied in Public Palestinian Universities regarding the resource management requirement and to what extent does it comply with the international standard of ISO 9001:2008?

To answer this question, means, standard deviations and percentages will be used for items related to this question as the following:

## Table (4.7): Means, Standard Deviations and Percentages for Resource Management Measurement Items.

| No. | Resource Management Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 27 | Graduation is held regularly and annually for awarding degrees to the students | 35.3% | 45.1% | 16.2% | 1.0% | 2.5% | 4.10 | 0.88 |
| 16 | The students/the teachers have access to relevant and appropriate IT facilities including internet, application software and on- line databases. | 12.7% | 53.9% | 24.0% | 9.3% | 0.0% | 3.70 | 0.81 |
| 9 | Learning resources staff is appropriately qualified. | 9.8% | 53.9% | 25.5% | 8.3% | 2.5% | 3.60 | 0.87 |
| 20 | The teachers are encouraged to conduct research studies. | 13.2% | 52.5% | 16.2% | 15.7% | 2.5% | 3.58 | 0.99 |
| 21 | The university is an equal opportunity institution. | 11.8% | 48.0% | 27.0% | 10.8% | 2.5% | 3.56 | 0.92 |
| 7 | Learning resources staff is appropriately experienced. | 4.4% | 53.9% | 34.8% | 4.4% | 2.5% | 3.53 | 0.76 |
| 23 | There are chances of promotion for the teachers from one scale to another. | 5.9% | 55.9% | 26.0% | 9.8% | 2.5% | 3.53 | 0.84 |
| 25 | The students'/Teachers' safety is ensured at the campus. | 9.3% | 52.9% | 22.5% | 11.8% | 3.4% | 3.53 | 0.94 |
| 4 | There is a staff to support the students' social & co-curricular activities. | 2.5% | 55.9% | 29.9% | 9.3% | 2.5% | 3.47 | 0.80 |
| 6 | The staff is appropriately qualified. | 6.9% | 47.5% | 32.8% | 10.3% | 2.5% | 3.46 | 0.86 |

| No. | Resource Management Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 13 | Training and development needs of learning resources staff/ employees / academic staff are identified. | 4.4% | 52.9% | 27.9% | 12.3% | 2.5% | 3.45 | 0.86 |
| 17 | There is overall strategy for learning resources and their development | 6.9% | 46.6% | 32.4% | 11.8% | 2.5% | 3.44 | 0.88 |
| 11 | Development and training program exists for academic staff/ non-academic staff/employees | 5.9% | 52.5% | 24.0% | 15.2% | 2.5% | 3.44 | 0.91 |
| 1 | There is central support for research at the university. | 9.8% | 46.1% | 25.5% | 12.7% | 5.9% | 3.41 | 1.03 |
| 19 | Laboratories, library and IT are appropriate. | 9.8% | 48.0% | 19.6% | 17.6% | 4.9% | 3.40 | 1.04 |
| 12 | There is a support for continuing professional development of academic staff. | 6.4% | 47.1% | 26.5% | 17.6% | 2.5% | 3.37 | 0.93 |
| 2 | There is restricted support for research at the university. | 8.3% | 39.7% | 30.4% | 20.6% | 1.0% | 3.34 | 0.93 |
| 18 | There are sufficient physical resources to support teaching and learning. | 6.9% | 46.1% | 21.1% | 23.5% | 2.5% | 3.31 | 0.99 |
| 10 | There are sufficient human resources to support teaching and learning. | 7.8% | 37.7% | 25.5% | 24.0% | 4.9% | 3.20 | 1.05 |
| 14 | Sufficient health services are available on campus | 2.0% | 43.1% | 30.4% | 20.1% | 4.4% | 3.18 | 0.93 |
| 15 | Sufficient emergency services are available on campus. | 3.9% | 39.7% | 27.0% | 20.1% | 9.3% | 3.09 | 1.06 |
| 8 | Learning resources staff is sufficient in number. | 4.4% | 28.9% | 43.6% | 15.7% | 7.4% | 3.07 | 0.96 |
| 3 | Sufficient funds for research are allocated in the university's annual budget. | 8.8% | 30.4% | 27.5% | 25.5% | 7.8% | 3.07 | 1.11 |

| No. | Resource Management Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 5 | The staff is sufficient in number. | 5.9% | 29.4% | 31.4% | 27.5% | 5.9% | 3.02 | 1.02 |
| 24 | Teachers are getting enough remuneration. | 1.0% | 35.3% | 31.4% | 24.0% | 8.3% | 2.97 | 0.98 |
| 22 | Teachers are awarded for performing well. | 3.4% | 23.5% | 37.3% | 30.4% | 5.4% | 2.89 | 0.94 |
| 26 | Award is given to group/team rather than individuals to enhance team spirit. | 2.0% | 15.2% | 49.5% | 29.4% | 3.9% | 2.82 | 0.81 |
| | Total | 7.8% | 43.8% | 28.4% | 16.2% | 3.9% | 3.33 | 0.51 |

The table 4.7 shows means and standard deviations of resource management measurement items, the items were arranged descending by means. The total value of mean indicates that the respondents' attitudes are medium, where the total mean value equals to (3.33) with standard deviation equals to (0.51) which indicates that we have middle dispersion in the attitudes of the respondents and their attitudes are closed to gather moderately.

The items were arranged descending by its means, and the highest items are: the item(Graduation is held regularly and annually for awarding degrees to the students) with mean (4.1) , standard deviation (0.88) and agreed percentage (80.4%),the item(The students/the teachers have access to relevant and appropriate IT facilities including internet, application software and on- line databases.) with mean (3.7), standard deviation (0.81) and agreed percentage (66.6%) ,the item(Learning resources staff is appropriately qualified.) with mean (3.6), standard deviation (0.87) and agreed percentage (63.7%),the item(The teachers are encouraged to conduct research studies.) with mean (3.58) , standard deviation (0.99) and agreed percentage (65.7%) .

The lowest items are: the item(Award is given to group/team rather than individuals to enhance team spirit.) with mean (2.82), standard deviation (0.81) and disagreed percentage (33.3%),the item(Teachers are awarded for performing well.) with mean (2.89), standard deviation (0.94) and disagreed percentage (35.8%),the item(Teachers are getting enough remuneration.) with mean (2.97), standard deviation (0.98) and disagreed percentage (32.3%),the item(The staff is sufficient in number.) with mean (3.02) , standard deviation (1.02) and disagreed percentage (33.4%) , the item(sufficient funds for research are

allocated in the university's annual budget) with mean (3.07), standard deviation (1.11) and disagreed percentage (33.3%).

The analysis shows that there is a moderate support for continuing professional development of academic staff, there are average amount of physical resources and human resources (staff and learning recourses staff) to support teaching and learning, moderate health services are available on campus, moderate emergency services are available on campus, average amount of funds are allocated for research in the university's annual budget, teachers are given average amount of remuneration, average amount of awards are given to teachers for performing well, average amount of awards are given to team rather than to individuals to enhance team spirit.

The table 4.8 shows means, standard deviations and the percentages for the resource management measurement components:

**Table (4.8): Means, Standard Deviations and the Percentages for the Resource Management Measurement Components.**

| No. | Resource Management Measurement Components | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 3 | Training and Development | 5.6% | 50.8% | 26.1% | 15.0% | 2.5% | 3.42 | 0.82 |
| 5 | Work Environment | 10.2% | 41.1% | 28.2% | 16.6% | 3.9% | 3.37 | 0.52 |
| 4 | Infrastructure | 7.0% | 46.2% | 25.7% | 17.1% | 3.9% | 3.35 | 0.65 |
| 2 | Human Resources | 6.0% | 43.9% | 31.9% | 14.2% | 4.0% | 3.34 | 0.64 |
| 1 | Financial Resources | 9.0% | 38.7% | 27.8% | 19.6% | 4.9% | 3.05 | 0.67 |
| | Total Resource Management | 7.8% | 43.8% | 28.4% | 16.2% | 3.9% | 3.33 | 0.51 |
| F-test-Value(Repeated Measures)=10.09 , P-value=0.00 | | | | | | | | |

The table 4.8 shows that the highest resource management measurement component was the (Training and Development) with mean (3.42), standard deviation (0.82) and agreed percentage (56.4%) , the next was the (Work Environment) with mean (3.37) , standard deviation (0.52) and agreed percentage (51.3%), then the (Infrastructure) with mean (3.35), standard deviation (0.65) and agreed percentage (53.2%), then the (Human Resources) with mean (3.34), standard deviation (0.64) and agreed percentage (49.9%), and the last one is the (Financial Resources) with mean (3.05), standard deviation (0.67) and agreed

percentage (47.7%).The F-test shows that differences between these components are significant (P-value<0.05).

Cumulative percentage indicates that 52% of the respondents agreed that Resource Management exists at different levels in the university, while 20% of them disagreed, and 28% neither agreed nor disagreed.

4) What is the current quality system applied in Public Palestinian Universities regarding the Product Realization requirement and to what extent does it comply with the international standard of ISO 9001:2008?

To answer this question, means, standard deviations and percentages will be used for items related to this question as the following:

**Table (4.9): Means, Standard Deviations and Percentages for Product Realization Measurement Items.**

| No. | Product Realization Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 22 | A year is broken down into specific periods of study i.e. semesters, terms | 34.8% | 52.5% | 11.8% | 1.0% | 0.0% | 4.`21 | 0.68 |
| 9 | Courses within the program are clearly identified. | 24.5% | 67.2% | 7.4% | 1.0% | 0.0% | 4.15 | 0.58 |
| 39 | There are planned arrangements for students' admission. | 24.5% | 59.3% | 14.2% | 2.0% | 0.0% | 4.06 | 0.68 |
| 19 | Total number of credits is established | 23.0% | 63.2% | 10.3% | 3.4% | 0.0% | 4.06 | 0.69 |
| 14 | Pre-requisites for each course are investigated and established. | 24.0% | 54.9% | 16.7% | 4.4% | 0.0% | 3.99 | 0.77 |
| 37 | Grading practice is explained to the students in advance | 25.0% | 52.5% | 18.1% | 4.4% | 0.0% | 3.98 | 0.78 |
| 7 | Programs have clear aims & objectives. | 16.2% | 65.2% | 17.6% | 1.0% | 0.0% | 3.97 | 0.61 |
| 10 | All electives are identified and classified appropriately | 19.6% | 58.8% | 19.6% | 2.0% | 0.0% | 3.96 | 0.69 |

| No. | Product Realization Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 35 | There is a students' assessment criterion as well as grading criterion for each course/subject | 17.6% | 64.7% | 13.7% | 3.9% | 0.0% | 3.96 | 0.69 |
| 24 | The academic programs aims and objectives are understood by the staff. | 26.5% | 46.6% | 22.5% | 4.4% | 0.0% | 3.95 | 0.82 |
| 8 | Objectives of program regarding skills to be learned are identified in advance. | 12.7% | 71.1% | 13.7% | 2.5% | 0.0% | 3.94 | 0.60 |
| 16 | The subjects content are related to the program aims and objectives | 22.1% | 52.9% | 20.6% | 4.4% | 0.0% | 3.93 | 0.77 |
| 38 | Teachers provide useful and timely feedback to students | 17.6% | 57.8% | 19.1% | 5.4% | 0.0% | 3.88 | 0.76 |
| 23 | Curriculum satisfies the academic requirements of the profession. | 22.5% | 48.0% | 24.5% | 4.9% | 0.0% | 3.88 | 0.81 |
| 13 | The structures of the courses are coherent. | 15.7% | 60.8% | 18.6% | 4.9% | 0.0% | 3.87 | 0.72 |
| 15 | The courses selected satisfy the range and depth of knowledge required for the relevant academic program | 15.7% | 61.8% | 17.6% | 2.5% | 2.5% | 3.86 | 0.80 |
| 17 | Each course contents are developed after discussions with internal staff with expertise in that particular area. | 14.7% | 57.8% | 25.0% | 2.5% | 0.0% | 3.85 | 0.69 |
| 21 | The students' progression routes are well defined. | 15.7% | 56.9% | 24.0% | 3.4% | 0.0% | 3.85 | 0.72 |
| 40 | There are students' selection criteria for the program. | 16.2% | 57.4% | 19.6% | 6.9% | 0.0% | 3.83 | 0.78 |
| 12 | Level of the courses, including elective subjects is decided before the start of the program. | 19.6% | 51.0% | 24.5% | 2.5% | 2.5% | 3.83 | 0.86 |

| No. | Product Realization Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 33 | The assessment papers i.e. examinations and assignments are prepared in accordance with the assessment requirements for the intended outcome. | 16.7% | 54.4% | 19.6% | 9.3% | 0.0% | 3.78 | 0.83 |
| 11 | The mix of core, elective and basic science courses satisfies the institution's rules and regulations. | 10.8% | 60.8% | 23.0% | 2.9% | 2.5% | 3.75 | 0.78 |
| 20 | There is arrangement for credit rating such that the students are not disadvantaged if they decide to withdraw out of the institution at any time. | 14.7% | 54.9% | 21.6% | 8.8% | 0.0% | 3.75 | 0.81 |
| 36 | Students assessed work is returned in time | 11.8% | 54.4% | 29.4% | 4.4% | 0.0% | 3.74 | 0.72 |
| 6 | Academic program handbook with details of rules and regulations and support etc. is available. | 12.7% | 61.8% | 14.2% | 8.8% | 2.5% | 3.74 | 0.88 |
| 27 | Learning experiences of the students are relevant to employment | 13.7% | 52.5% | 27.0% | 6.9% | 0.0% | 3.73 | 0.78 |
| 34 | The assessment ensures the students attain the required standards. | 14.2% | 50.5% | 29.4% | 5.9% | 0.0% | 3.73 | 0.78 |
| 32 | The students' assessment methodology for each course is determined in advance | 17.6% | 50.0% | 19.6% | 11.8% | 1.0% | 3.72 | 0.92 |
| 31 | Students are involved in teaching and encouraged to take part in discussion | 12.3% | 59.8% | 15.7% | 9.8% | 2.5% | 3.70 | 0.90 |
| 42 | Academic staff is aware of the admission process | 13.7% | 55.9% | 21.1% | 5.4% | 3.9% | 3.70 | 0.91 |

| No. | Product Realization Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 43 | The student entry and intended outcome of program and courses are carefully matched | 12.7% | 51.5% | 28.4% | 4.9% | 2.5% | 3.67 | 0.85 |
| 26 | Delivery methodology of course is decided in advance | 15.7% | 48.0% | 26.0% | 7.8% | 2.5% | 3.67 | 0.92 |
| 29 | The learning strategy clearly identifies teacher-centered & student-centered activities. | 7.4% | 55.9% | 29.4% | 7.4% | 0.0% | 3.63 | 0.73 |
| 25 | The academic program aims and objectives understood by the students. | 15.7% | 39.7% | 34.3% | 10.3% | 0.0% | 3.61 | 0.87 |
| 5 | There is a program committee with a defined composition and terms of reference to oversee the program operation and evaluation. | 9.8% | 55.4% | 24.5% | 6.9% | 3.4% | 3.61 | 0.88 |
| 41 | The students' selection criteria for program are strictly followed. | 9.8% | 54.9% | 23.5% | 8.8% | 2.9% | 3.60 | 0.89 |
| 4 | Physical resources are identified and addressed prior to the launching of the academic program. | 10.3% | 51.5% | 25.5% | 9.3% | 3.4% | 3.56 | 0.92 |
| 30 | Teacher-centered & student-centered activities are planned before start of the program. | 7.8% | 48.5% | 31.4% | 12.3% | 0.0% | 3.52 | 0.81 |
| 2 | A cost and benefit analysis for the proposed program is conducted prior to consideration by the Institution. | 5.9% | 48.5% | 34.3% | 8.8% | 2.5% | 3.47 | 0.83 |

| No. | Product Realization Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 28 | Students are given opportunities to become involved in program operation and take responsibility for their own learning. | 6.4% | 51.0% | 26.5% | 12.7% | 3.4% | 3.44 | 0.92 |
| 1 | Market research is conducted for the proposed program by the institution. | 7.4% | 40.2% | 39.7% | 9.3% | 3.4% | 3.39 | 0.88 |
| 18 | Each course contents are developed after discussions with external staff with expertise in that particular area. | 5.4% | 40.2% | 38.7% | 12.7% | 2.9% | 3.32 | 0.87 |
| 3 | Human resources are identified and addressed prior to the launching of the academic program | 6.9% | 40.2% | 32.4% | 18.1% | 2.5% | 3.31 | 0.93 |
| | Total | 15.5% | 54.4% | 22.7% | 6.3% | 1.1% | 3.77 | 0.50 |

The table 4.9 shows means and standard deviations of product realization measurement items, the items were arranged descending by means. The total value of mean indicates that the respondents' attitudes are high, where the total mean value equals to (3.77) with standard deviation equals to (0.5) which indicates that we have little dispersion in the attitudes of the respondents and their attitudes are highly closed to gather.

The items were arranged descending by its means, and the highest items are: the item(A year is broken down into specific periods of study i.e. semesters, terms) with mean (4.21), standard deviation (0.68) and agreed percentage (87.3%),the item(Courses within the program are clearly identified.) with mean (4.15) ,standard deviation (0.58) and agreed percentage (91.7%),the item(There are planned arrangements for students' admission.) with mean (4.06), standard deviation (0.68) and agreed percentage (83.8%),the item(Total number of credits is established) with mean (4.06) , standard deviation (0.69) and agreed percentage (86.2%) .

The lowest items are: the item(Human resources are identified and addressed prior to the launching of the academic program) with mean (3.31) , standard deviation (0.93) and

disagreed percentage (20.6%) ,the item(Each course contents are developed after discussions with external staff with expertise in that particular area.) with mean (3.32), standard deviation (0.87) and disagreed percentage (15.6%),the item(Market research is conducted for the proposed program by the institution.) with mean (3.39), standard deviation (0.88) and disagreed percentage (12.7%),the item(Students are given opportunities to become involved in program operation and take responsibility for their own learning.) with mean (3.44) , standard deviation (0.92) and disagreed percentage (16.1%) .

According to the highest attitudes of the respondents, the following conclusions can be obtained: courses within the program are clearly identified, there are planned arrangements for students' admission, total number of credits is established, pre-requisites for each course are investigated and established, grading practice is explained to the students in advance, programs have clear aims & objectives, there is a students' assessment criterion as well as grading criterion for each course/subject, objectives of program regarding skills to be learned are identified in advance, subjects content are related to the program aims and objectives, curriculum satisfies the academic requirements of the profession, the students' assessment methodology for each course is determined in advance, the academic program aims and objectives understood by the students, there is a program committee with a defined composition and terms of reference to oversee the program operation and evaluation. However it isn’t clear if the market research is conducted by the institution for the proposed program, if each course contents are developed after discussion with external staff with expertise in that particular area, and if human resources are identified and addressed prior to the launching of the academic program.

The following table shows means, standard deviations and the percentages for the product realization measurement components:

**Table (4.10): Means, Standard Deviations and the Percentages for the Product Realization Measurement Components.**

| No. | Product Realization Measurement Components | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 32 | Program Design | 18.3% | 57.5% | 19.7% | 3.8% | 0.6% | 3.89 | 0.55 |
| 34 | Assessment processes | 17.2% | 54.9% | 21.3% | 6.4% | 0.1% | 3.83 | 0.63 |
| 35 | Student admission processes | 15.4% | 55.8% | 21.4% | 5.6% | 1.9% | 3.77 | 0.63 |
| 33 | Teaching Processes | 13.2% | 50.2% | 26.6% | 8.9% | 1.0% | 3.66 | 0.56 |
| 31 | Program Planning | 8.8% | 49.6% | 28.4% | 10.2% | 2.9% | 3.51 | 0.71 |
| | Total Product Realization | 15.5% | 54.4% | 22.7% | 6.3% | 1.1% | 3.77 | 0.50 |
| F-test-Value(Repeated Measures)=12.16 , P-value=0.00 | | | | | | | | |

The table 4.10 shows that the highest product realization measurement component was the (Program Design) with mean (3.89), standard deviation (0.55) and agreed percentage (75.8%), the next was the (Assessment processes) with mean (3.83) , standard deviation (0.63) and agreed percentage (72.1%), then the (Student admission processes) with mean (3.77) ,standard deviation (0.63) and agreed percentage (71.2%), then the (Teaching Processes) with mean (3.66) ,standard deviation (0.56) and agreed percentage (63.4%), and the last one is the (Program Planning) with mean (3.51),standard deviation (0.71) and agreed percentage (58.4%). The F-test shows that differences between these components are significant (P-value<0.05). This means that the universities don't give much effort in program planning, such as market research for the proposed program, cost and benefit analysis for the proposed program, and identifying human resources prior to the launching of academic program. In teaching process students aren't given enough opportunities to become involved in program operation and take responsibility for own learning and teacher -centered & student-centered activities aren't well planned before start of the program.

Cumulative percentage indicates that 70% of the respondents agreed that product realization is practiced at different levels in the university, while 7% of them disagreed, and 23% neither agreed nor disagreed.

5) What is the current quality system applied in Public Palestinian Universities regarding the measurement improvement & analysis requirement and to what extent does it comply with the international standard of ISO 9001:2008?

To answer this question, means, standard deviations and percentages will be used for items related to this question as the following:

**Table (4.11): Means, Standard Deviations and Percentages for Measurement Improvement & Analysis Measurement Items.**

| No. | Measurement Improvement & Analysis Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 19 | There is no gender discrimination in the assessment of the students. | 26.5% | 50.5% | 16.7% | 6.4% | 0.0% | 3.97 | 0.83 |
| 17 | There are clear procedures to ensure grades and certification awarded to students are fair and unbiased. | 8.8% | 63.7% | 19.6% | 7.8% | 0.0% | 3.74 | 0.73 |
| 18 | Students' progression rates and non completion rates are clearly identified. | 8.8% | 59.8% | 23.0% | 8.3% | 0.0% | 3.69 | 0.75 |
| 4 | The students provide feedback on the quality of teaching. | 8.3% | 59.8% | 20.6% | 11.3% | 0.0% | 3.65 | 0.79 |
| 15 | There is an assessment schedule for the students so that they know what, when and how they are going to be assessed. | 7.8% | 54.4% | 30.4% | 5.4% | 2.0% | 3.61 | 0.79 |
| 5 | Academic programs are monitored for quality. | 8.8% | 54.4% | 26.0% | 8.3% | 2.5% | 3.59 | 0.86 |
| 8 | There is an appraisal and peer review of staff, including teaching skills. | 7.8% | 50.5% | 28.9% | 12.7% | 0.0% | 3.53 | 0.81 |
| 3 | The students provide feedback on the quality of the courses they study. | 4.9% | 58.3% | 21.1% | 15.7% | 0.0% | 3.52 | 0.82 |

| No. | Measurement Improvement & Analysis Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 7 | Feedback on the processes and procedures of the institution is received from teachers/students. | 3.9% | 52.5% | 34.8% | 8.8% | 0.0% | 3.51 | 0.71 |
| 20 | Problems faced by Higher Education Institutions are in enhancing the quality of education | 8.3% | 41.2% | 44.6% | 4.9% | 1.0% | 3.51 | 0.76 |
| 11 | There is a systematic and progressive development & assessment of achievement skills. | 3.9% | 47.1% | 39.7% | 9.3% | 0.0% | 3.46 | 0.72 |
| 16 | There are procedures for internal verification and evaluation of all aspects of assessment process. | 6.4% | 44.1% | 32.4% | 17.2% | 0.0% | 3.40 | 0.84 |
| 14 | The quality management system ensures curriculum review and development | 3.9% | 52.5% | 26.0% | 15.2% | 2.5% | 3.40 | 0.88 |
| 13 | A program evaluation is carried out at the Completion. | 3.4% | 47.5% | 33.3% | 14.7% | 1.0% | 3.38 | 0.81 |
| 9 | Programs are compared with other institutions for quality. | 3.9% | 48.5% | 27.5% | 20.1% | 0.0% | 3.36 | 0.85 |
| 1 | A system for taking staff's views exists at the university. | 4.9% | 42.2% | 32.4% | 20.6% | 0.0% | 3.31 | 0.85 |
| 6 | Administrative support services are monitored for quality. | 4.4% | 43.6% | 33.3% | 13.7% | 4.9% | 3.29 | 0.93 |
| 2 | There is a system for taking the students' views to improve quality. | 3.4% | 42.6% | 31.4% | 22.5% | 0.0% | 3.27 | 0.85 |
| 12 | There are clear arrangements to monitor students' career development after graduation. | 3.9% | 40.2% | 32.4% | 20.6% | 2.9% | 3.22 | 0.92 |

| No. | Measurement Improvement & Analysis Measurement Items | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 10 | The institution processes and procedures are compared with the best institutions for benchmarking. | 2.0% | 37.3% | 44.1% | 13.2% | 3.4% | 3.21 | 0.82 |
| | Total | 6.7% | 49.5% | 29.9% | 12.8% | 1.0% | 3.43 | 0.48 |

The table 4.11 shows means and standard deviations of measurement improvement & analysis measurement items, the items were arranged descending by means. The total value of mean indicates that the respondents' attitudes are high, where the total mean value equals to (3.43) with standard deviation equals to (0.48) which indicates that we have little dispersion in the attitudes of the respondents and their attitudes are highly closed to gather.

The items were arranged descending by its means, and the highest items are: the item(There is no gender discrimination in the assessment of the students.) with mean (3.97), standard deviation (0.83) and agreed percentage (77%),the item(There are clear procedures to ensure grades and certification awarded to students are fair and unbiased.) with mean (3.74), standard deviation (0.73) and agreed percentage (72.5%),the item(Students' progression rates and non completion rates are clearly identified.) with mean (3.69) ,standard deviation (0.75) and agreed percentage (68.6%),the item(The students provide feedback on the quality of teaching.) with mean (3.65) ,standard deviation (0.79) and agreed percentage (68.1%) .

The lowest items are: the item(The institution processes and procedures are compared with the best institutions for benchmarking.) with mean (3.21) , standard deviation (0.82) and disagreed percentage (16.6%) ,the item(There are clear arrangements to monitor students' career development after graduation.) with mean (3.22), standard deviation (0.92) and disagreed percentage (23.5%) ,the item(There is a system for taking the students' views to improve quality.) with mean (3.27), standard deviation (0.85) and disagreed percentage (22.5%) ,the item(Administrative support services are monitored for quality.) with mean (3.29), standard deviation (0.93) and disagreed percentage (18.6%), the item (A system for taking staff's views exists at the university.) with mean (3.31), standard deviation (0.85) and disagreed percentage (20.6%), the item (Programs are compared with other institutions

for quality.) with mean (3.36) , standard deviation (0.85) and disagreed percentage (20.1%).

According to the highest attitudes of the respondents, the following conclusions can be obtained: there is no gender discrimination in the assessment of the students, there are clear procedures to ensure grades and certification awarded to students are fair and unbiased, students provide feedback on the quality of teaching, academic programs are monitored for quality, the students provide feedback on the quality of the courses they study, problems faced by Higher Education Institutions are in enhancing the quality of education, However it isn't clear if the program evaluation is carried out at the completion, if programs are compared with other institutions for quality, if a system for taking staff's views exists at the university, if the administrative support services are monitored for quality, if there is a system for taking the students' views to improve quality, if there are clear arrangements to monitor students' career development after graduation, and if the institution processes and procedures are compared with the best institutions for benchmarking.

The following table shows means, standard deviations and the percentages for the measurement improvement & analysis components:

## Table (4.12): Means, Standard Deviations and the Percentages for the Measurement Improvement & Analysis Components:

| No. | Measurement Improvement & Analysis Measurement Components | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree | Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|
| 14 | Customer Satisfaction | 5.4% | 50.7% | 26.3% | 17.5% | 0.0% | 3.44 | 0.66 |
| 16 | Monitoring and Measurement of Product | 8.2% | 50.1% | 29.8% | 11.0% | 0.9% | 3.43 | 0.48 |
| 15 | Monitoring and Measurement of Processes | 5.1% | 47.8% | 32.4% | 12.8% | 1.8% | 3.42 | 0.59 |
| | Total Measurement Improvement & Analysis | 6.7% | 49.5% | 29.9% | 12.8% | 1.0% | 3.43 | 0.48 |
| F-test-Value(Repeated Measures)=0.09 , P-value=0.91 | | | | | | | | |

The table 4.12 shows that the highest Measurement Improvement & Analysis Component was the(Customer Satisfaction) with mean (3.44) , standard deviation (0.66) and agreed

percentage (56.1%),then the (Monitoring and Measurement of Product) with mean (3.43), standard deviation (0.48) and agreed percentage (58.3%),then the (Monitoring and Measurement of Processes) with mean (3.42) , standard deviation (0.59) and agreed percentage (52.9%). The F-test shows that the differences between these components are not significant (P-value<0.05).

Cumulative percentage indicates that 56% of the respondents agreed that measurement improvement and analysis exists at different levels in the university, while 14% of them disagreed, and 30% neither agreed nor disagreed.

**Second Main Question:** What are the weaknesses and challenges that prevent the implementation of quality management system requirements according to ISO 9001:2008 in order to accomplish the total application of these requirements?

To answer this question, the percentages will be used for items related to this question as the following:

## Table(4.13):Percentages for the weaknesses and challenges Items.

| No. | Weaknesses and challenges Items | Yes | To Some Extent | No |
|---|---|---|---|---|
| 14 | Lack of adequate space | 45.6% | 44.1% | 10.3% |
| 23 | Lack of incentives for the teachers for professional growth and performance | 41.2% | 40.7% | 18.1% |
| 22 | Poor pay structure for the teachers and employees | 38.7% | 33.8% | 27.5% |
| 6 | Centralized decision making | 38.2% | 40.7% | 21.1% |
| 12 | Lack of physical resources (buildings, libraries, labs etc.) | 32.4% | 44.1% | 23.5% |
| 15 | Lack of well-equipped libraries and labs | 31.4% | 41.1% | 27.5% |
| 8 | Quality is treated as a separate initiative | 30.9% | 41.2% | 27.9% |
| 7 | Lack of planning for quality | 30.4% | 32.8% | 36.8% |
| 11 | Employees resistance to change | 29.4% | 48.0% | 22.6% |
| 13 | Lack of human resources (qualified teachers etc.) | 28.9% | 47.1% | 24.0% |
| 24 | Lack of communication between the teachers and the administration | 28.4% | 40.2% | 31.4% |
| 17 | Lack of quality management system at the feeding colleges and schools | 27.5% | 52.0% | 20.5% |
| 18 | Lack of customer focus | 27.5% | 41.7% | 30.8% |
| 21 | Lack of training and motivation | 25.5% | 46.6% | 27.9% |
| 4 | Lack of leadership support | 25.0% | 38.2% | 36.8% |
| 3 | Management style prevents a learning culture. | 23.5% | 31.4% | 45.1% |
| 19 | Quality isn’t defined by Customer | 22.6% | 53.9% | 23.5% |
| 20 | Employees aren’t empowered to implement quality improvement | 22.5% | 52.0% | 25.5% |

| No. | Weaknesses and challenges Items | Yes | To Some Extent | No |
|---|---|---|---|---|
| 25 | Lack of communication between the students and the administration | 22.5% | 40.2% | 37.3% |
| 9 | External interference in the affairs of the institution | 22.5% | 37.8% | 39.7% |
| 2 | Management create barriers between departments | 22.1% | 35.8% | 42.1% |
| 5 | Top management aren't committed to quality | 18.6% | 38.8% | 42.6% |
| 1 | Poor management and failure to lead. | 18.1% | 45.1% | 36.8% |
| 10 | Favoritism and nepotism (المحاباة و المحسوبية) in decision making and appointment of staff and employees | 11.8% | 42.6% | 45.6% |
| 16 | Out-dated curriculum | 8.8% | 44.6% | 46.6% |
| | Total | 27.0% | 42.1% | 30.9% |

The table 4.13 shows the percentages of weaknesses and challenges items, the items were arranged descending by the (Yes) answer then by the (To Some Extent) answer. The total percentage value of weaknesses and challenges is moderate (42.2%).

The highest items are: lack of adequate space (45.6%) and lack of incentives for the teachers for professional growth and performance (41.2%). And the lowest items are : top management aren't committed to quality(18.6%), poor management and failure to lead(18.1%), favoritism and nepotism (المحاباة و المحسوبية) in decision making and appointment of staff and employees(11.8%), Out-dated curriculum(8.8%).

According to the attitudes of the respondents, the following conclusions can be obtained:

1. 45.6% of the respondents believed that available space and infrastructure is inadequate which disturbs the quality of education while 10.3% maintained that the available space and infrastructure was adequate. Similarly 44.1 % declared that lack of space was a problem to some extent.

2. 41.2% of the respondents believed that there are no sufficient incentives for the teachers' professional development while 18.1% maintained that incentives for the teachers' professional developments are sufficient and demonstrated no problem for the quality of education at the institutions. Similarly 40.7 % declared that it is a problem to some extent.

3. 38.7% of the respondents believed that poor pay structure for the teachers and employees exists which is affecting the quality of education while 27.5% were

satisfied with the pay structure. Similarly 33.8% declared that it was a problem to some extent.

4. 38.2% of the respondents believed that decision making is centralized in the university which is affecting the quality of education while 21.1% declared it isn't centralized. Similarly 40.7% declared that it is centralized to some extent.

5. 32.4 % of the participants viewed that there is lack of physical resources which is affecting the quality of education in the institutions while 23.5% maintained that there is no lack of physical resources. Moreover, 44.1 % declared that the problem of shortage of physical resources existed to some extent.

6. 31.4 % of the participants viewed that libraries and laboratories at the institutions are not well equipped and is affecting the quality of education while 27.5% maintained that libraries and laboratories are well equipped and this problem does not exist. Moreover, 41.1% declared that libraries and laboratories are not fully equipped and is a problem to some extent.

7. 30.9% of the participants viewed that quality is treated as a separate initiative, while 27.9% maintained that quality isn't treated as a separate initiative. Moreover, 41.2% declared that to some extent quality is treated as a separate initiative at the universities.

8. 30.4% of the participants viewed that there is lack of planning at the institutions while 36.8% maintained that there is no lack of planning at the institutions. Moreover, 32.8% declared that there is lack of planning to some extent at the institutions.

9. 29.4% of the respondents believed that any change for improvement of quality of education that resulted in extra work and discipline is resisted while 22.6% maintained that change is not resisted. Similarly 48% declared that resistance to change is a problem to some extent.

10. 28.9% of the participants viewed that there is lack of human resources at the institutions while 24% maintained that there is no lack of human resources at the institutions. Moreover, 47.1% declared that lack of human resource is a problem to some extent.

11. 28.4 % of the respondents believed that there is lack of communication between the teachers and the administration which is affecting the quality of education at institutions while 31.4% maintained that lack of communication between the teachers and the administration is not a problem. Similarly 40.2% declared that lack of communication between the teachers and the administration is a problem to some extent.

12. 27.5% of the respondents believed that there is lack of quality management system at feeding colleges and schools which is affecting the quality of education in higher education institutions while 20.5% maintained that lack of quality management system at feeding colleges and schools is not an obstacle in enhancing the quality of education. Similarly 52 % declared that it is a problem to some extent.

13. 27.5% of the respondents believed that there is lack of customer focus which is affecting the quality of education in higher education institutions while 30.8% maintained that lack of customer focus doesn't exist. Similarly 41.7 % declared that lack of customer is a problem to some extent.

14. 25.5% of the respondents believed that there is lack of training and motivation which is affecting the quality of education in higher education institutions while 27.9% maintained that lack of training and motivation doesn't exist. Similarly 46.6 % declared that lack of training and motivation is a problem to some extent.

15. 25% of the respondents believed that there is lack leadership support which is affecting the quality of education in higher education institutions while 36.8% maintained that lack of leadership support doesn't exist. Similarly 38.2% declared that lack of leadership support is a problem to some extent.

16. 23.5% of the respondents believed that management style prevents a learning culture which is affecting the quality of education in higher education institutions while 45.1% maintained that management support learning culture. Similarly 31.4% declared that management style prevents a learning culture to some extent.

17. 22.6% of the respondents believed that quality isn't defined by customer which is affecting the quality of education in higher education institutions while 23.5% maintained that quality is defined by customer. Similarly 53.9% declared that to some extent quality isn't defined by customer.

18. 22.5% of the respondents believed that employees aren't empowered to implement quality improvement which is affecting the quality of education in higher education institutions while 25.5% maintained that employees are empowered. Similarly 52% declared that to some extent employees aren't empowered to implement quality.

The table 4.14 shows the percentages for the weaknesses and challenges components:

## Table (4.14): Percentages for the Weaknesses and challenges Components:

| No. | Weaknesses and challenges Components | Yes | To Some Extent | No |
|---|---|---|---|---|
| 22 | Work environment | 40.0% | 37.2% | 22.8% |
| 18 | Resource management | 34.6% | 44.1% | 21.3% |
| 23 | Internal communication | 25.5% | 40.2% | 34.3% |
| 20 | Customer focus | 25.0% | 47.8% | 27.2% |
| 17 | Leadership | 24.6% | 39.3% | 36.1% |
| 21 | Training and development | 24.0% | 49.3% | 26.7% |
| 19 | Product realization | 18.1% | 48.3% | 33.6% |
| | Total Weaknesses and challenges | 27.0% | 42.1% | 30.9% |

The table 4.14 shows that the highest weaknesses and challenges component was the work environment (40.0%), the next was the resource management (34.6%), then the internal communication (25.5%), then the customer focus (25.0%), then the leadership (24.6%), then the training and development (24.0%), and the last one is the product realization (18.1%). As we can see that the weaknesses are work environment due to the lack of incentives for the teachers for professional growth and performance and poor pay structure

for the employees, and resource management due to the lack of adequate space, physical resources (buildings, libraries, labs, etc) and lack of qualified teachers.

**Third Main Question:** Are there differences between Public Palestinian Universities in implementing quality management system requirements according to ISO 9001:2008?

To answer this Question, the Analysis of Variance ANOVA test results will be used as the following:

## Table (4.15):The ANOVA test of differences in Quality Management System Requirements due to the University.

| Quality Management System Requirement | Source of Variation | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Documentation Management | Between Groups | 0.08 | 2 | 0.04 | 0.15 | 0.86 |
| | Within Groups | 50.42 | 201 | 0.25 | | |
| | Total | 50.49 | 203 | | | |
| Management Responsibility | Between Groups | 0.87 | 2 | 0.44 | 1.50 | 0.23 |
| | Within Groups | 58.10 | 201 | 0.29 | | |
| | Total | 58.97 | 203 | | | |
| Resource Management | Between Groups | 1.83 | 2 | 0.91 | 3.54 | 0.03 |
| | Within Groups | 51.91 | 201 | 0.26 | | |
| | Total | 53.74 | 203 | | | |
| Product Realization | Between Groups | 0.16 | 2 | 0.08 | 0.32 | 0.73 |
| | Within Groups | 50.74 | 201 | 0.25 | | |
| | Total | 50.90 | 203 | | | |
| Measurement Improvement & Analysis | Between Groups | 0.21 | 2 | 0.11 | 0.46 | 0.63 |
| | Within Groups | 46.22 | 201 | 0.23 | | |
| | Total | 46.43 | 203 | | | |

By the results of the table 4.15 we conclude that there are no statistical significant differences between the three universities at ($\alpha$=<0.05) in: documentation management, management responsibility, product Realization, and measurement improvement & analysis (P-values>0.05).

From the other hand, we conclude that there are statistical significant differences at ($\alpha$=<0.05) only in resource management due to the university (Sig.=0.03<0.05). To study these differences, we used the LSD (Least Significant Difference) Multiple Comparisons test, and the results obtained as the following:

**Table(4.16): The LSD Multiple Comparisons test of differences in Quality Management System Requirements due to the University.**

| Dependent Variable | (I) University | (J) University | Mean Difference (I-J) | Sig. |
|---|---|---|---|---|
| Documentation Management | Bethlehem | Hebron | -0.05 | 0.59 |
| | | PPU | -0.02 | 0.81 |
| | Hebron | Bethlehem | 0.05 | 0.59 |
| | | PPU | 0.03 | 0.73 |
| | PPU | Bethlehem | 0.02 | 0.81 |
| | | Hebron | -0.03 | 0.73 |
| Management Responsibility | Bethlehem | Hebron | -0.02 | 0.82 |
| | | PPU | 0.12 | 0.23 |
| | Hebron | Bethlehem | 0.02 | 0.82 |
| | | PPU | 0.14 | 0.10 |
| | PPU | Bethlehem | -0.12 | 0.23 |
| | | Hebron | -0.14 | 0.10 |
| Resource Management | Bethlehem | Hebron | 0.03 | 0.77 |
| | | PPU | 0.21 | *0.03 |
| | Hebron | Bethlehem | -0.03 | 0.77 |
| | | PPU | 0.18 | *0.03 |
| | PPU | Bethlehem | -0.21 | *0.03 |
| | | Hebron | -0.18 | *0.03 |
| Product Realization | Bethlehem | Hebron | 0.00 | 0.97 |
| | | PPU | -0.06 | 0.55 |
| | Hebron | Bethlehem | 0.00 | 0.97 |
| | | PPU | -0.06 | 0.46 |
| | PPU | Bethlehem | 0.06 | 0.55 |
| | | Hebron | 0.06 | 0.46 |
| Measurement Improvement & Analysis | Bethlehem | Hebron | -0.07 | 0.40 |
| | | PPU | -0.08 | 0.38 |
| | Hebron | Bethlehem | 0.07 | 0.40 |
| | | PPU | 0.00 | 0.97 |
| | PPU | Bethlehem | 0.08 | 0.38 |
| | | Hebron | 0.00 | 0.97 |

The results of the multiple comparisons table 4.16 shows that the differences in resource management were in favor of Bethlehem and Hebron universities (Sig.=<0.05), so we conclude that resource management applied in Bethlehem(mean=3.42) and Hebron(mean=3.39) universities more than PPU(mean=3.21).

**Table(4.17): Means and standard deviation of Quality Management System Requirements due to the University.**

| Quality Management System Requirement | University | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Documentation Management | Bethlehem | 47 | 3.50 | 0.49 |
| | Hebron | 78 | 3.55 | 0.49 |
| | PPU | 79 | 3.52 | 0.52 |
| | Total | 204 | 3.53 | 0.50 |
| Management Responsibility | Bethlehem | 47 | 3.59 | 0.50 |
| | Hebron | 78 | 3.62 | 0.52 |
| | PPU | 79 | 3.47 | 0.58 |
| | Total | 204 | 3.56 | 0.54 |
| Resource Management | Bethlehem | 47 | 3.42 | 0.47 |
| | Hebron | 78 | 3.39 | 0.41 |
| | PPU | 79 | 3.21 | 0.61 |
| | Total | 204 | 3.33 | 0.51 |
| Product Realization | Bethlehem | 47 | 3.75 | 0.53 |
| | Hebron | 78 | 3.75 | 0.52 |
| | PPU | 79 | 3.81 | 0.46 |
| | Total | 204 | 3.77 | 0.50 |
| Measurement Improvement & Analysis | Bethlehem | 47 | 3.37 | 0.45 |
| | Hebron | 78 | 3.45 | 0.57 |
| | PPU | 79 | 3.45 | 0.38 |
| | Total | 204 | 3.43 | 0.48 |

According to the table 4.17 the highest university in documentation Management was Hebron university (mean=3.55) then PPU(mean=3.52) then Bethlehem university(mean=3.50).The highest university in management responsibility was Hebron university(mean=3.62) then Bethlehem university (mean=3.59) then PPU (mean=3.47).The highest university in resource management was Bethlehem university(mean=3.42) then Hebron university(mean=3.39) then PPU (mean=3.21).The highest university in product realization was PPU (mean=3.81) then Bethlehem university(mean=3.75) and Hebron university(mean=3.75). The highest university in measurement improvement & analysis was Hebron university (mean=3.45) and PPU(mean=3.45) then Bethlehem university(mean=3.37).

**Fourth Main Question:** Are there differences between Public Palestinian Universities in weaknesses and challenges which prevent the implementation of quality management system requirements according to ISO 9001:2008?

To answer this Question, the Chi square test results were used as the following:

**Table (4.18):The Chi Square test of differences in the weaknesses and challenges that prevent the application of the requirement of quality management system due to the University.**

| | | | Weaknesses and challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 1 | 28 | 18 | 47 |
| | | Expected Count | .7 | 24.4 | 21.9 | 47.0 |
| | | % within University | 2.1% | 59.6% | 38.3% | 100.0% |
| | | Std. Residual | .4 | .7 | -.8- | |
| | Hebron | Count | 2 | 36 | 40 | 78 |
| | | Expected Count | 1.1 | 40.5 | 36.3 | 78.0 |
| | | % within University | 2.6% | 46.2% | 51.3% | 100.0% |
| | | Std. Residual | .8 | -.7- | .6 | |
| | PPU | Count | 0 | 42 | 37 | 79 |
| | | Expected Count | 1.2 | 41.0 | 36.8 | 79.0 |
| | | % within University | .0% | 53.2% | 46.8% | 100.0% |
| | | Std. Residual | -1.1- | .1 | .0 | |
| Total | | Count | 3 | 106 | 95 | 204 |
| | | Expected Count | 3.0 | 106.0 | 95.0 | 204.0 |
| | | % within University | 1.5% | 52.0% | 46.6% | 100.0% |
| Chi Square = 4.205 , P-value= 0.333 | | | | | | |

By the results of the table 4.18 we conclude that there are no significant differences between the three universities at ($\alpha$=<0.05) in the weaknesses and challenges that prevent the application of the requirement of quality management system (P-values>0.05). The percentages of (Yes) answer among the three universities are approximately equal(38.3%, 51.3%, 46.8%), and it is clear that the highest percentage of weaknesses and challenges was for Hebron University(51.3%) then for Palestine Polytechnic University (46.8%) then for Bethlehem University(38.3%).

From the other hand, the percentages of (To Some Extent) answer among the three universities are approximately equal(59.6%, 46.2%, 53.2%), and it is clear that the highest percentage of weaknesses and challenges was for Bethlehem university(59.6%) then for Palestine Polytechnic University (53.2%) then for Hebron university (46.2%).

### 4.3.1.2 Interview Analysis

In the interviews with the quality managers at the three Public Palestinian Universities the following questions have been discussed.

Accordingly, the answers given by the interviewees have been recorded.

**<u>Part One:</u> The questions under this part were designed to find out what is the current quality system applied in Public Palestinian Universities regarding the requirement of quality management system ( Quality management System Documentation, Management responsibility, Resource Management, Product Realization, and Measurement , Analysis and Improvement ) and to what extent does it comply with the international standard of ISO 9001:2008.?**

There is a clear objective for the three universities to provide quality in higher education for Palestinian students through providing in-depth knowledge and understanding so as to advance the students to a new knowledge in different walks of life. They work to ensure that research is publishable in international refereed journals.

## Teaching

Total quality management is partially implemented at the universities. There are steps in TQM taken towards some aspects of the teaching and learning process that involve course portfolio, teacher evaluation, teacher outlines. Universities established centre for teaching and learning which aims to serve the academic needs faculty; to create a supportive and professional environment to enrich the quality of teaching methods and research at the University. The Center aspires to meet the needs of faculty members by creating a supportive environment for their professional development. The universities aspire to ensure good quality teaching and learning. However, recent university self-review reports and faculty feedback have shown the need for a central office or body that would provide professional support for faculty on teaching and learning matters. There is a need to improve teaching at the universities, the universities believe in their role in the process of evaluating the quality of teaching. Accordingly, the quality assurance units are involved in different initiatives at the universities that aim to improve the university's teaching, learning, assessment and research policies.

## Community Service

Many faculties and departments have ties to the local community such as the education faculty through the school and the social sciences department with the different social service groups. English departments involvement with teacher development. Business development centers are one of the community-service extension units at the university. It undertakes the responsibility of strengthening the ties between the university and the Palestinian community. It seeks to enrich and develop the entire Palestinian community through the identification of emerging developmental needs and responding to them through different service programs. The universities contribute to the continuous development of the Palestinian human capital on a national level through their philosophy that human capital is the most valuable asset of any organization and society. They aim to empower individuals and all sorts of organizations—public, private, and nonprofit—by partnering with beneficiaries and stakeholders through providing innovative, community-driven, and impact-oriented developmental interventions that unlock competencies, and improve skills, attitudes, and knowledge resulting in sustainable impact. Social responsibilities to continuously provide quality educational and developmental programs aspire the universities to be a national and regional center of excellence that provide equitable access for the Palestinian community to quality education, sustainable developmental interventions, and trainings in a variety of fields, so that the community might realize its full potential to live productive and socially, economically, and politically active lives and contribute to a prosperous and democratic Palestine.

On the other side, the students also serves the community through establishing excellent partnership with community based associations and working for the best interest of local community in the different community outreach programs. The objectives of students' community service program are:

1. Recognizing the importance of volunteer work using own experiences in field work.
2. Practicing responsibility and commitment towards the community.
3. Developing critical thinking abilities by engaging in the community and becoming aware of the needs and problems of the community and exploring opportunities for development.
4. Practicing team work.

5. Performing basic community projects.

## Research

The research council is a major improvement in the area of TQM. This office is trying to formalize research activities at the university as well as institutionalizing the research activity. Moreover, the creation of the position of Dean of research is done in the spirit of improving quality. Teachers need to have opportunities and guidance in continuing to upgrade their discipline knowledge and research methodologies to be published in their fields. The mission of the deanship of research at the university is to foster a rich environment and capture opportunities for quality research and scholarly activity while ensuring conformity with internationally accepted ethical standards. This can be achieved through the creation, communication, and application of new knowledge; preparation of researchers to meet the needs of an increasingly diverse technological society; and outreach initiatives engaged with matters that serve the best interests and promote the common goal of the local community, society, and humankind at large. Without a strong research enterprise, scholarship cannot advance and students' educational experience will be diminished. Research activities at the university reflect the expertise, creativity, and initiative of the faculty who set the research agenda. High quality research also is vital to training the next generation of local scientists.

## Hebron University

Answer: Hebron University has a quality assurance unit which is responsible for the quality at the university, the quality assurance unit is familiar with ISO 9001 requirements, but they don't apply all elements at Hebron University. The dean of strategic for development is taking care of strategic planning, quality assurance unit and the monitoring part means that the quality assurance unit is following the action of the strategic plan whether they are implemented according to schedule or not. The quality assurance unit doesn't have a documented quality policy and objectives, they are planning to do it, and they don't have a quality manual. In general they have different types of procedures, recently they developed a quality assurance of an academic program and they distributed it in the university. Each department is responsible for its academic program should look and check out whether it is closed to the standard of good quality program. They need to have a

quality policy, a quality objectives and a quality manual to make sure that everything is in harmony, but it is in process and they don't have it right now. The quality assurance unit identified the activities that need to be documented and they know the processes and procedures that they need to document. The university is like a factory it has an input to the university which are the students, the university needs to make sure that their admission policy is according to an international standard and during the transformation of students who are staying for 4 years at the university, they need to make sure that the quality of all procedures and the teaching processes is according to the international standards and at the end the output which is the graduate should satisfy the requirement of the market. They don't have their own directory or guide of quality or procedure manual. They developed couple of procedures not the whole manual. Now they are almost finished with how to conduct a conference in terms of quality, also how to conduct a master thesis, also they visited the cafeteria of the university for quality assurance and made a quality report about it, so step by step they are trying to write quality procedures and processes and to link these processes together, because at the end these processes should end up with graduates that satisfy the requirements of the market. The quality assurance unit is in process of forming committees for the different elements of quality assurance; they have quality assurance of staff, quality assurance of students, quality assurance of the teaching process, quality assurance of administrative departments, quality assurance of academic and administrative rules, and quality of infrastructure. They identified these areas that they need to check and evaluate the quality of these elements. Now they are in process of forming a committee of 5 members of each of these elements. So they still don't have a coding system and a control of documents related to quality yet. The name of the person who is responsible for the quality assurance is the head of quality assurance and he is the dean of strategic for development and he is responsible for the authorization of documents. He controls the quality assurance, determine the quality assurance processes, will control the actions of all these processes and will monitor these processes and it is in process. The top management of the university made a commitment for quality assurance. First they convey this information to all employees for example the head of the board of trustees and the president of the university on different occasions insisted on the quality of graduates that the university should satisfy the market , their graduates should be high level graduates , second they established a quality assurance unit, third quality assurance unit has freedom to ask for resources for the environment for infrastructure , they have a lot of flexibility and freedom to enhance all these items so this indicates there is commitment of top

management for quality assurance . Students and staff are aware of the vision, mission and the institution plans are communicated to academic and non academic staff in different occasions. Hebron University follows the standard and the policy of the Accreditation and the Quality Assurance Commission (AQAC) which is working in partnership with higher education institutions to safeguard academic standards and improve the quality of higher education by developing and implementing accreditation criteria and assessment procedures that best serve the situation in Palestine and meet the requirements of international standards. The Accreditation and quality Assurance Commission is a national body, responsible directly to the Minister of Higher Education. AQAC has a governing board of academics, professionals and representatives from the public sector and civil society that validates its decisions and contributes to its development. The general objective of the Commission is the improvement of the quality of Palestinian higher educational programs and institutions. It has the responsibility of accreditation of new academic programs, and licensing and accrediting of the new educational institution, regardless of specialization and level of degree. Towards this end, it reviews existing criteria; develops new criteria for accreditation and licensing; and develops procedures for the ongoing comprehensive assessment of all programs of study that grant academic degrees. In general Hebron University follows these regulations and standards. There should be labs and enough facilities for the students, there should be recreation centers and sports which are all there. And they follow the manual of AQAC Ministry of Higher Education. And the ministry will not accredit any program at the university unless there are specific resources in place. AQAC licensing and accreditation standards are; first the Mission, organizational structure, and governance, second the planning and effectiveness, third financial resources, fourth transparency and integrity , fifth academic and administrative staff, sixth quality assurance , seventh student affairs and support services, eighth learning and teaching resources, ninth educational programs, tenth research and support activities, and eleventh community participation. Hebron University follow the national strategic plan, if there is a suggestion for program should be in harmony and according to the national strategy for the Ministry of Higher Education, and then the university study the market and have a feedback from the graduates. What the quality assurance is trying to do is establishing programs according to the strategic plan not random. The strategic plan will list all academic programs that they need to establish in the coming 5 years. They will revise the plan, if it needs some changes. But usually they start with the market requirements and if it is according to the national standard of the Ministry

of Higher Education, if they have enough resources to establish this program and they do cost and benefit analysis. For each institute to be established there are specific rules and for any program to be established also there are specific rules and requirements at the end there are quality assurance processes to make sure that these programs are there and they make self assessment for these programs. AQAC manual is a guide for getting the accreditation of programs, it is an external program evaluation but the university need a quality assurance guide for all internal processes inside the institution and a quality manual to make sure that they teach properly, provide all services needed by the students and the quality of their graduates satisfies the need of the market. The admission process is followed according to AQAC regulation; the Tawjihi degree should be 65% and above to accept the student to study bachelor degree and it depends on the programs like pharmacy, they don't accept less than 85 degree in Tawjihi, they need to follow the Ministry of Higher Education and there are some special requirements for some programs, for assessment process, they access teachers at the end of each semester , each staff member will fill out a form and each department head will fill out an evaluation form and each dean fill an evaluation form. It is part of their job to evaluate the teachers and do the assessment for the students through exams and homework. The university has a center called excellence of teaching center. Each member of staff members should take training with this center and they teach them how to teach the students. Each member at the university has a certification that he got training in how to teach according to what they call it two ways approach teaching, each new members at the university has to have training for one year. As a unit the quality assurance encouraged all deans to attend some classes of their teachers and give them some comments what they call it peer review. In the next semester the quality assurance will attend some of the lectures and will write some comments. It is not up to the teacher to teach the way he or she wants it. There is a percentage of freedom, but there are main rules, first he should prepare an outline for the course and should distribute it in the first day and distribute all the materials and at the end of the semester they ask the students how this course went on, they ask the teacher if he has any comments or any ideas to improve the course and how it has been taught. The procedure is there but it is not written in the manual. For the measurements and improvements a questionnaire (survey) is distributed to the students at the end of each semester and the student has a chance to evaluate the teachers and the material, also the teacher fill out a form they call it a course form to evaluate the content and the comments of this course for improvement, moreover they get feedback from their graduates but not in a regular bases, and they get

some information from the market, for example the university gets letters from banks that their graduates are doing great which means that they satisfy the requirements of the market. Also they ask departments to make study of their graduates' percentage of employment but not in a systematic way. Every four year they review the curriculum, the academic council discusses the development plan and the name of the courses to be up to date. This year they just finished recently reviewing the university requirements the electives and the required courses. Every four years they upgrade, evaluate, and analyze the curriculum of each program.

## Bethlehem University

The assistant vice president for academic affairs is responsible for the quality assurance at Bethlehem University. Bethlehem University didn't identify the requirement of ISO 9001:2008 that can be applied to the University. There is no documented quality policy, quality objectives, and there is no quality manual, they identified the activities that need to be documented for the quality assurance, learning activities, student personal development, leadership skills. They have some activities that are clear and they know exactly what they need to do, they have teaching and learning policy the purpose of this policy is to guide the implementation of this approach to all teaching and learning processes at Bethlehem University. It is designed to ensure that Bethlehem University provides students with excellent teaching practices that are supported by resource-enriched learning environments. The policy guides the strategic development of teaching and learning throughout the University. This policy, together with the policy on assessment and the policy on research, provides the basis from which departments, faculties and the institute of hotel management specify teaching and learning approaches appropriate to their disciplines, curriculum and student educational needs. In particular this policy provides a framework and focus for the university management for quality assurance. The university has assessment policy the purpose of the policy is to regulate assessment processes across the university, support student learning and manage students' grades, awards, progression and certification. This policy reflects the values in the university's mission statement. The policy relates and builds upon the university's teaching and learning policy. It is a mean to encourage effective student learning by providing timely feedback that will improve student performance and achievement of learning objectives. It is a mean by which a judgment is

made about student achievement that will form the basis for deciding whether the student can proceed to the next level, or qualifies for the award at the end of the program. It is a mean to gather information to evaluate the effectiveness of the course/program and the teaching strategies used. And they have also student exchange policy, Bethlehem University has agreements with international universities and other institutions that involve the exchange of students for short and/or long periods of time. The purpose of this policy is to ensure that the selection of BU students is done in a fair and transparent manner and to give guidelines for handling such exchanges with regards to logistics, course equivalencies, selection of students, and financial matters. BU is committed to offer its students opportunities to diversify their educational experience. In the context of the present political and economic conditions and the restrictions on travel imposed by the Israeli military, the university believes that student exchanges with international universities/institutions offer an excellent opportunity for their students to enhance their university education by meeting people from other countries, traveling to different parts of the world and discovering new cultures, all this while pursuing their degree at BU. They have different activities and procedures to document and monitor the quality of the teaching and learning process like characteristics of BU graduate, program specifications a document that specify the objectives of a program, its benchmarks, learning outcomes (knowledge and understanding, skills and attitudes), structure, assessment strategies and teaching methods for every degree they offer, and then they talk about course portfolio which is a collection of materials pertaining to specific course such as course outlines, assessment and teaching methods. The aim is to provide evidence about the achievement of the course learning outcomes. The procedures are clear, and they have templates and documents and they follow up procedures to make sure they don't just have it on paper and it is there on the ground. And they take the feedback to make improvements. They have things on paper but they are in process of developing a system on module to be able to have some sort of a centralized system as to put all these documents electronically and available to everyone .The academic office, departments, and deans offices also are in the process of establishing a second repository to keep all these documents as a soft copy to be assessable to everybody. The academic office has codes for keeping documents for the office but not for the quality documents. These documents are approved and reviewed by the assistant vice president and the vice president for academic affairs. For example they recently developed the new characteristic of BU graduates and based on that the departments are reviewing the learning objectives and outcomes. They review, they get

external reviewers, they have some peer review from other universities, meetings and everything is documented. Management is very highly committed. The policies that they did has been first of all reviewed by faculty members then were approved by academic council, and then were approved by the executive council which is the top authority. They are developing a monitoring process, they ask each department to form a committee to review new programs then it goes to the faculty council and then it goes to the academic council. Bethlehem University did a big workshop for employers, board of trustees and board of regions to come up with the attributes of BU graduates. They do a lot of focus groups with faculty and students. They do faculty development days they communicate the vision, mission, objectives and plans with the help of center for excellence for teaching and learning. Strategic plan is set from 2012-2018 for the academic office and it is being discussed at all levels with faculty and students. The academic office has a financial support when they want to have workshops for the employees or the faculty or students. Evaluation is made by the students for the teachers, the course evaluation, and a following up is made by the chair of the department and the academic office. The university has good infrastructure, they have computers, networks and they enjoy one of a very good environment in Palestine. In the research council they have prizes for the junior researcher and the senior researcher. Also they have the employee of the year award. And they have teacher evaluation done by the chairs and deans, those teachers get recognized but not financially. The university established a new program which is a software engineering; it went through a long process more than one year. It started with department identifying the needs; the department did a market research, met with different stakeholders; employers, students, graduates, and even consulted with colleagues from other universities. They did a feasibility study, and then produced a document, this document was first approved by the department, then it went to the faculty council gave comments on it. The department was updated from the faculty council and then it went to the academic council, the academic council gave their comments, then it went to the executive council, when it was approved by the executive council , they gave it for accreditation in the Ministry of Higher Education, following on this they are still waiting for the accreditation. Bachelor in software engineering is the first program in Palestine, it is a competitive advantage for Bethlehem University and they are waiting for the ministry approval. This committee will study all applications and interview the applicants; the committee with the human resource office will make a recommendation to the department. Programs and courses are designed around both discipline based content and processes of delivery in line with the student-

centered approach. They are based upon the achievement of learning outcomes that are aligned with program goals and the characteristics of the Bethlehem University Graduate. Learning outcomes refer to the knowledge, skills and attitudes that students should acquire and be able to demonstrate at the end of a course or program. Focusing on learning outcomes rather than content oriented objectives of a program helps identify appropriate teaching methods and associated assessment methods to ensure effective learning. All programs at Bethlehem University are required to have an associated set of learning outcomes. It is the responsibility of the Department/Faculty to maintain and update a program specification portfolio for each of its programs that includes clearly articulated program learning outcomes, a mapping of courses of the program to the learning outcomes, identified appropriate methods of delivery and assessment. Program Specifications Portfolio is accompanied by course portfolios. It is the responsibility of the teachers to plan their courses in alignment with the program and course learning outcomes as specified in the program specification portfolio, course portfolios and to identify the teaching and assessment methods through which the achievement of the course learning outcomes by the student are demonstrated. It is the responsibility of the Chairperson (or the Dean for faculties that have no departments) to oversee the process of the achievement of program learning outcomes based on students' course evaluations, the teachers' course portfolios and assessment procedures used. The Deans of the Faculties and the Director of the Institute of Hotel Management are responsible to manage the teaching learning process to ensure its high quality. Teaching at Bethlehem University is about enhancing values and challenging students' attitudes, improving their thinking and questioning skills, and enriching their subject and professional knowledge in order to positively impact their professional practices. As a result, the variety of teaching methods combines to form a fundamental element to achieving these objectives. In choosing teaching methods to use, teachers should, focus on motivating students to learn and to conduct their own studies and investigations to construct their own learning, promote the active participation of students and involve them in the teaching activities and tasks, provide content through meaningful contexts and activities, provide opportunities for collaborative learning through peer discussion and team work, and construct teaching activities and tasks that enhance students' critical thinking skills. Courses are delivered in a face-to-face mode supported by pedagogical technology and resources in line with the strategy for enhancing IT skills across the university. Each department/Faculty, based on its program and course learning outcomes identifies the teaching methods (lectures, group work, class presentations,

service learning, fieldwork, e-learning, problem based learning) for their effective delivery. Assessment methods are devices used to gather information on student achievement. Examples of assessment methods that are used at Bethlehem University: Multiple-choice and written examinations, online tests, projects, assignments and portfolios. Assessment tasks may be presented in the form of examinations, projects, essays, assignment, and similar methods. A quality assurance process which supports assessment design and marking activities. It involves confirmation that the assessment tasks and related decisions are reliable, valid and equitable across the courses in any program regardless of the lecturer or student cohort. The enrolment and admission at all Palestinian higher education institutions follow the instruction from the ministry. The minimum requirements needed for students to enroll at university are; a general secondary education certificate (Tawjihi) or its equivalent (e.g.: SAT or GCE certificates that are awarded to high school students according to their educational system) with equivalence requirements as set by the Palestinian Ministry of Higher Education). Student placement in the faculties depends on the completed stream (science or arts) indicated in the certificate, the student certificate score should not be less than 65 % in order to be eligible to apply for admission to the universities .Admission for first-year students is competitive and is based on the composite score of the students, on condition that these scores are not lower than required for admission to a certain faculty. The composite score is the average percentage score of the general secondary education certificate or equivalent and a percentage score of the last three years in high school. And then we have our own policy and procedures for admission. The departments that in great demand, like nursing BU increased the student certificate score from 65% to 85%. AQAC give the accreditation for all their programs, they don't accept any application unless they follow their procedures. The AQAC is a member of several international networks for quality assurance, such as the International Network for Quality Assurance in Higher Education (INQAAHE) and the Arab Network for Quality Assurance in Higher Education (ANQAHE). The AQAC negotiates cooperation agreements with regional and international quality agencies for the mutual recognition of accreditation decisions and degrees. The Palestinian QA system is based on the belief that internal quality assurance is the basis for external quality assurance evaluation. External quality assurance evaluation is obligatory, and applies to public and private institutions. Accreditation consists of three elements and generally involves three steps with specific activities as follows: 1. Self-assessment: a self-evaluation process conducted by the faculty, the administrators and the staff of the higher education institution

or academic programs, resulting in a report that takes as its reference the set of standards of AQAC. 2. Peer review: a study visit conducted by a team of peers selected by the AQAC, which reviews the documentation, reviews the premises, and interviews the academic and administrative staff, resulting in an assessment report, including a recommendation to the AQAC. 3. Decision making: examination by the AQAC board on the basis of a given set of criteria concerning quality and resulting in a final judgment and the communication of the formal decision to the institution and other concerned parties. The university has academic advising handbook, it shows the duties and responsibilities of the teachers, although the human resource office and the academic office are working on a consolidated book which is called an employee book, also they have a university catalog which includes all programs at the university, every program includes learning outcomes, criteria of acceptance to major, degree requirements, list of major required courses, list of university required courses, and course description. For measurement and improvement and to make sure that teaching and learning is supposed to happen the way the university wants it and according to their policy. Every teacher has to do a course portfolio which is a collection of materials pertaining to specific course such as course outlines, assessment and teaching methods. The aim is to provide evidence about the achievement of the course learning outcomes. They provide copies of the assessment task they do with the students, projects, exams, quizzes, exercises, and field work everything it has to be documented. They have to provide examples of students work, such as a work of an excellent student, student in the middle and low level student, and then their own reflection like saying what he or she did in the course and what he or she is thinking to do next year for improvement, if to add another subject, or to change the text book, and add more field work. To make sure that this is being done and to benefit from it in the future, every department has a committee that studies all the portfolios and based on them they introduce changes or improvement to the program. Also they have program specifications; they write the learning outcomes and everything they do leading to this degree. And every year the department evaluates the program and the courses. They also take student's views by doing students evaluation they evaluate the course and the teacher at the end of the semester. Many departments do focus groups and they ask the employers for feedback about their students. In the last workshop they did with the employers, they gave a very good feedback and suggested some improvements based on their experiences with their graduates.

## Palestine Polytechnic University

The vice president for planning and development is responsible for quality assurance unit at Palestine Polytechnic University. Palestine Polytechnic University didn't identify the requirement of ISO 9001:2008 that can be applied to the University. Among the university strategy they are planning to implement ISO in some areas especially in the administrative offices, but they haven't started applying it yet. Because they have a quality unit that is busy in the academic issues and following up the academic programs inside the university. It is following the curriculum, program design, but not according to the requirements of the ISO standards. There is a system inside the quality unit and procedures. But they aren't following any international quality standard it is their own procedures. They have an employee at the quality unit and a head of quality who resigned lately and now they are searching for another person. It is difficult to find someone because they need a specialist in quality with good qualifications and experience. Palestine Polytechnic University has a documented quality policy and objectives. The quality assurance unit was established on February 2005 to assure and enhance the quality in all educational, administrative and research aspects in Palestine Polytechnic University. It reports directly to the president of the university. The mission of this unit is to control and enhance the quality of administrative and educational performance, and to reinforce the quality culture in the university. It also aims to improve the educational environment through utilizing appropriate measures and professional criteria of the evaluation of academic programs. This leads to achieve the satisfaction of the local, regional, and international communities in the outcomes of the educational process of the university. The quality objectives are; create and spread the quality culture in the university, provide professional measures and criteria to assure the quality of education, improve and enhance the educational, administrative and research processes, develop a continues process of self evaluation in the university, assure the ability of the university graduates to satisfy the national and international market needs, improve the educational environment, and enhance the performance of services provided for students and staff. They don't have a quality manual, but they identified the activities that need to be documented to achieve the objectives, the quality assurance unit perform different activities, such as; implement the necessary activities to spread the quality culture and enhance the performance (training courses, workshops, conferences, etc.), plan and supervise the process of self evaluation for academic programs and provide the necessary training for the evaluation teams. This in

addition to facilitating the mission of external evaluation teams and follows up the implementation of their recommendations, provide the necessary criteria for evaluating and improving all academic related processes, such as, examinations, curricula, teaching and learning methods and student evaluation and develop a unified filing and archiving system to facilitate the quality control and evaluation processes. They have partial detailed procedures regarding activities affecting quality, there is no control for the document, the partial procedures that were documented has a coding system. They don't have a directory or a guide of quality. The quality assurance unit is responsible for issuing documents and these documents are approved by a committee. Documents for some programs were revised and updated. The quality assurance unit is responsible to coordinate with the departments and with the different vice presidents. They form a committee responsible for planning and quality controlling and improvement. Vice presidents and academic vice president are responsible to set the quality plan, control process, and the improvement process. Top management are committed to quality, vision and mission of the university talk about quality, also the main objectives of the strategic plan emphasize quality and improve of quality. There is internal communication about the vision and mission of the university. Every department has a quality committee includes academic and administrative staff. According to the physical infrastructure, they are in the process of utilizing their labs in an efficient way. They have a good evaluation system in the human resource. According to the financial resources every department has a budget. Based on the objectives set by each department, they spend the budget. They have lack of student services due to the expansion and the development of the university and they lack some spaces for student services. They are working on improving the university environment. The university supports the research, and publishing journals and articles, they have rewards for research and they have best teacher award. They choose the best teacher based on criteria and an evaluation. They do market research, feasibility study, cost and benefit analysis and they consider social responsibility before launching a new program. They keep in contact with the employers to continually improve and update the curriculum for their programs. There is a program committee it includes employers from private sector, academic teachers and they are in contact to continually improve the programs and the curriculum according to the market needs, the committees meet with the employers, they set the student skills that are required by the market and they start to build programs and courses to cover these skills. Building the curriculum is on competency based, they set the aims, objectives and learning outcomes based on the skills needed. All University

programs are accredited by the relevant regulatory body AQAC ( the accreditation and quality assurance commission ) AQAC is interested in the content of degree programs, the staff and physical resources available to support student's learning and assessment standards and employment rates. AQAC carries out periodic review of degree programs to ensure that they continue to meet the requirements for accreditation. Such reviews normally take the form of visits by a group of members of AQAC, who prepare a report on their findings. The format and organization of these reviews and what is required of subject areas in preparation are defined by AQAC. Existing programs are reviewed internally by faculties. For each program, a basic document called P.S should be prepared. The main purpose of program specifications is to describe the program aims and intended learning outcomes of each program. They contain information on the intended knowledge, understanding, skills and other attributes that will have been developed by students on successfully completing a specific program of study. They also provide details of the teaching, learning and assessment methods. The program specifications are required to be updated continuously, it is the key documents in all new programs submitted to AQAC for accreditation and they are used as a reference in annual monitoring and external examining. In the admission process some programs has entrance exams to specify the level of the student. In the assessment process the teacher is evaluated by the department chair, also they get a feedback from the students about the teacher, there are forms filled in the middle of the semester (Midterm student feedback) and at the end of the semester (Final summative feedback at the end of the course). Quality and standards of the courses taught at the university is the responsibility of all academic staff. Academic staff is expected to develop the skills of effective and excellent teachers. The quality of education is assured in part through the academic staff evaluation and educational documentation process. In this process staff members are expected to fill in an online form describing their activities in all departments, research activities, community services, and ways in which they enhance and encourage critical thinking and high level skills with their students, then the head of the department evaluate the staff member based on the self evaluation and follow up during the semester in addition to the student feedback. The university provides training and professional development opportunities through the center for excellence in teaching and learning which aims to achieve excellence in teaching and learning in the university through various educational activities and programs. The center seeks to improve the teaching skills and to build educational capacity of Palestine Polytechnic University staff to accomplish educational excellence through training, consultations,

introducing new teaching methodologies. Instructors should do a course portfolio that includes copy of their examining templates, assessment methods used during the semester and any other teaching and learning tools performed to improve the learning experience of their students. Lately they changed their teaching methods from traditional lecturing to something called enterprise education which means more student centered education concentrating on learning process not teaching process. More team work, presentations, projects, and more interaction from the students. They evaluate the output through assessments, exams and the ranking of the students. And according to the outcomes, they communicate with employers through meetings or through workshops. They ask about their graduates and if there are some areas need to be improved. They are in the process of working on graduate tracking system through the World Bank project for all the universities. If they apply this project, the process of tracking would be much easier with the private sector and they can get more feedback.

**<u>Part Two:</u> The questions under this part were designed to find out the weaknesses and challenges that prevent Public Palestinian Universities in implementing quality management system according to international standard of ISO 9001:2008 and how does the university respond to these challenges.**

The major challenge and weakness is insufficient funding which has a negative impact on the quality of higher education in West Bank and Gaza. Between 60%-70% of the operating budgets of universities are covered by tuition fees. Since there is no regularity and consistency in the payment of tuition fees, budgets of universities suffer yearly deficits. Only around 60 % of the budgeted amount allocated to higher education in the Palestinian National Authority has been disbursed per year. Revolving funds for student loans, have suffered from the total non-repayment by students and from a lack of grants from international sources and important contributions from the national budget. Also salaries have led staff members to take up extra work, which has a negative impact on the quality of teaching and on the amount and quality of research carried out. The professional development of staff members is restricted due to the absence of regular fellowship and scholarship programs to upgrade their qualifications and their teaching skills. Higher education has been characterized by competition between institutions to attract more students. New programs were added to increase their income without due attention to the needs of Palestinian society. Supply and rates of enrolment are high. The negative consequence is graduates unemployment. Research is still not considered a priority by the

national and the international funders of higher education. Funding is therefore limited and irregular.

## Hebron University

Quality assurance is very important to convince the market that the university cares about the quality of its graduates and the university cares about the satisfaction of the market, but to apply quality assurance needs a lot of resources and a lot of money and because of limited resources, Hebron University can't do what is always needed. If they want to put standards and follow them, this means they need to hire more staff members and sometimes they don't find qualified teachers and, they need to make sure that they have enough computers for all students, but because of the budget of the university, usually they don't get all what they need. So the weakness is the funding, also the unemployment, because the market is exaggerated with many graduates they don't get jobs and they don't apply what they need.

**Problems faced by Hebron University according to the respondents from the questionnaire distributed between the teachers working at Hebron University.**

Answer:

1. Adequate infrastructure
2. Enough financial governmental and private support.
3. Graduate unemployment
4. Large number of students in each section
5. Improve campus
6. Encourage staff to continue their education
7. Low motivation and minimum rights
8. Political situation and security at the university
9. Poverty especially of the students.
10. Lack of modernization for physical and social settings.
11. Quality means the quality of everything in the university.

## Bethlehem University

Quality is an ongoing process and the university wants to make sure that they practice and have high standards. They need to monitor the ongoing processes which starts from department committee and goes to the faculty council and then to the academic council. Sometime they face resistance from faculty, it takes time, and the teachers don't want to change, like the course portfolio, something new they don't know how to do it. They need to come up with a policy for quality, they don't have a written policy for quality assurance. Number of the staff and teachers compared to the university is small therefore many employees and teachers are overloaded. They suppose to have a quality management system department in charge of quality at the university. The assistant vice president for academic affairs is helping in the quality matters such as portfolios, monitoring of students' performance, learning outcomes, final exams, and they review the final exams which is according to their teaching and learning policy. They are trying to do it more institutionalized and more documented; it is a challenge because they need more qualified staff.

**Problems faced by Bethlehem University according to the respondents from the questionnaire distributed between the teachers working at Bethlehem University.**

Answer:

1. Restrictions impose by the Ministry of Higher Education
2. Standardization is required within their local context to better influence academic performance.
3. No orientation about the importance of quality management for offering quality education and no debates about the best ways to achieve progress.
4. Lack of motivation of administration reflects on the employees.
5. All the decisions are centralized in hands of few.
6. Lack of follow up and implementation of clear quality management strategies.
7. Difference between faculties based on personal aspects rather a clear institutional policy.
8. Financial policies and procedures are either lacking or missing parts.
9. Changes in Financial processes.

## Palestine Polytechnic University

The main challenging is the funding, qualified people are hard to find, and staff are overloaded. They don't have a complete quality management system, if they decided to implement the requirements of quality management system according to ISO 9001:2008 standards they will not go for the certification because it is a long process and auditing, they will implement it internally aiming for improvement. They need capacity building for some staff to get the qualification and implement the requirements of quality management system according to ISO 9001:2008.

**Problems faced by Palestine Polytechnic University according to the respondents from the questionnaire distributed between the teachers working at Palestine Polytechnic University.**

Answer:

1. Campus location
2. Lack of communication between teachers.
3. Lack of budgets.
4. Lack of grants and scholarships to improve and raise the qualifications of human resources.
5. Lacks of independency in the decision making.
6. Support for quality culture and infrastructure.

**Part Three: The questions under this part were designed to discover the benefits of Implementing Quality Management System in Public Palestinian Universities.**

The implementation of an ISO 9001 quality management system in a university environment ensures focusing on training and professional development of every faculty and staff member, enhances university's image with internationally accepted quality management standard; It leads to marketing and government accreditation benefits, ensures commitment to permanent improvement and involves measurement of performance and progress; through internal quality auditing, self-assessment, as well as external quality auditing. In addition, it allows university to decrease failures of student to pass courses/ exams, failures of courses to meet planned objectives, or failures of research projects to meet contract requirements; It reduces student complaints .Furthermore, it leads to a clearer understanding of roles, responsibilities and authority, a sense of ownership for quality improvement initiatives, better communication and understanding of the university's mission and objectives, better understanding between academics and support

staff, clearer distinction of the students and the staff's rights and responsibilities, establishing a clear statement of organizational mission, active commitment of the top management, employee involvement in planning and implementation, a teamwork approach that involved the workers in solving problems, and a market advantage. By integrating ISO 9001, university can demonstrate a documented quality management system; this documentation guides teaching, learning, research, and other university's processes. Quality procedures document each process in the organization and can be instructive to people who join the organization and to those in other departments, it provides structure by defining who is involved in each procedure and which other procedures it might interact or interfere with. By writing down a formal description of each procedure, people are forced to think about their job. They formalize what they do. This will lead them to see better ways of doing their job and discover wasteful practices. People also tend to idealize the description, and describe the way things should be rather than the way they are. This presents an opportunity to change existing practice the way things are to the way they should be. Also by integrating ISO 9001,University can identify the real needs and expectations for undergraduate, graduate, and other courses and programs being offered; It allows university to focus on student achievement; It allows university to design courses and programs that meet the stated needs and expectations; It allows university to identify quality problems of products and services being offered; It allows university to implement corrective and preventive actions in order for it to continuously improve results.

## Hebron University

First Quality assurance is very important for Hebron University because with the quality assurance they make sure that the quality of their graduates is high. Second they enhance the satisfaction of the local market, so the local market will respect their graduates and will hire them. So implementing quality management system creates a competitive advantage, they will compete with other universities inside and outside of Palestine , if the market knows that the university have quality management system and they apply it so it will attract students from other districts, and this is the issue that they are working on. 95% of their students are from Hebron area 4% from Bethlehem area and couple of students are from other districts. If they apply the quality management system they will become famous, other students from other parts of the country will apply to the university, and therefore it is a tool to gain the competitive advantage. With quality management system they have to determine all quality assurance processes, all inputs and outputs of each

processes, the monitoring of these processes and how these processes are interlinked together. This is to make sure that graduates are highly qualified; also there is a sustainability to convince the market that there is a continuous improvement in the quality of their graduates. If they don't apply quality management system the quality of their graduates will decline. The objective of applying quality management system is to increase stakeholders' confidence in the system and enhance the satisfaction of the market, the regional market as well as the international market. When they design a program they take into consideration the international rules for international curriculum and this help their graduates to compete in the international market and to get jobs outside Palestine.

## Bethlehem University

Implementing quality management system gives the university a competitive advantage .Implementing quality management system makes a real improvement in the institution's operation and processes. When they talk about course portfolio it makes the quality better. When every teacher makes the course portfolio and documents all the materials given to the students and put his own reflection, It helps other new teacher to see example of the work what the teacher did and also it monitors the quality of teaching. Therefore the students will have the same skills as written in the objectives and learning outcomes. Implementing Quality management increase stakeholders' confidence in the university, students has access to all information and the university is transparent.

## Palestine Polytechnic University

By implementing quality management system they will have better ranking among other universities, they will get a competitive advantage, good reputation for the university, and attracting more students, which are the main goals of quality. It is the responsibility of the university to graduate students with high quality, who can help the society and improve and develop the economy of our country. Also it increases the excellence in academic quality and administrative quality, a real improvement in processes and operations. It will increase stakeholders' confidence in the services provided. Implementing ISO requirements doesn't necessary give a qualified student, but at least you have the basis that give standardized programs and qualified processes and operations. The university gain more trust from students, employers and parents for the quality provided by the university. There is a misunderstanding that ISO is only implemented on the profit organization and

commercials, but it is also implemented on service organizations and educational institutions and any institution may have the ISO certification.

# Chapter Five

# Findings, Conclusions, and Recommendations

## 5.1 Introduction

After analyzing the data in the last chapter, this chapter highlights the major findings of the study and the conclusions based on the findings of the study. The researcher puts forward the proposed conceptual framework for the implementation of total quality management in higher education institutions, guidelines of quality management system for the application of ISO 9001 in education and suggests recommendations.

## 5.2 Findings

### 5.2.1 Qualitative findings

Public Palestinian Universities follow the standard and the policy of the Accreditation and the Quality Assurance Commission (AQAC) which is working in partnership with higher education institutions to safeguard academic standards and improve the quality of higher education by developing and implementing accreditation criteria and external assessment procedures that best serve the situation in Palestine and meet the requirements of international standards. The top management of Public Palestinian Universities is highly commitment for quality assurance. Policies are approved and supported by the executive council. The management is customer focused and they are talking about students centered learning and teaching approach in which teachers act as facilitators of the learning process in order to help students construct their knowledge and learn how to think for themselves. The admission process is followed according to AQAC regulation; the Tawjihi degree should be 65% and above to accept the student to study bachelor degree and it depends on the programs. For assessment process they access teachers at the end of each semester .The assessment for the students is done through exams and homework. AQAC carries out periodic review of degree programs to ensure that they continue to meet the requirements for accreditation. Such reviews normally take the form of visits by a group of members of AQAC, who prepare a report on their findings. The main purpose of program specifications is to describe the program aims and intended learning outcomes of each program. They also provide details of the teaching, learning and assessment methods. The program specifications are required to be updated continuously, it is the key documents in

all new programs submitted to AQAC for accreditation and they are used as a reference in annual monitoring and external examining. The student has a chance to evaluate the teachers and the material, also the teacher fill out a form to evaluate the content and the comments of this course for improvement, moreover they get feedback from their graduates but not in a regular bases, and they get some information from the market. They communicate with employers through meetings and workshops to get feedback about their graduates. One of the indicators for the universities to measure and monitor its processes to ensure its academic educational product meet customers' requirements is its graduates and their success in their jobs. Universities follow certain graduates through the alumni office and compare their success with meeting the customers' needs which is not enough. The office needs development so that it can generate the type of data that is needed to determine the market needs and requirements of the students. More aspects should be involved to see and measure if quality of students meets the customer's needs such faculty vision and university vision, following up with graduates, conducting assessments with graduates to define points of strength and weakness and many other aspects. The role of the decision makers is to decide where they are standing and how they want to continue in measuring the effectiveness of such system at all organizational levels. An overall system is needed that keeps the university connected to the market. The involvement of some business people in different bodies at the university may help in that regard. Insufficient funding is an on-going major concern and it is having a serious negative impact on the quality and relevance of higher education. No steps were taken to help the Ministry of higher education to build its capacities and strengthen its regulatory role in the higher education system. There is a higher education strategy without an action plan. Taking into account the rapid changes within the present globalised world economy, programs of study should be flexible and easy to update and modernize, which is not the case at present. Moreover, such continuous changes will require ongoing adaptation of the physical facilities and the educational resources the cost of which might be beyond the financial means of the Palestinians in the West Bank and the Gaza Strip. The benefits of implementing the requirement of quality management system according to ISO 9001:2008 are organizing internal organizational procedures and operation, improve customer satisfaction, improve work environment, motivate staff, effective internal communication, and improve public perception and image of the organization.

### 5.2.2 Quantitative findings

1. 58% of the respondents agreed that documentation management is practiced at different levels, while 12% of them disagreed, and 30% neither agreed nor disagreed. Universities must provide documents for quality manual, procedures, work instruction, quality policy and objectives. Better controlling the documents, have guide of quality, and involve teachers and employees in the management system that directs and control the university with regard to quality.

2. 61% of the respondents agreed that management responsibility exists in the university at different levels, while 12% of them disagreed, and 27% neither agreed nor disagreed. 63.4% agreed that management commitment exists at different levels, 62.1% agreed that customer focus exists at different levels, 61.9% agreed that responsibility and authority exists at different levels, and 56.2% agreed that internal communication exists at different levels. The results shows that internal communication item in management responsibility is the last one because teaching staff, non academic staff and students aren't quite involved in decision making , their views aren't completely sought on the operational aspects of the institution, and aren't fully aware of quality management system and control arrangements. Also teachers and staff aren't fully aware if the management reviews the quality management system (objectives, processes, achievements, audit, and results) and takes appropriate action when needed. And the vision, mission and objectives of the institution, aren't communicated in the best way to reach all stakeholders.

3. 52% of the respondents agreed that resource management exists at different levels in the university, while 20% of them disagreed, and 28% neither agreed nor disagreed. 56.4% agreed that training and development exists at different levels, 53.2% agreed that infrastructure exists at different levels, 51.3% agreed that work environment exists at different levels, 49.9% agreed that human resources exists at different levels, and 47.7% agreed that financial resources exists at different levels. This means that universities need to give more support to the resource management especially the financial resource, human resource, and infrastructure, seek funding sources and ensure the availability and good management of its financial resources. They need to give more support to the professional development of academic staff,

health services and emergency services on campus, add more physical resources and human resources (staff and learning recourses staff) to support teaching and learning, allocate more funds for research in the university's annual budget, increase teachers' remuneration and awards for performing well, give more awards to team rather than to individuals to enhance team spirit.

4. 70% of the respondents agreed that product realization is practiced at different levels in the university, while 7% of them disagreed, and 23% neither agreed nor disagreed. 75.8% agreed that program design exists at different levels, 72.1% agreed that assessment processes exists at different levels, 71.2% agreed that student admission processes exists at different levels, 63.4% agreed that teaching processes exists at different levels, and 58.4% agreed that program planning exists at different levels. Universities need to pay more attention to the program planning, conduct a market research and cost and benefit analysis for the new programs, each course contents and human resources need to be identified and addressed prior to the launching of the academic program. Universities need to pay attention to the needs of Palestinian society not just increase their income and unemployment rate.

5. 56% of the respondents agreed that measurement improvement and analysis exists at different levels in the university, while 14% of them disagreed, and 30% neither agreed nor disagreed. 58.3% agreed that monitoring and measurement of product exists at different levels, 56.1% agreed that customer satisfaction exists at different levels, and 52.9% agreed that monitoring and measurement of processes exists at different levels. The program evaluation is carried out at the completion, programs aren't compared with other institutions for quality, administrative support services aren't fully monitored for quality, there are no clear arrangements to monitor students' career development after graduation, and the institution processes and procedures aren't compared with the best institutions for benchmarking. Universities need to better monitor, follow up and measure the processes and procedures for quality at the university.

6. The results showed that there are no significant differences between the three universities, only in resource management; the differences in resource management

were in favor of Bethlehem and Hebron universities. Resource management applied in Bethlehem and Hebron universities more than Palestine Polytechnic University. Hebron University is higher than Palestine Polytechnic University in training and development while Bethlehem University is higher than Palestine Polytechnic University in Infrastructure. Hebron University is higher than Palestine Polytechnic University in responsibility and authority Annex (D).

7. The highest items of weaknesses and challenges are lack of adequate space, lack of incentives for the teachers for professional growth and performance, poor pay structure for the teachers and employees, centralized decision making, lack of physical resources (buildings, libraries, labs etc.), lack of well-equipped libraries and labs, quality is treated as a separate initiative, lack of planning for quality, employees resistance to change, lack of human resources (qualified teachers are hard to find and the staff and teachers compared to the university is small therefore many employees and teachers are overloaded), limited budget( financial governmental and private support).

### 5.2.3 Comparing quantitative findings with qualitative findings

The results of the interviews and the questionnaires distributed among participants were close except in some areas where the questionnaires show that statements of quality policy and quality objectives are documented and the universities has a documented quality procedure and work instructions , while in the interview we discovered that only Palestine Polytechnic University has a documented quality policy and objectives and that the universities have partial detailed procedures regarding activities affecting quality and work instruction, there is no clear procedure for controlling the documents, the partial procedures that were documented has a coding system. Furthermore Public Palestinian Universities don't have a quality manual and they don't have their own directory or guide of quality or procedure manual. Also they didn't identify the requirement of ISO 9001:2008 that can be applied to the University. The quality assurance unit in Polytechnic Palestinian University is responsible for issuing documents and these documents are approved by a committee before issuance. In Hebron University the

head of quality assurance unit approves the documented procedures before issuance. While in Bethlehem University the Vice president for academic affairs approve the documents and review them. The contradictory results between the questionnaire and the interview is due to the fact that teachers aren't fully involved in policy amendments, decisions and plans and are not fully aware about the management system that directs and control the university with regard to quality which is the quality management system at the university. Palestine Polytechnic University has a documented quality policy and objectives while Bethlehem University and Hebron University don't have. Hebron University and Palestine Polytechnic University has a quality assurance unit reporting to the president of the university while Bethlehem University doesn't have a quality assurance unit responsible for quality at the university. The three Universities suppose to have quality management system department in charge of quality at the university.

## 5.3 Conclusions

- Higher education institutions lack an integrated sample for the total quality management in higher education , lack of highly qualified professionals in the field of quality , lack of knowledge of self-assessment mechanisms, lack of knowledge of continuous improvement methods, and the difficulty of self-assessment and lack of incentives and financial rewards as well as estimates to support the efforts of quality, the lack of necessary training for workers in the field of quality, the lack of financial allocations sufficient to the quality, and suffer from a lack of independence, and multiple management and hierarchical levels in writing reports, control and decision-making, and the loss of administrative control over the performance of academic members and administrators, as well as the administrative structures. Organizational regulations and instructions adopted in higher education institutions are characterized by being rigid and slow in procedures and decision-making, and spread the phenomenon of administrative bureaucracy presented by centralization , and the uniqueness of the senior management of decision- making with the absence of participation by academic and administrative members as well as students in the process of decision-making , and universities resistance to change and development and lack of excellence and creativity.

- The problems that higher education institutions are facing low government funding for education as a result of the financial crises, and increasing competition among higher education institutions, and the growth of academic programs provided to the market; all these factors called for the need to provide a minimum standard of quality in higher education institutions.
- The council for higher education relationship with the institutions of higher education should be better organized, structured and institutionalized. Coordination and cooperation between the ministry of higher education and the universities, and among the universities themselves, need to be strengthened. Management information systems at institutional level and at central ministry level still need to be improved, harmonized and interfaced and the skills of the ministry of higher education staff to update and their use for decision-making have to be further developed. Institutions still do not appreciate the regulatory, planning and developmental role which the ministry of higher education can play and which is needed to link higher education to the needs of the labor market.

## 5.4 Recommendation

- With respect to the documentation requirements, the universities are advised to provide documents according to ISO 9001:2008, especially the quality management system documents, such as determining the quality policy and objectives, and a documented procedures for quality, providing a comprehensive guide to quality, in order to ensure the effectiveness of the process of planning, operation and control of the operations of the university in general. The process of monitoring the documentation is a very important process in accordance with ISO 9001:2008, where the university will monitor and document the quality management system continuously, and create a documented procedure for the adoption of the documents that match the pre-release, review and update the documents when necessary for the re-accreditation, and make sure to identify changes and cases of communicable versions of documents. In order to implement the requirement of quality management system effectively in accordance with the specification of ISO 9001:2008, the university need to create a directory or guide of quality, and maintain this guide so that it contains a number of foundations that are the core of the process of follow-up and application of the system, such as determining the

quality management system, including all the details of the relationship, and the establishment of fixed and documented procedures for quality management system that can be referenced when needed, as well as working on description of the work and determining the interrelations between all the operations of the quality management system.

- Quality is very important for the sustainability and competitive advantage of the university. More effort need to be spent on training and re-training employees about issues relevant to quality and quality systems. More investment is needed. It is a continuous process that should be supported by all at the university. And also visiting other universities abroad who are implementing quality management system according to ISO 9001:2008 standards to see their quality assurance department and how they work. The universities need to have quality management system department in charge of quality at the university which is reporting directly to the president of the university. This department focuses on quality planning, quality controlling, quality assurance, and quality improvement.
- ISO 9001 has been successfully implemented in different higher education institutions around the world; ISO 9001 is generic in nature and consists of eight sections out which five sections i.e. documentation management, management responsibility, resource management, product realization and measurement, analysis and improvement are concerned with the implementation of ISO 9001. ISO 9000 and TQM are compatible and implementation of ISO 9000 is first step toward TQM. In Palestine and especially in higher education institutions, the quality culture is not that much mature, so selecting ISO 9000 is an approach to total quality management. ISO 9000 is considered to be a good start towards total quality management. Another thing is that once things are controlled and the culture is mature enough, it is easier to switch over to adopting other well known Business Excellence Modes like European Foundation for Quality Management (EFQM) or Malcolm Baldrige National Quality Award (MBNQA). TQM is a stimulating factor for enhancing the quality of education and is adopted in higher education institutions to achieve and maintain excellence .The certification validity lasts for three years. However, it needs to keep in mind that the certification is not a sign of good quality product as it is a process oriented approach and only certifies that quality assurance processes are in place and the minimum requirements of ISO 9001 quality management system have been met.

- Higher education institutions need to adopt TQM and transform their institution's culture into a total quality culture that involves elements such as teamwork, employee participation, customer and market focus. There should be cross linkage and well communication between the various functional departments because most of departments operate individually. By applying the concept of total quality management, universities improve quality standards through the achievement of several benefits such as better teamwork among departments, bridging faculty–staff functions, increased quality from customer viewpoint and continuous development of everyone who is part of higher education institution, reducing the cost of performance; and improving the quality of the service provided. Devising policies at all levels and involving all employees. Quality should be improved at all other department in the university, even departments that provide services internal to the teaching departments. Quality is a chain that if one part of that chain is missing, the chain will be broken and will have no value.

## 5.5 Guidelines of quality management system for the application of ISO 9001 in education

The educational organization should define the scope of the quality management system and the areas included for its application. The educational organization should define and manage the processes for the quality management system. Processes related to the aim of the organization should be included during and following the provision of the educational service:

a) Education design;

b) Curriculum development;

c) Education delivery;

d) Assessment of learning.

The organizational structure, responsibilities, resources, and services should support improvement of the quality management system. Educational organizations should identify and ensure compliance with statutory, regulatory and accreditation requirements.

# 1. Documentation

### a. Quality manual

The quality manual should describe the scope of the educational organization's quality management system and interactions of its educational and support processes. It should include references to all applicable documented procedures and other criteria upon which the quality management system is based.

## b. Control of documents

The purpose of document control is to ensure that documents from the quality management system are continuously updated and are available for use in their current version only. The educational organization should establish documented procedures for:

a) Editing, reviewing and approving internal documents, including their identification and revision status;

b) Controlling external documents, mainly relevant regulations, that should be continuously updated;

c) Ensuring that documents are available to the organization's personnel;

d) Managing and controlling the learner's legal documents;

e) Ensuring the traceability of educational services; and

f) Verifying the fulfillment of requirements in the established educational stages.

## c. Control of records

A record provides information about the activities carried out in the organization, such as the results obtained in each stage of the learning process. The educational organization should establish retention times and record disposal – that are generally specified by legislation or regulation. Learner and instructional records within the guidelines of privacy protection are maintained by educational organizations.

## 2. Management responsibility in the educational organization

### a. Management commitment

Top management should identify the educational service which satisfies the needs and expectations of the society and learners. Top management should identify and show its commitment to continuous improvement of the educational service and the quality management system.

Some strategies that top management should consider include:

a) Communicating the quality management system plan throughout the educational organization;

b) Strategic planning considering the aim and future goals of the educational organization;

c) Encouraging the identification and use of best practices;

d) Establishing a quality policy ensuring all the members of the organization know the vision and mission and its relation to the members' work;

e) Establishing quality objectives to realize aims and intentions that are expressed in the quality policy to be realized in operating actions;

f) Ensuring availability of human and material resources, necessary for achieving the objectives; and

g) Measuring the organization performance to monitor the fulfillment of the established policies and objectives.

### b. Customer focus

The educational organization top management should identify and document the needs and expectations of learners and society, defined as curriculum requirements that include learning outcomes and specific performance indicators.

## c. Quality policy

The educational organization's top management should use the quality policy for guiding and leading the decision-making involved in the continuous improvement of the educational processes. The quality policy should be documented. The quality policy should be consistent with professional education standards, government rules and regulations, accreditation requirements and other policies of the educational organization. Top management should ensure that the quality policy is communicated and understood, implemented, and maintained by the organization. The highest authority in the organization signing the quality policy should ensure its continued suitability.

## d. Planning

Objectives should be measurable and relevant to the activities and processes of the quality management system, aligned with the organization's quality policy, and with the requirements of accreditation programs. Quality objectives should be integrated in the educational organizations' overall objectives, support service specifications, and include performance measures or indicators. An educational organization should align its educational service outcomes with its objectives and provide performance measures through indicators.

## e. Quality management system planning

Top management should be responsible for planning the quality management system. Planning should include the activities and resources needed to ensure the effectiveness of the quality management system for the achievement of the educational organization's objectives.

## f. Responsibility and authority

The educational organization's top management should clearly describe the organizational structure, with a focus on processes which support the development and deployment of the quality management system as well as the educational organization's objectives. This should include responsibility and authority delegation per functional area of the personnel involved in the quality management system processes.

## g. Management representative

The management representative should report to top management, and communicate with learners and other interested parties, on issues pertaining to the quality management system.

The appointed person(s) should develop appropriate skills in the areas of communication and inter personal relations. This person should be familiar with ISO 9000 standards, the principles of continuous improvement as well as with customer requirements, and should also be available for advice on the standards' implementation.

## h. Internal communication

Top management of the educational organization should establish and implement effective processes for communicating all issues related to the performance of the quality management system, such as the quality policy, quality requirements, objectives, and achievements. Providing such information should aid in the improvement of the quality management system's performance, directly involving the organization's personnel in these achievements. Top management should actively encourage communication feedback from personnel as a means of involving them. The educational organization top management should ensure that communication takes place among different organizational levels, as well across different areas and departments.

## i. Management review

The educational organization top management should conduct periodic reviews of the quality management system, according to the organization's needs, to assess the effectiveness of the quality management system in fulfilling objectives and satisfying requirements. Outputs from reviews should provide data for strategic planning to promote performance improvement of the quality management system. The complexity and criticality of an educational organization's services and

associated structure or support services are significant factors that should be considered in determining the frequency of a quality management system's reviews.

### j. Review input

A review of the quality management system should include the scheduled periodic review of the instructional and support systems, learner satisfaction, assessment criteria, evaluation results, documented improvements and design and development review when new curriculum is initiated.

### k. Review output

As a result of reviewing the quality management system, the educational organization top management should carry out actions to improve the performance of the quality management system and its processes. Outputs from the review of the quality management system should be recorded and communicated to all personnel of the educational organization.

## 3. Resource management in the educational organization

The educational organization should identify the resource needs for the provision of the educational service. The organization should also ensure resource availability for the effective functioning of the quality management system, as well as providing resources for enhancing customer satisfaction by meeting customer requirements. The organization should:

a) Establish information inputs for detecting the needs for resources;

b) Perform resource planning for the short, medium and long term;

c) Carry out follow-up of verification and assessment tasks; and

d) Provide the resources to communicate effectively to the teaching staff, the administrative staff, employees and learners, to maintain and improve the

effectiveness of the quality management system and to ensure that customer needs are met.

## a. Human resources

The educational organization should identify all type of resources needed for the provision of the educational service and ensure their availability for the effective performance of the quality management system.

## b. Competence, awareness, and training

Top management should provide employees with information on how their competence, awareness, and training are aligned with their responsibilities, authorities, and academic-administrative activities. The educational organization should carry out systematic actions for comparing competence needs to curriculum requirements.

## c. Infrastructure

The educational organization should identify the specific infrastructure, facilities, environment and equipment needed to support the teaching-learning processes, as well as the educational service.

The organization should define responsibilities and authorities for carrying out bidding, purchase, receipt, storage, safeguarding, installation, usage, and maintenance activities. Infrastructure includes buildings, working spaces: classrooms, laboratories, workshops, libraries, green areas, online components and related services, such as health facilities, physical security, transport, bookstore, and cafeterias.

## d. Work environment

The educational organization should provide evidence that the work environment is periodically assessed, as well as evidence of actions taken in this regard, when applicable. Outputs of this assessment should be included in the management review and should serve as part of the basis for continuous improvement.

## 4. Realization of the educational service

### a. Planning the realization

The educational organization should plan the different stages of the educational service, including design and development of teaching methods, design, developing, reviewing and updating study plans and curricula, learning assessment and follow-up, support services activities, resource allocation, evaluation criteria, and improvement procedures to achieve the desired results. The organization should plan the necessary resources for all processes. The learning processes that should be controlled may include needs assessment, instructional design, development and delivery, and outcome measurement. The control methods should be part of the management review to assure that instructional specifications are met and that the control methods are consistent with accepted quality practices. Changes in the control methods of these major processes should be documented and the instruction should be evaluated after any change has taken place. Monitoring should be carried out to verify that control methods are effective, and records should be kept.

### b. Learner-related processes

Educational organizations typically provide a service that is intangible, not storable, and consumed during delivery. Educational organizations should provide the opportunity for learners to study existing knowledge and to practice its application. When learning takes place in an educational organization’s classroom buildings, expectations may include the following:

a) Safe, clean facilities with someone in charge;

b) Two-way communication procedures between interested parties and the educational organization are responsive;

c) The organization’s personnel treat everyone with respect; and

d) Appropriate activities are conducted by qualified personnel.

## c. Determination of educational service-related requirements

The education requirements are typically expressed as behavior needed to meet academic, professional and society's expectations. The specific requirements of the learner may be contained in his/her study plans and curricula and the educational service provided by high studies educational organizations. The educational service must comply with the legal, regulatory and accreditation requirements related to education. Service-related requirements in an educational organization also include the requirements established by the organization to provide the educational service to the learner.

## d. Review of requirements related to learning

The educational organization should review the requirements related to learning to ensure that requirements are defined, requirements differing from those previously expressed are resolved, and it has the ability to meet the defined requirements. Records should be kept of this review of learning requirements.

## e. Learner communication

The educational organization should determine and implement effective arrangements for communicating with learners in relation to course information, learning plans, including curriculum, and learner feedback, including learner complaints.

## f. Design and development planning

Top management should consider the design and development of education for the benefits of learners. Design control activities should be appropriate to the purpose and duration of the education service. Procedures should ensure that appropriate instruction materials match instruction requirements. Equipment may be needed for some instructional purposes.

Needs assessments should include learner achievement and system effectiveness. These assessments should include potential or actual performance requirements to determine:

How instruction can help learners to become competent; A development report or checklist should be generated to document the procedures used and how they ensure that the instruction meets the design specifications. An instruction review process

should be used for all instructions. Functions responsible for participating in the review should be identified. Consideration should be given to the fact that design review is an advisory activity. It is intended primarily to provide synergistic verification of the work of the development team. Functions responsible for authorizing the progression of the design to the next phase should be identified. Criteria for acceptance should be specified .A needs analysis report should provide input to the instructional design process, describing the results of the needs assessment and stating the goals for design. A development process should be documented and used by developers. Design verification should be performed in one or several stages according to the design and development plan. This activity should be performed internally by any specialist who has not participated in the design and development review, or externally, to carry out an independent verification of the review. The design and development output stage should match the design and development input specifications. Records of the verification outputs and any necessary actions should be maintained. Records should be kept of this verification. Validation should be performed, generally, on the final design stages. Among others, piloting and certification are accepted validation methods. Records of the validation outputs and any necessary actions should be maintained. Records should be kept of the results of this validation.

a) How instruction can help learners to become competent؛
b) How new requirements can be met;
c) Which specific measures of instructional effectiveness are appropriate; and
d) What skills match curricular requirements.

A needs analysis report should provide input to the instructional design process, describing the results of the needs assessment and stating the goals for design. The educational organization should identify the inputs to the design of curricula and keep records of these inputs. Design and development outputs should, at least, include skills and knowledge to be acquired, instruction strategies, and assessment of performance, among others.

## g. Design and development review

## h. Control of design and development changes

In the education environment the rapid evolution of knowledge leads to periodic curricula and syllabus review, and resulting revision. These changes should be identified, documented, authorized and communicated. The revision of any subject should include the evaluation of its effect on the entire curriculum, and records should be maintained. Records should be kept of these design and development changes.

## i. Purchasing

Top management of the organization should ensure that effective purchasing processes are established. They should include the evaluation and control of purchased educational services so that they really satisfy the needs and the requirements of the educational organization. Purchasing processes should comply with legal and regulatory requirements. To make an efficient use of financial resources, purchasing processes should include the timely, effective and accurate identification of needs and purchase of educational services to specifications. Evaluation of the cost of purchased educational services should take into account educational services performance, price and delivery. Selection and evaluation of educational services suppliers should be based on criteria that ensure the compliance of the educational organization's requirements as well as with current legislation. Appraisal of purchased educational products or services should be made to be sure that they meet specified purchasing requirements. Records should be kept of supplier assessments and of actions taken in this regard.

## j. Provision of educational service

Top management together with education providers should identify overall topics and themes of the subject matter to be taught, and the accepted methods of instruction. They should also establish various accepted measures for determining compliance with the learning objectives. The educational organization should ensure the control of processes. If a contract agreement requires further support of learners after completion

of their program of studies, the organization should indicate how such support would be given and monitored. Knowledge, skills, and ability of new learners should be assessed to ensure that the instruction can be provided at an appropriate level. Advertising, course brochures, and other items produced by the educational organization should state clearly how prior education, training, and experience are related to the learning needs of learners. Records should be established and kept to identify the actual instruction provided.

## k. Identification and traceability

Where traceability is a requirement, the educational organization should control and record the unique identification of the educational service. Identification and traceability of relevant information should include: a) curricula, course and content unit codes; b) learner identification records; c) learner group schedules; d) textbooks/notes; e) laboratory equipment; and f) research contracts. The ongoing monitoring and performance status of learners/groups should be identified and recorded. The educational organization should consider preserving academic documents such as syllabus, curricula and printed or electronic materials (books, course notes, video tapes, computer programs).

## l. Control of monitoring and measuring devices

The educational organization should establish valid tests or learning assessment tools. Monitoring and measurement should be carried out during instruction to assure conformity with the study plans, curricula, and educational programs. These should include, learner performance profiles, assessments of personnel records, written course assessments, observations which note whether instructors are following the plan, and final examinations. Educational organizations should establish means for ensuring that tests are secure and their results are valid. When tests, assessment tools, or software are found to be invalid, the educational organization should record actions taken to correct the invalidity.

## 5. Measurement, analysis and improvement in the educational organization

Outcomes from monitoring and measurement may be used to identify areas for improving the quality management system and educational processes.

### a. Customer (learner) satisfaction

The educational organization should determine the learner's perception of the degree to which the educational service meets his or her expectations. Trend data of learner satisfaction should be supported by objective evidence. The educational organization should discuss with learners their satisfaction perceptions.

### b. Internal audit

The educational organization should conduct internal audits according to an audit program to assess the performance of the quality management system and educational processes. Audits should verify the use of established methods for educational processes. The educational organization should document the final report of the internal audit. Feedback from the audit results should be used to identify the need for corrective and preventive actions.

### c. Monitoring and measurement of processes

The educational organization should measure and monitor the performance and the effectiveness of the processes used to manage and deliver the educational service. Measurement of key and supporting educational processes should be carried out at appropriate stages during the realization of the processes. The educational organization should document methods used to measure the performance and the effectiveness of the processes.

### d. Monitoring and measurement of the educational service

The educational organization should establish and use methods for monitoring and measuring the educational service at planned intervals during its realization as well as the final outcomes, to verify that they meet established design requirements as well as statutory, regulatory and accreditation requirements as applicable. For all types of

education, specific evaluation tools, such as assessments, tests, examinations, or demonstrations should be used to measure the progress toward fulfilling the curriculum requirements. Performance appraisal of learning providers should also be carried out as part of the educational service. The results of this evaluation process should be recorded and used to demonstrate the degree to which the learning process achieved the planned objectives.

## e. Control of nonconforming products

The educational organization should establish a documented procedure to identify educational services as well as final outcomes, which are nonconforming to established design, statutory and regulatory requirements, or organizational objectives and curriculum. This should be carried out at appropriate stages of the realization of the educational service, to prevent their unintended use or delivery. Responsibilities and authorities should be clearly assigned to personnel for dealing with nonconforming educational services and for releasing the educational service after it is corrected and the nonconformity has been eliminated. Records should be kept of the nature of nonconformities and actions taken in this regard.

## f. Analysis of data

The educational organization should analyze collected data and information, making use of, but not limited to, accepted methods of analysis and solution of problems. Data should be used to support continuous improvement through improvement projects, as well as corrective and preventive actions. Applicable statistical techniques should be applied for analyzing every aspect of the quality management system. Statistical analysis such as performance indicators, drop-out rates, achievement records, learner satisfaction, and trend analysis may help assure learners that effective process control is a part of the quality management system. Measurement and evaluation should be continual and direct during the instruction. Effectiveness is not always known until the enhanced skills and knowledge is applied. The educational organization should analyze data from various sources to compare the performance of the quality management system and the educational processes to identify areas for improvement.

### g. Continuous improvement

The educational organization should continuously improve the effectiveness of its quality management system and its educational processes by encouraging personnel to identify and establish improvement projects within their scope. The improvement process should also include the actions taken to address complaints, suggestions, and comments of learners and interested parties.

### h. Corrective action

The educational organization should establish a documented procedure for implementing corrective actions that are identified from an analysis of the causes of nonconformities and of improvement opportunities. Corrective actions should be taken to eliminate nonconformities occurring during the performance of the quality management system and the educational service. Corrective actions should be recorded.

### i. Preventive action

The educational organization should establish a documented procedure for implementing preventive actions that result from analyzing potential nonconformities and improvement opportunities within the quality management system and the educational service. Preventive actions should be recorded and communicated to the appropriate areas of the organization. The learning resulting from the preventive action process should be reviewed and communicated throughout the organization.

## 5.6 Proposed TQM framework

The system approach is a processes oriented approach that includes monitoring and inspection of the processes and procedures to ensure their conformance to documented specifications and standards. The humanistic approach adopts a broader one and encompasses planning, management, leadership, customer focus, education and training, teamwork besides conformance to specification and standards. The conceptual framework is based on Edwards' Model for TQM implementation in higher education and ISO 9001 Quality Management System. David Edwards' Model provides the foundation (theoretical background) while ISO 9001 Quality management model is the operational aspect (practical background) of the proposed total quality management

framework for higher education institutions. The framework has three components a documented quality management system; statistical process control and Team work as shown in the figure (5.1). Interaction of these three components will assure continuous improvement represented by rotating arrows and will lead to total quality management environment in the higher education universities

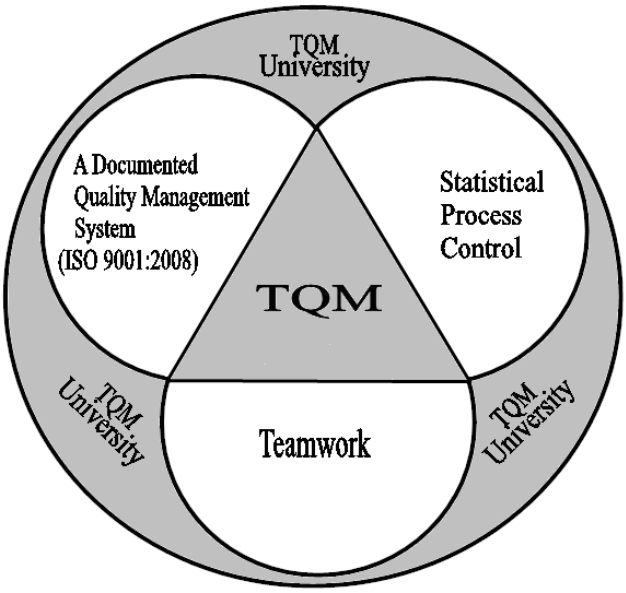



***Figure (5.1)*** **Components of proposed TQM framework (Khan, 2010)**

The major component of the TQM framework i.e. a documented quality management system consists of a quality and procedural manual with documented procedure for control of documents and records. The ISO 9001:2008 Quality Management System, as shown in the figure (5.2), was used as a basis for the conceptual framework and the empirical study.

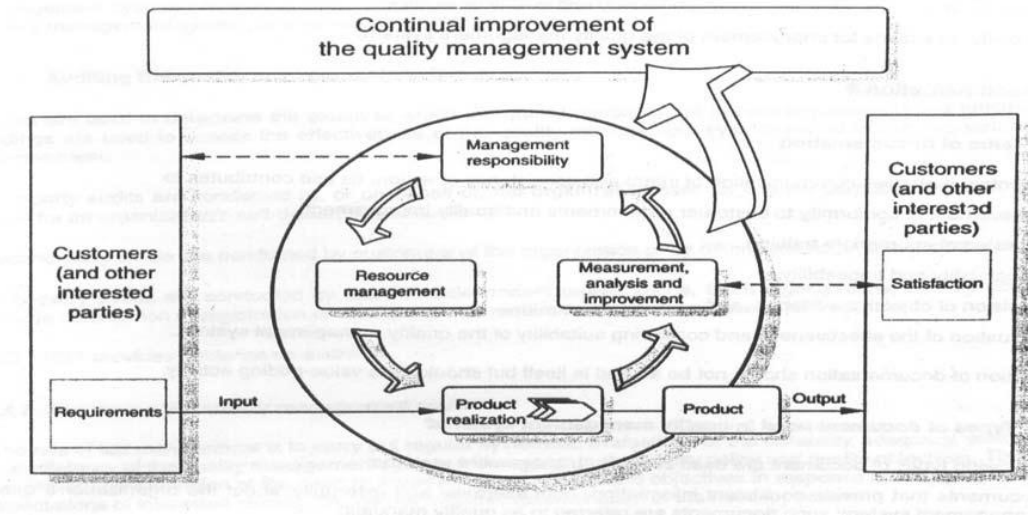
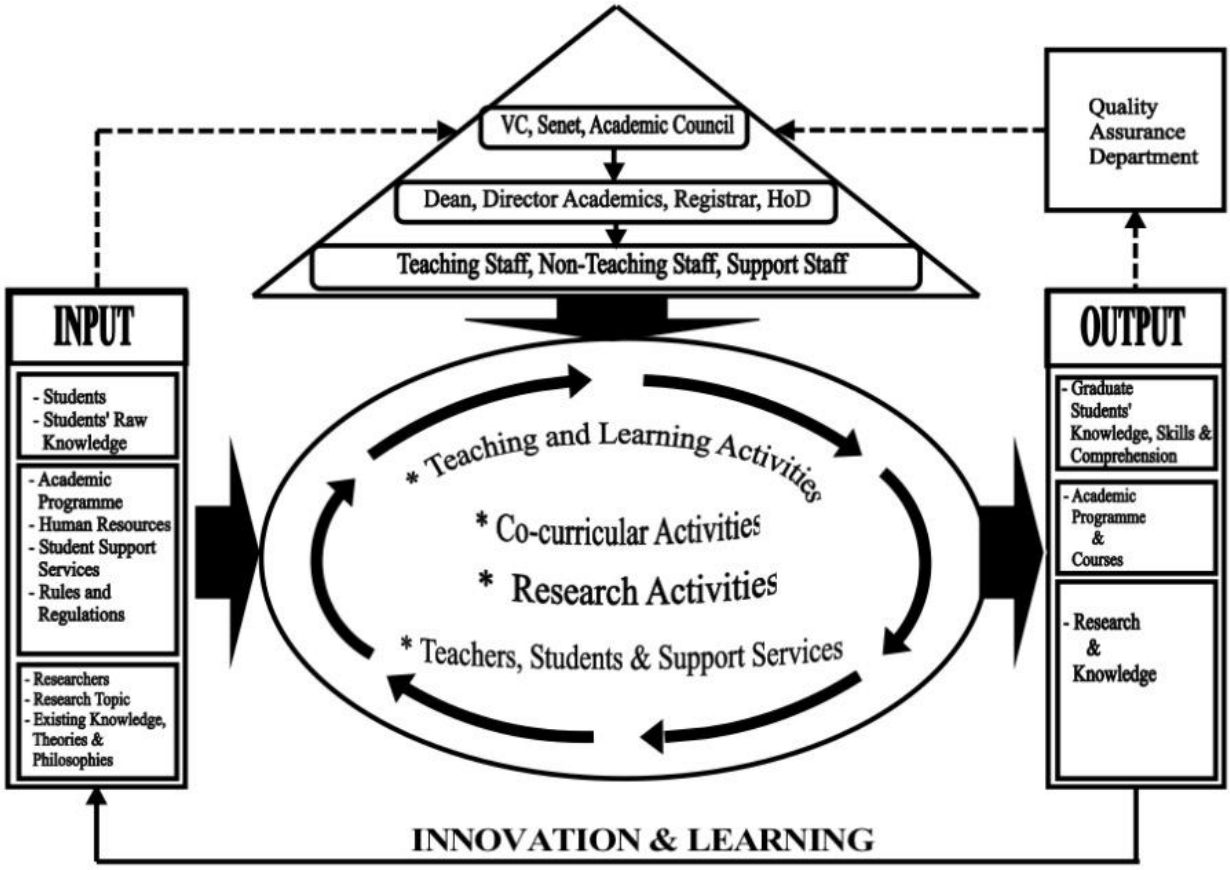



***Figure (5.2)*** **ISO 9001:2008 quality management system. (Khan, 2010)**

ISO 9001 Quality Management System is based on process approach (Khan, 2010) with a quality improvement cycle indicated by circular arrows. The inputs i.e. the customer and stakeholders' requirements on the left hand side of the diagram are converted into outputs which are on the right side in the diagram through the processes indicated by the middle cycle. The design and production of the product through the processes is called product realization. The quality of the product determines the level of customers' satisfaction and the quality of the product is ensured through monitoring and control of the processes. Controlling of processes determines the quality of the product. The processes are controlled by monitoring and measuring the process and the data gathered are analyzed with the help of various statistical tools and techniques. In this way the quality of the product is maintained and continuously improved. Teamwork is another component of the proposed conceptual framework. Working in team achieves better results than working individually. When people work in team their participation and involvement may be secured and a chain of customer and supplier is established. The teamwork may take the form of cross-sectional teams, quality circles and self-managed teams. Process-based ISO 9001: 2008 quality management model was adapted to develop a conceptual total quality management framework for the institutions of higher education as shown in the figure(5.3).




***Figure(5.3)*Proposed conceptual total quality management framework for higher education institutions.**

The conceptual framework has quality assurance through statistical process control and feedback loop, a system approach in which different processes when combined together convert the inputs into outputs and continuous improvement through Deming's quality improvement cycle of Plan-Do-Check-Act. The framework recognizes the importance of the processes for ensuring quality of the product to satisfy the customers. In order to achieve quality product, there should be a documented management system which give the organization confidence what it is going to do, then the organization do exactly what is documented by controlling the processes and continuously improve its performance through Plan-Do-Act-Check wheel and customer feedback and satisfy the customer needs continuously. In the figure (5.3) the two columns with an oval in the middle represents the process aspect of the framework. The column on the left hand side represents the inputs identified. The inputs include students and their knowledge, academic program, human resource, students support services, academic rules and regulations, researchers, research topic and existing knowledge, theories and philosophies. The oval in the middle represents transformational processes of the product realization including design, development and

improvement of the product. The core activities like academic program and courses development, teaching, learning and research activities and assessment and evaluation take place here. The rotating arrows show interaction and improvement of the processes through PDCA cycle and monitoring and measurement. Monitoring and Measurement include formative and summative evaluation and customers and stakeholders' feedback. The column on the right hand side in the framework represents the educational process products i.e. students with knowledge and skills gained, Academic program and courses and research and knowledge generated catering the respective customers. The Innovation and Learning arrow from the right hand to the left hand column represents the organizational learning loop and continuous improvement. The quality assurance department will gather the feedback and share the information at different management level represented by the triangle on the top side of the diagram. The triangle with Quality Assurance Department is the functional aspect of the framework. The triangle represents top, middle and low level management. The top management in the light of the feedback data from the inputs and outputs will set the future direction and improvement plan of the intuition by setting vision, mission, quality policy and quality objective which will be realized with help of the middle and low level management(Khan,2010).

The conceptual total quality management framework has two stages. The first stage, a quality assurance stage, marks the completion of the implementation ISO 9001: 2008. At this stage the institution may wish to go for certification. At the end of this stage and certification, the institution will have the pre-requisites for total quality management such as organizational structure, responsibilities, processes and resources to encompass TQM. The next stage is the Total Quality Management and continuous improvement journey with the help Plan-Do-Check-Act and customer's feedback (Khan,2010).

### 5.6.1 Implementation of the proposed TQM framework

The proposed TQM implementation model consists of Two Stages figure (5.4). The Stage one is further divided into four Phases. A proposed organization structure is also given in figure (5.5) to support the implementation of the proposed TQM framework. Details of implementation are given in the following lines.

## STAGE – I: (1-3 Yrs)

TQM implementation should start with both short and long terms objectives in view to be successfully implemented. The first priority should be implementation of TQM structure i.e. the implementation of ISO 9001Quality Management System which may be initiated as a project with the help of a consultant or external help. This stage is extended from the conception of TQM and first successful internal assessment of quality management system and may take 1-3 years time depending upon the level of quality culture maturity existing in the Higher Education Institutions and its structure. The stage has four phases i.e. Preparation, presentation, Practice and Preview.

## a. Preparation

This is the first phase when the top management shows interest in the implementation of TQM. In order to gain insight and knowledge of the TQM, its related concepts and its implementation requirements, the top management is required to review literature on TQM and its implementation methodologies. At this stage attending conferences and seminars on TQM and visiting TQM organizations may be helpful to create awareness, commitment and confidence. When fully convinced the top management decides to go for quality management system (ISO 9001) implementation, determines its scope, whether TQM is to be implemented at administration level or any particular discipline, and shows commitment by formulating policies and plans in accordance with the quality vision and allocates resources for the purpose. Quality

Board consisting of Vice-chancellor, Deans, and the head of Union may be established for the purpose.

## b. Presentation

At this point the top management presents its intent of TQM implementation institution wide. Vision, mission, quality policy and quality objectives are documented and the top management share plans and creates awareness by arranging seminars and workshops and how quality objectives would be achieved. The top management conducts GAP analysis to assess the gap between the present situation and management system requirements. Quality council formation takes place which establishes project team after having identified the projects. Middle managers like directors and head of the departments and program coordinators are trained and educated specifically and rest of the personnel in general in

processes control and other quality tools. The institution takes feedback from the stakeholders through students' satisfaction surveys, stand dialogue sessions, industry needs and satisfaction surveys and evaluation of teaching and learning effectiveness. In the light of their feedback the key processes and procedures are identified, existed ones are renewed and documented with the help of a consultant in case of lack of skills and expertise internally. However, it is advisable to involve own employees through capacity building in the identification and documentation of the quality management system as in this way the employees develop ownership and greater interest and motivation for successful implementation of the quality management system. Responsibilities and authorities of decision-making are assigned at relevant levels. Also a management representative (Quality Enhancement Department director) is appointed to oversee the management system implementation. Any milestone achieved is celebrated to create interest and motivation. Quality Council, Quality Enhancement Department and Quality assurance team at department level are established for the above purpose.

## c. Practice

This is an implementation and practice phase. What has been documented is implemented and record is maintained of what is being done. First trial of the implementation may not be as successful as expected but the minor problems should be fixed as soon as possible. However, in case of severe deficiencies, the processes and procedures are redesigned. Similarly on satisfactory results the institution should continue with great enthusiasm and energy for a couple of repeat to establish the processes. At satisfactory results the project teams are rewarded to recognize their efforts. At the end of this phase the management program is up and running.

## d. Preview

At satisfactory results in the last stage, self-assessment and internal audit is conducted of entire quality management system. In case of satisfactory results the institution may decide to go for certification of ISO 9000 Quality Management system. With this the project of quality management system is completed and the next stage starts.

## STAGE – II: (3-5 Yrs)

The Second Stage –II starts when ISO 9001 implementation project is complete and the management system is fully functional. This stage is a continuous process of updating and improving upon existed quality management system with Deming's cycle PDCA. At least once in a year internal self-assessment of the whole quality management system is arranged. At the start of this stage new assignments are assigned and job descriptions are revised with long term focus to run the program on permanent basis. At this stage the TQM program is taken into the organizational structure and becomes a permanent feature. Similarly Quality Circles are established to take on quality problems during the routine operations. The first stage is time bound but this is an unending stage as situational and cultural change takes place and the institution move towards the excellence day by day under the committed management and leadership approach characterized by customer focus and mutually beneficial relationship with feeding institutions and industry ; when employees, faculty and students, chained in customer-supplier relationship, work in teams and the academic programs are continuously improved in the light of the stakeholders' feedback and the data attained from the monitoring of the processes (Khan,2010).

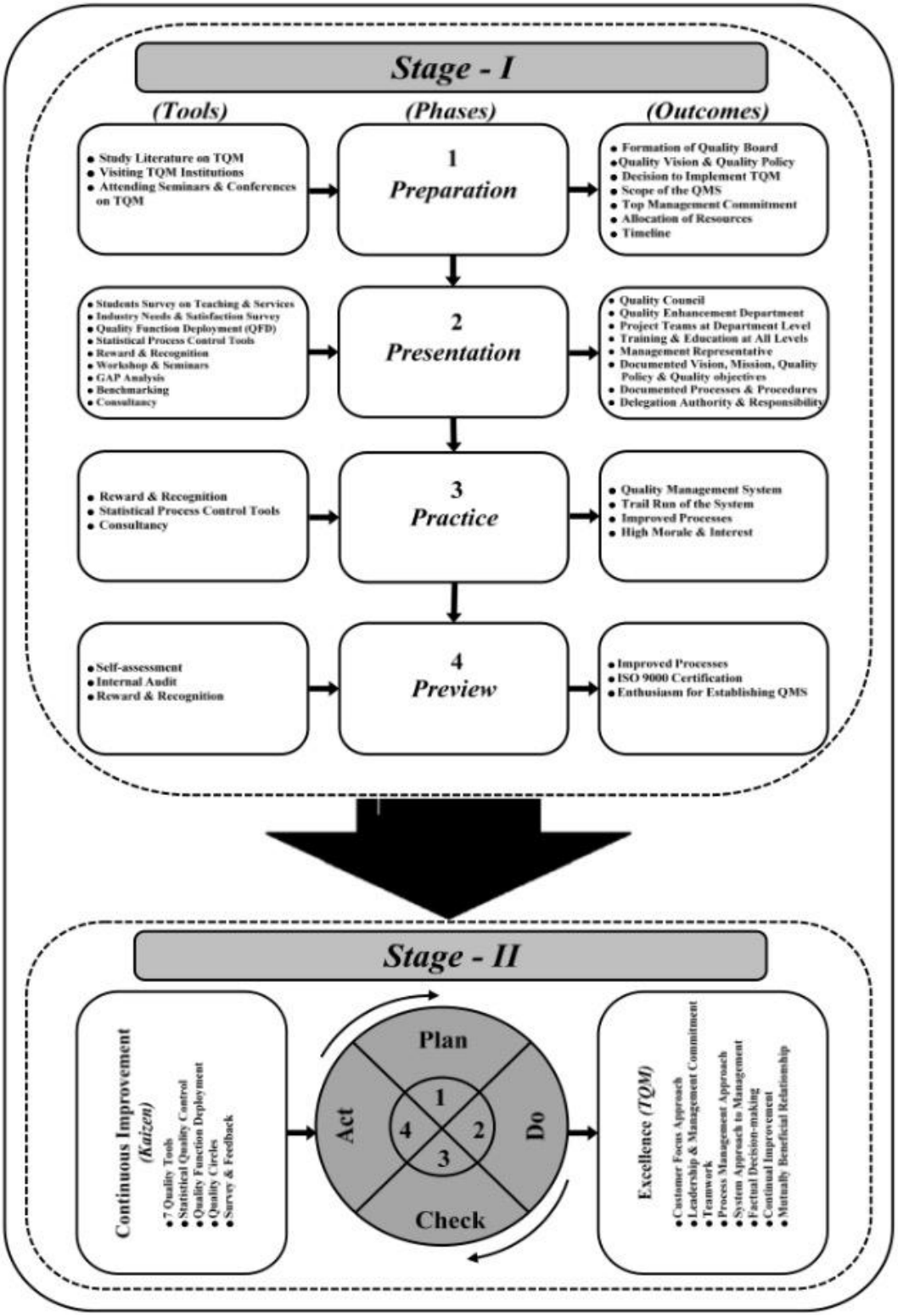



***Figure (5.4)*** **Proposed TQM implementation framework**

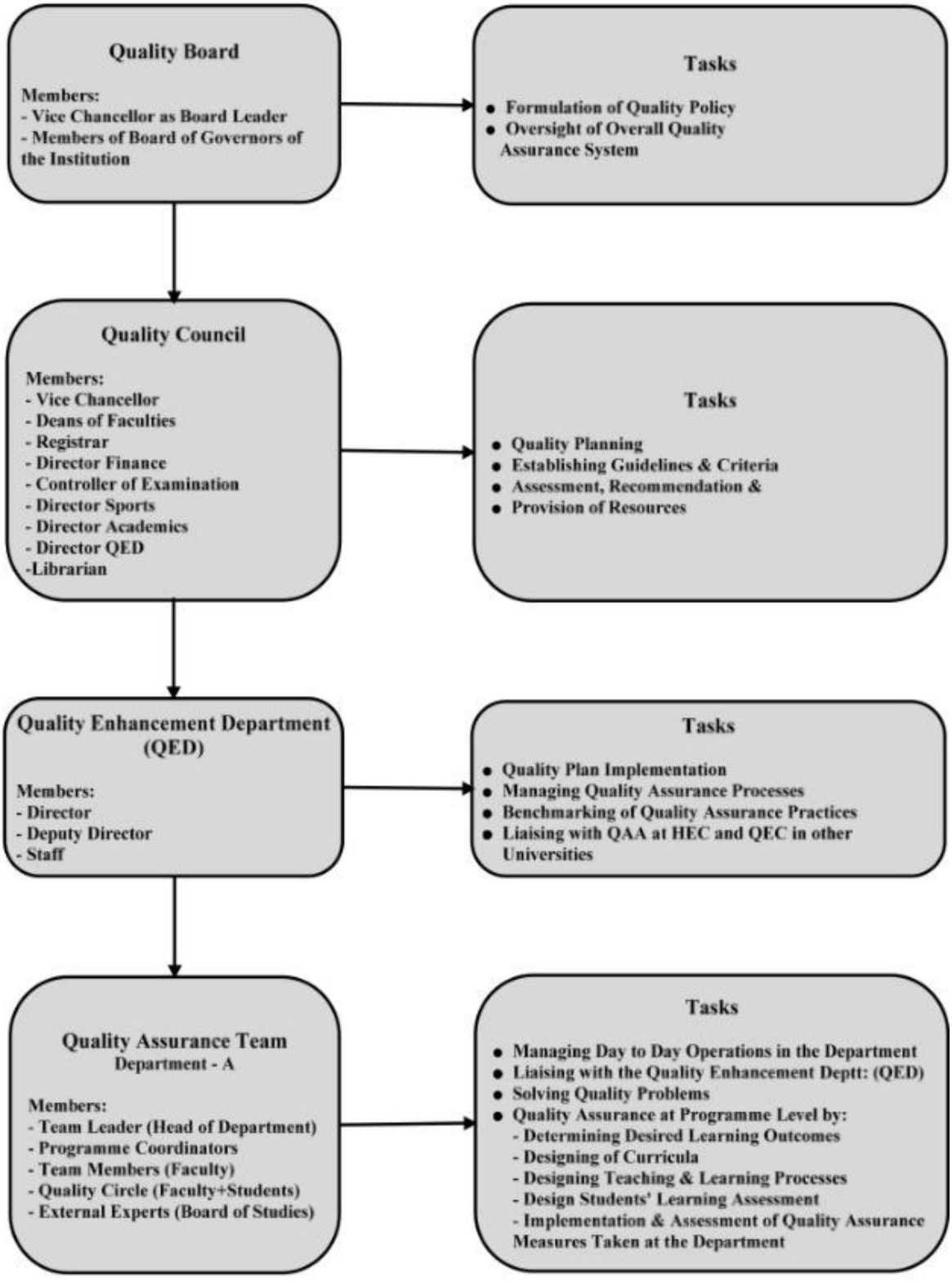



***Figure (5.5)*** **Proposed organization structure for proposed TQM implementation framework**

## 5.7 Recommendation for future research

1. Expand this study about assessing the possibility of implementing quality management system in higher education institutions according to ISO requirements not only in public universities but also in governmental and private universities and make a comparative study between the three sectors.

2. Expand this study about implementing quality management system in higher education institution according to ISO requirements to encompass students' and non academic employees' point of view as well.

3. Studying the impact of training on the implementation of the ISO 9000 and total quality management in higher education institutions.

4. Studying the impact of the leadership and management commitment on the implementation of total quality management in higher education institutions.

5. A comparative analysis of the total quality management indicators among Palestine's private and public universities institutions.

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# APPENDIX A

## International organization for standardization: ISO 9000, ISO 9001, ISO 9001:2000, and ISO 9001:2008

ISO is a nickname for the International Organization for Standardization.ISO is a non-governmental organization established in February 1947 in Geneva-Switzerland. The main objective behind establishing ISO was to facilitate the coordination and unification of thousands conflicting industrial standards of the various nations and to encourage the formation of international standards in business and industry. The standard was established by 2,700 technical committees, sub-committees and group works to complete the documentation and solve technical problems. International Organization for Standardization (ISO) who is responsible for reviewing international standards in every five years has released ISO 9000 family of standards (Muslim, 2012). ISO 9000 is a combination of "ISO" and "9000". "ISO" stands for International Organization Standardization and "9000" is the series allocated for Quality System Standards. So "ISO 9000" is a family of standards describing the requirements for establishing and maintaining a quality management system in an organization (Khan, 2010). ISO 9000 is a family standards and guidelines related to the quality management system. It sets the requirements of quality assurance and for management's involvement developed to help organizations effectively document the quality management system requirements to be implemented to maintain an effective quality management system. An organization that implements a quality management system aims to enhance customer satisfaction by fulfilling customer requirements, and achieves continual improvement of its performance and competitiveness, and continually improves its processes, and services. ISO 9000 series of standards requires organizations to establish processes for identifying customer requirements and communicating these requirements throughout their organization, as well as processes for tracking and analyzing customer satisfaction/dissatisfaction. These standards have been accepted worldwide as a baseline for organizational effectiveness and performance, and are better aligned with the quality award programs (paunescu&fok, 2005). ISO 9000 has been revised three times since its original release. The 2000 version, incorporated major changes in the standard as it was being developed and improved through the incorporation of features from total quality management. The 2008 version has few significant changes (Goetsch& Davis, 2010).In 1987 ISO created a series of Quality

Management System (QMS) standards including ISO 9001:1987, ISO 9002: 1987 and ISO 9003: 1987. They were applicable in different types of industries, based on the type of activity or process i.e. designing, production or service industry. In 1994 the standards were revised and named as ISO 9000:1994. The ISO 9000:1994 series consisted of ISO 9001:1994 - Quality Systems – Model for quality assurance applied to organizations involved in design and development of product/services, production of product/provision of services and delivery of product/services. ISO 9002:1994- Quality Systems – Model for quality assurance applied to organizations that do not design/develop their products or services but are only involved in production of products/provision of services and delivery of product/services ISO 9003:1994 - Quality Systems – Model for quality assurance applied to organizations that do not design/develop and produce their products or services but are only involve in final inspection and delivery of the finished product. In 2000, the ISO 9000 standards were revised for the second time. ISO9001:1994, ISO 9002:1994 and ISO 9003:1994 were merged into ISO 9001: 2000. New version of ISO 2000 series of the standards consists of ISO 9000:2000 - deals with fundamentals and vocabulary, ISO 9001:2000 - consists of requirements for quality management system, and ISO 9004:2000 - consists of Guidelines for Performance Improvement (Tricker,2002; Khan,2010).

The ISO 9000 family consists of 16 standards of which 4 are core standards and 12 are supporting standards. The four core standards are (Goetsch& Davis, 2010; Khan, 2010):

1. ISO 9000:2005 is a guidance document that describes the fundamentals and the vocabulary of the quality management system.
2. ISO 9001:2008 specifies the requirements for the Quality management system.
3. ISO 9004:2009 is a guidance document for continual improvement of organizational performance, systems, processes, and services as measured through the satisfaction of customers and other interested parties.
4. ISO19011 is a guideline for quality and environmental management systems. This standard is used as a supporting tool and provides guidance on auditing quality and environmental management systems.

ISO 9000 is about standardizing the approach organizations everywhere use to manage and improve the processes that result in their services and products. ISO 9000 is applicable to any organization, whether in private or the public sector, whether large or small (Goetsch& Davis, 2010).

The quality management system is composed of all organization's policies, procedures, plans, resources, processes, and designing of responsibility and authority, all aimed at achieving product or service quality levels consistent with customer satisfaction and the organization's objectives. When these policies, procedures, and plans are taken together, they define how the organization works and how quality is managed (Goetsch& Davis, 2010, p.335).

Quality Management system includes (Goetsch& Davis, 2010):

1. Quality policy. This statement describes how the organization approaches quality.
2. Quality manual. It includes an organization chart, illustrating management responsibility for operating the quality system. Quality procedures may be part of this manual.
3. Quality objectives. There are the goals related to quality and must be in harmony with the quality policy. Quality objectives are assigned to the organizational functions and levels and are followed by top management.
4. Quality procedures. These describe step by step what the organization does to meet the quality policy.
5. Forms and records. These provide proof of activities for the organization and for the auditors.

ISO 9000 Quality Management System is based on eight principles from total quality management and these in effect support the standard and define its purpose and direction. The eight quality management principles are very important for education institutions because of their appropriateness for quality education improvement (El-Morsy, Shafeek, Alshehri&Gutub, 2014; Goetsch& Davis, 2010; Kuncoro, 2013):

1. Customer Focus. Understand the customer's needs, meet the customer's requirements, and strive to exceed the customer's expectations. Successful Higher Education institutions are depending on their customers, therefore Higher Education should understand their current and future needs, meet their requirements, and measure their satisfaction degree. In education customer can be determined as students, teachers, administration, school board and parents. It is important to clearly identify the customers because different customers have different needs. When the customers are correctly identified, the organization can focus on fulfilling the customer needs that can result in satisfaction. Moreover, customer satisfaction is related to organization competitiveness. It is the top

management responsibility to be able to convert customer needs into ISO requirements once the customer needs are identified

2. Leadership. Establish unity of purpose and organizational direction and provide an environment that promotes employee involvement and achievement of objectives. Leaders of Higher Education institutions establish unity of purpose and direction. They should create and maintain the internal environment in which people can become fully involved in achieving the institution's objectives. It is important for a leader to clarify the vision, as well as to explain the methods to achieve the vision so that the followers are able to see the organization direction and be motivated to achieve it .A leader also has important role to communicate ISO values and systems to the followers so that they can adopt ISO as part of organization culture. In addition, strong leadership plays important roles in enhancing organizational performance.
3. Involvement of People. Take advantage of fully involved employees. Using all their abilities for the benefit of the organization. Involving people across all levels of the institution is one of the effective ways to achieve quality. The Higher Education institutions should take full advantage of the staff's knowledge and experience; clarify their job and responsibility requirements and make them realize that reaching the objectives is their own objectives. Involving the people in organization efforts create shared values, make fundamental contribution to quality. In addition, employee commitment is also related performance at both individual and organizational level.
4. Process Approach. Recognize that things accomplished are the results of processes and that processes along with related activities and resources must be managed. A desired result is achieved more efficiently when the activities and the related resources are managed as a process, rather than as individual tasks. Managing these activities provides greater efficiencies through a clear view of what is happening. In addition, process approach is expected to improve performance which is measured by cost, results, and opportunities.
5. System Approach to Management. Management should view all activities and processes as parts of an integrated system. Identifying, understanding and managing interrelated processes as a system contributes to the organization’s effectiveness and efficiency in achieving its objectives. System can have more than one functions or processes in an organization. It is important to recognize the

interaction of among the functions or processes because changing one of them can influence or affect the others. Therefore, system approach emphasizes on the interactions of processes.

6. Continual Improvement. Continual improvement should be a permanent objective applied to the organization and to its people, processes, systems and services. Continual improvement of the Higher Education institution's overall performance should be a permanent feature of the sector that really wishes to excel within labor marketplace. The education institution can improve the quality system by managing the auditing periodically and continuously for the daily tasks.
7. Factual Approach to Decision Making. Decisions must be based on the analysis of accurate, relevant, and reliable data and information. In Higher Education institution, effective decisions should be based on analysis of data and information that has been gathered via predetermined measures. Statistical process control and design of experiment are some of the quality tools to analyze and improve quality.
8. Mutually Beneficial Supplier Relationship. Both the organization and the supplier benefiting from the other's resources and knowledge results in value for all. Higher Education institution and its customers are interdependent partnership and a mutually beneficial relationship enhances the ability of both to create value. By having close relationship, these parties can have more focus on solving quality problem.

**Terms used in ISO 9000 family of standards, specifically for higher education (paunescu&fok, 2005; Sencila&Skipariene, 2007; Pawlowski, 2008):**

| Term (ISO 9000) | Explanation | |
|---|---|---|
| | **Education** | **Research** |
| Product | Student knowledge, skills, abilities, and competences<br>Courses, textbooks, books, other material, informational and technological support facilities | New knowledge, theories, experiments, methods<br>New software |
| Internal Customers | Undergraduate students, graduate students, doctoral students, postdoctoral scholars | Industry, research sponsors, other universities, community, governmental agencies, ministries |

| | | |
|---|---|---|
| External Customers | Industry, community, professional organizations, parents, alumni, governmental agencies | |
| Supplier | High schools, colleges, other universities, professional institutions | Researchers, industry sponsors, research institutes, literature sources (books, journals, conference proceedings, expertise reports) |
| Quality Policy | The overall quality intentions and direction of the school, including vision, mission and core values, as formally expressed by the president/ dean/ department chair | |
| Quality Objectives | The measurable goals relating to educational programs, school processes and products and related from the overall quality policy | The measurable goals relating to research projects and activities and related from the overall quality policy |
| Design Plan | Undergraduate programs, graduate programs, Ph.D. programs, postdoctoral programs | Research objectives |
| Process Plan | Course syllabus, individual student Curriculum | Research project plan |
| Raw material | Student knowledge, background and understanding of basic arts and sciences before entering the university<br>Existing material of courses and programs being offered | Existing practical, experimental and theoretical knowledge<br>Existing software |
| Realization Process | Learning, teaching, lecturing, training,<br>Consulting | Conducting research, managing project, administration activities |
| Nonconforming Product | Student failure to meet course or program requirements<br>Student failure to pass a course/ an exam<br>Course and program failure to achieve objectives<br>Textbook failure to comply with course syllabus or student individual curriculum | Research project failure to meet specified contract requirements<br>Research project failure to achieve objectives<br>Research project failure to demonstrate the projected socioeconomic impact<br>Research project failure to demonstrate its financial support |

***Implementation of ISO 9001 quality management system***

ISO 9001 is recognized as an international standard on best practices in internal quality management belonging to the ISO 9000 series. ISO9001 gives a series of general requirements that can be applied regardless of the organization's activity, size or ownership. The direct benefit that can be realized from the implementation of ISO 9001 is the combined alignment of the activities of internal processes that are focused towards the improvement of customer satisfaction which will result in many other reimbursements, whether internal or external. The main purpose of the ISO 9001 was to identify a set of requirements and practices that could be applied to organizations and institutions, regardless of the products or services they produce. The implementations and applications of these practices, and conformance to the requirements, should allow an organization to distribute products and services that consistently meet the quality requirements of customers. The ISO 9001 standard predicts and calls for process management in some items. It is therefore a normal practice to discover institutions with documents containing process map, flow diagrams and other process descriptions that show and guide individuals to perform their duties and tasks. The ISO 9001 addresses various aspects of quality management and includes some of ISO's best known standards. The standards offer directions, guidance and tools for institutions and organizations who desire to guarantee that their products and services consistently meet customer's requirements, and that quality is consistently enhanced and improved . To maintain ISO 9001 more efficiently and effectively, data on process and system performance and feedback from customers must be investigated and discussed in the management review meeting in order to notice possible continual improvement chances and corrective and preventive actions (El-Morsy, Shafeek, Alshehri & Gutub, 2014; Elgobi,2014).

First step in the implementation of ISO 9001 quality management system is to conduct GAP analysis to find the gap between the requirements of quality management system and the requirements which the organization is already meeting and accordingly allocate resources. A well organized institution with committed leadership, strong processes, qualified and motivated personnel can easily implement ISO 9001. ISO 9001 is process based approach requiring documenting processes and their interaction in quality manual and procedure manual but it does not mean that the organization is supposed to document each and every process. Minimum requirements are to document the six key processes regarding (1) Control of Documents (2) Control of Records (3) Internal Audit (4) Control

of nonconforming Product (5) Corrective Action and (6) Preventive Action. However, other processes which affect the quality of the product may also be documented (Tricker, 2002; Khan, 2010). ISO 9001 is a documented quality management system and there are five levels of minimum documentation requirements (Khan, 2010):

Level I: Quality policy and quality objectives

Level II: Quality manual

Level III: Quality system procedures

Level IV: Documents needed by the organization to ensure the effective planning, operation and control of its processes process procedures and plans

Level V: Records/Reports/Logs

Any organization fulfilling the minimum requirements can register for certification. The implementation of ISO 9001 quality management is based on documenting what the organization does, doing what it document, monitoring and measuring what it does and taking corrective and preventive actions. For registration and certification the organization is required to document all the key procedures in its quality manual as per requirements of ISO 9001 quality management standards. Once the management system is implemented and established, a certified body carries out an independent assessment and audit of the management system to check that the requirements of ISO 9001 are met and the documented procedures are working in practice. On successful audit, the organization is certified for ISO 9001 quality management system which is valid for three year and at the expiry of the duration the organization is required to apply for recertification. ISO 9001 certificate is concerned about management and processes and do not contain requirements for any specific product. They certify the processes and the system of an organization and not the product or the service itself (Khan, 2010).

An ISO 9001 standard consists of the following eight sections. The first three provide general information about the standard while the last five deals with how to implement it (ISO, 2008; Khan, 2010):

1. Scope

2. Normative Reference

3. Terms and Definitions

4. Quality Management System

5. Management Responsibility

6. Resource Management

7. Product Realization

8. Measurement, Analysis and Improvement

***ISO 9001:2000***

In 2000 new ISO 9000 series quality management standards were introduced for application. These standards were based on a different principle than standards of 1994. In the title of the standard there is no term of quality assurance and instead quality management is stressed. The concept of quality management in the standard has a wider meaning than the concept of quality assurance. Quality assurance is included into the concept of quality management as its component. Quality management according to the ISO 9001:2000 standard covers these four parts: 1. Quality planning- a part of quality management, is meant to determine quality aims and define the needed activity processes and related recourses. 2. Quality control - a part of quality management focused on fulfilling quality requirements. 3. Quality assurance - a part of quality management focused on providing confidence that the quality requirements will be fulfilled; in this part activity efficiency is assessed. 4. Quality improvement part of quality management focused on increasing the ability to fulfill quality requirements; activity efficiency and effectiveness are assessed (Sencila&Skipariene, 2007).

The ISO 9001:2000 standard specifies global minimum requirements for an effective quality management system. Any university should consider them if wants to demonstrate

its ability to consistently provide educational services that meet student and requirements and aim to enhance student satisfaction (paunescu& fok, 2005). There are five major requirements in the standard that should be considered for effectively implementation of an ISO 9001:2000 model of quality management system into an education organization. The first requirement is the basics of quality management system which includes all activities from quality management system documentation and control of documents and records to determining the sequence and interaction of processes to implementing actions in order to achieve planned results. The second requirement is management responsibility which requires the management's commitment to quality management system and clarifies that management must be dedicated to the university's processes, products and services. The third requirement is resource management which includes human resources infrastructure planning and work environment providing the criteria needed to perform a job competently in a safe environment. Product realization is the fourth requirement specifies the steps in product development. These steps include everything from the initial design phase to the final delivery phase. In a university this requirement addresses: curriculum design and development, programs development and delivery, and control of monitoring and measuring devices. The fifth requirement is measuring, analyzing and improving quality management system by having universities perform periodical internal audits, monitor student satisfaction, control nonconforming product, analyze and monitor data and take corrective and preventive actions. To gain certification, universities have to demonstrate how each section applies to their organization through the use of quality manuals, procedures, quality plans, instructions, quality records, and other support documentation (paunescu & fok, 2005; El Abbadi, Bouayad &Lamrini, 2014; Sencila & Skipariene, 2007).

***ISO 9001:2008***

International Organization of Standardization defines ISO 9001:2008 as the standard that provides a set of standardized requirements for quality management system. It can be used by any institution, company or organization, large or small, regardless of its field of activity. In reality, ISO 9001:2008 is implemented by over one million firms, institutions and organizations in over 170 countries .Using ISO 9001:2008 assists to guarantee that customers obtain consistent and excellent quality products and services (Elgobbi, 2014).Determining and managing various linked activities in the teaching – learning process, ensure effective and efficient functioning of educational organization. These

linked activities are to be managed through promoting and adopting of a process approach to develop, implement and improve the effectiveness of a quality management system. ISO 9001: 2008 includes guidelines for the application of ISO 9001: 2000 in education; it acts as a helping tool to fulfill those requirements. The standard of ISO 9001:2008 is based on eight quality management principles helping improvement of performance of any academic institution these are: customer focus, leadership, involvement of teaching and non-teaching staff, process approach, system approach to management such as Vice chancellor of university, continual improvement, factual approach to decision making and mutually beneficial supplier relationships. These Quality management principles are translated into requirements (Kuncoro, 2013; Nath De, 2010).

***Structure of ISO 9001:2008***

ISO 9001:2008 consists of the following eight sections

**Section 1 – Scope**

According to the scope of the standards the organization is required to demonstrate its ability to consistently provide product that meets customer requirements and fulfill all applicable regulatory requirements and aims to enhance customer satisfaction through the effective application of the system. All requirements of this international standard are generic and are intended to be applicable to all types and size of organizations, an organization can claim that any requirement cannot be applicable due to the nature of an organization; this can be considered as exclusion. According to the standard this is allowed only when such exclusion does not affect the organization's ability or responsibility to provide product that meets customer and applicable regulatory requirements. The organization is also required to mention the exclusion in the scope of its quality management system and also give reason for the exclusion (ISO, 2008).

**Section 2 - Normative reference**

ISO 9000:2005- Quality management systems-fundamentals and vocabulary necessary document for the application of ISO 9001:2008.

**Section 3 - Terms and definitions**

The terms and definitions given in ISO 9000 apply. Throughout the text whenever the term "product" occurs, it can also mean "service"

**Section 4 - Quality management system**

The section describes the general and the documentation requirements of the quality management system. According to the **general requirements** the educational organization is required to establish, document, implement, maintain and continually improve the effectiveness of the quality management system. The organization shall determine the processes needed for the quality management system and their application throughout the organization, determine the sequence and interaction of these processes, determine criteria and methods needed to ensure that both the operation and control of these processes are effective, ensure the availability of resources and information necessary to support the operation and monitoring of these processes and implement actions necessary to achieve planned results and continual improvement of these processes. Processes needed for quality management system include processes for management activities, provision of resources, service realization, measurement, analysis and improvement. The **documentation requirements** of the standards mean that there should be a documented quality policy and quality objectives. A quality manual that document the whole quality management system and its procedures. The organization shall establish and maintain a quality manual that includes the scope of the quality management system, documented procedures established for the quality management systems and description of the interaction between the processes of the quality management system. The discipline of writing the quality manual, identifying procedures and writing work instructions would provide a much better understanding of the University's internal processes, and the links with the internal and external customer or stakeholder. It also requires that there should be documented procedures for the control of the document and control of records. A documented procedure shall be established to define the controls needed; to approve documents for adequacy prior to issue, to review and update as necessary and re-approve documents, to ensure that changes and the current revision status of documents are identified, to ensure that relevant versions of applicable documents are available at points of use and to prevent the unintended use of old documents and to apply suitable identification to them if they are retained for any purposes. Organization shall establish a

documented procedure to define controls needed for the identification, storage, retrieval, retention and arrangement of records. Records shall remain readable, readily identifiable and retrievable (ISO, 2008;binjamaludin, 2009; Langley, 2014;Sencila&Skipariene, 2007).

**Section 5 - Management responsibility**

The standard requires that the top management shall demonstrate its **commitment** to the development of the quality management system and continually improve its effectiveness by ensuring that the **customers' requirements are met**, top management shall ensure that **quality policy** is appropriate to the purpose of the organization, includes commitment to comply with requirements, provide a framework for establishing and reviewing quality objectives that are measurable and consistent with quality policy, is communicated and understood within the organization and reviewed for continuing suitability. Top management shall ensure that **planning of quality management** is carried out and the integrity of the quality management system is maintained when changes to quality management system are planned and implemented. They also ensure that **responsibilities and authorities** are defined and communicated within the organization .Top management appoint **management representative** who will ensure that processes needed for the quality management system are established, implemented and maintained, will report to top management on the performance of the quality management system and any need for improvement and ensure the promotion of awareness of customer requirements throughout the organization. Top management establishes effective **internal communication** processes within the organization and that communication takes place regarding the effectiveness of the quality management system. Moreover, the top management is required to ensure sufficient supply of resources and conduct **management review** as planned. The input to management review shall include information on result of audits, customer feedback, process performance and service conformity, status of preventive and corrective actions follow up actions from previous management reviews, recommendation for improvement. The output from the management review shall include decisions and actions related to improvement of the effectiveness of the quality management system and its processes, improvement of product related to customer requirements and resource needs. In short the educational organization's top management must be dedicated to its processes, products and services (ISO, 2008; binjamaludin, 2009)

**Section 6 - Resource management**

This contains requirements regarding **providing resources** for the implementation, maintenance and continual improvement of the quality management system and to enhance the customer satisfaction by meeting their requirements. The educational organization is required to provide **competent and trained personnel**, evaluate the effectiveness of the actions taken, ensure that its personnel are aware of the relevance and importance of their activities, and maintain appropriate records of education, training, skills and experience. The organization shall determine, provide and maintain the **infrastructure**; building, workspace and related utilities, equipment (both hardware and software) and supporting services (such as transport, communication, or information systems). Also it shall provide **work environment** that is appropriate for achieving the desired service such as noise, temperature, lighting and weather. In short this section provides the criteria required to work competently and in a safe environment to achieve the educational organization's objectives (ISO, 2008)

**Section 7 - Product realization**

The standard requires the educational organization to **plan** the processes needed for the production of product according to quality objectives and requirements for the product establish processes, documents and provide resources specific to the product, and keep records needed to provide evidence that the realization processes and resulting products meet requirements. The educational organization shall **determine the requirements** of the customer, other requirements not stated by the customer but necessary for the products, regulatory and statutory requirements applicable to the product, and any additional requirements considered necessary for the product. The importance of customer requirements is that these serve as input for meeting customer satisfaction and should be incorporated into the best practices in product realization or service delivery. The educational organization shall **review these requirements** and after confirming that the educational organization has the ability to produce a product according to the requirements, the organization shall **communicate** the information to the customer. After confirming with customer the organization shall plan, review, verify and validate the **design and development** of the product. The educational organization shall record the changes made in the process. The organization shall **purchase** the raw material and other stuff for the product according to the purchase requirements after inspection and

verification. The organization shall carry out the **production of the product and services** according to the specified requirements and production process shall be controlled, controlled conditions shall include; information that describes the characteristics of the product, the work instructions and the use of suitable equipment. The organization shall validate any processes for production and service provision. Validation shall demonstrate the ability of these processes to achieve planned results. The organization shall establish arrangements for these processes including; criteria for review and approval of the processes, qualification of personnel, use of specific methods and procedures and requirements for records. The product shall be traceable and identifiable throughout the production process. The production process shall be **monitored and measured** and the measuring equipment shall be verified. The whole organization, the people, the process and the product are interactively assembled and coordinated towards product realization or service delivery. In higher education setting this requirement addresses curriculum design and development, academic program development and delivery and control of monitoring and measuring equipment and computer software. The external customers encompass the professional and statutory bodies and the industry that will employ the graduates. What they need and what they want in terms of the graduates is very important. The educational organizations expect their graduates to compete in a market where they are in demand. In order to ensure this, they have to rely heavily on what the external market demand. Feedback, market analyses and needs analyses are the tools used to objectively identify the requirements of the external customers. The requirements specified by the respective and varied external customers serve as essential input to best practices and must be translated into the curriculum design. The curriculum must reflect the knowledge and skills that the external customers want. The curriculum design must be up-dated and modified in line with the demands and the development of the industries. The up-dating and up-grading must also be reflected in the research and development process. The credibility and the marketability of the graduates will depend very heavily on this process. In short this section covers all the steps in the product development from the initial design phase to the final delivery phase (ISO, 2008; binjamaludin, 2009)

**Section 8 - Measurement, analysis and improvement**

The standard requires the educational organization to plan and implement the monitoring, measurement, analysis and improvement processes to ensure the conformity of the product to the requirements and for the continual improvement of the Quality Management System.

The educational organization shall apply suitable method to **monitor and measure the customer satisfaction** such as customer satisfaction surveys, customer data on delivered service quality and user opinion survey. The organization shall conduct **internal audits** at planned periods to determine whether the quality management system conforms to the planned arrangements, to requirements of this international standard and to the quality management requirements established by the organization and effectively implemented and maintained. An audit program shall be planned taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods shall be defined. The selection of auditors and conduct of audits shall ensure objectivity and integrity of the audit process. Auditors shall not audit their own work. A documented procedure shall be established to define the responsibility and requirements for planning and conducting audits, establishing records and reporting results. Records of the audits and their results shall be maintained. The management responsible for the area being audited shall ensure that any necessary corrections and corrective actions are taken without delay to eliminate detected nonconformities and their causes. The organization shall apply suitable methods for **monitoring and measurement of the quality management system processes**. These methods shall demonstrate the ability of the processes to achieve planned results. When planned results aren't achieved, corrective action shall be taken as appropriate. The organization shall **monitor and measure the service and characteristics of the product** to verify that service and product requirements have been met. **The nonconforming product and services shall be controlled and identified** and suitable measures shall be taken to prevent its accidental use and delivery. When non conforming product is corrected it shall be subject to re-verification to demonstrate conformity to the requirements. The organization shall collect and **analyze data** to evaluate where continual improvement of the effectiveness of quality management system can be made. The analysis of data shall provide information related to customer satisfaction, conformity of product and service requirements, characteristics and ways of processes and products, including opportunities for preventive action, and suppliers. The organization shall **improve the effectiveness of the quality management system** through the use of quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. The organization shall take action to eliminate the causes of nonconformities in order to prevent repetition. Corrective actions shall be appropriate to the effects of the nonconformities happened. A documented procedure shall be established to define

requirements for reviewing nonconformities, determining the causes, evaluating the need for action to ensure that nonconformities don't repeat, implement action needed, records of the results of action taken, reviewing the effectiveness of corrective actions. The organization shall determine action to eliminate the causes of potential nonconformities in order to prevent their occurrence. A documented procedure shall be established to define requirements for determining potential nonconformities and their causes, evaluating the need for action to prevent occurrence of nonconformities, determining and implementing action needed, record results of action taken and reviewing the effectiveness of the preventive action taken (ISO, 2008; binjamaludin,2009). The first three sections provide general information about the standard, and the last five sections form the main body of the standards. These sections focus on how to implement it. To achieve certification, the educational organization has to demonstrate how each of these sections applies to it through the use of quality manuals, procedures, quality plans, instructions, quality records and other support document (Khan, 2010).

**Differences between ISO 9001:2000 & ISO 9001:2008.**

ISO9001: 2000 was revised in 2008 as ISO 9001:2008. ISO 9001:2008 does not introduce additional requirements nor does it change the intent of the ISO 9001:2000 standard. There are only changes in the vocabulary to introduce clarifications to the existing requirements of ISO 9001:2000 and to improve compatibility with ISO 14001:2004. The fourth edition ISO 9001:2008 cancels and replaces the third edition ISO 9001:2000 (ISO, 2008; Khan, 2010).

**Comparison of & Relationship between ISO 9000 & Total Quality Management**

**ISO 9000 and TQM are not interchangeable**. ISO 9000 is only concerned with quality management systems for design, development, purchasing, production, installation, and servicing of products and services. On the other hand, total quality management involves every function and level of the organization from top to bottom (Goetsch& Davis, 2010; Khan,2010).

**ISO 9000 is compatible with, and can be viewed as a subset of TQM.** ISO 9000 is part of a total quality management environment. TQM environment with its top management commitment, documented processes and procedures, continuous improvement, and obsession with quality, easily supports the requirement of ISO 9000. ISO 9000 is a

foundation and subset of TQM but there is still a long way after ISO 9000 to TQM organization. In other word to maintain ISO 9001 certification, the institutions need continuous improvement (Goetsch& Davis, 2010; Khan, 2010).

**ISO 9000 is frequently implemented in a Non-TQM Environment.** The majority of ISO 9001 registered organizations have not fully adopted total quality. TQM facilitate an ISO 9000 implementation and it is not a prerequisite for ISO 9000(Goetsch& Davis, 2010).

**ISO 9000 Can Improve Operations in a Traditional Environment.** Traditional organizational environment is operating according to the old way of doing things rather than according to the principle of TQM. If a traditional organization implements ISO 9000 it will do better (Goetsch& Davis, 2010).

**ISO 9000 May be no longer needed in a Mature TQM Environment.** In an organization that has achieved a high level of maturity in its total quality, all ISO 9000 criteria may already be in place. But such organization may find it necessary to register in order to let potential customers know that their product or services satisfy the international standard (Goetsch& Davis, 2010).

**ISO 9000 and TQM are not in Competition.** Organization can adapt TQM or ISO 9000 or both. Both have valuable and similar aims. TQM and ISO 9000 support each other and are complementary. They could be both used in a single management system (Goetsch& Davis, 2010; Khan, 2010).

**ISO 9000 and Total quality Management working together**.TQM requires everything required by ISO 9000 registration. However, even a mature TQM organization that does everything it would do under ISO 9000 and more may not have the worldwide recognition afforded by ISO 9000 registration. There is no corresponding international certification for TQM. For this reason, even the mature TQM organization may find it necessary to seek ISO 9000 registration as a way to satisfy the demands of its customers. ISO 9000 could be integrated with TQM for the development of a total quality system where quality improvement can be achieved by examining the organization's processes in terms of process definition, process improvement and process design. A traditional organization that is registered under ISO 9001 may find that it needs the larger TQM implementation to stay competitive. ISO 9001:2008 registration can be a good first step in TQM (Goetsch& Davis, 2010; Khan,2010; binJamaludin, 2009).

## ISO in Higher Education

There are some differences in applying ISO 9000 quality management system in the manufacturing sectors and in higher education institutions. In the higher education institutions, education management is divided into two divisions of operation academic and administration (bin jamaludin, 2009).The number of the institutions with ISO 9001 quality management system is going up day by day and this trend is quick in UK, Germany, the Netherlands and France (Khan, 2010).

### *Integrating ISO 9001:2000 into Higher Education*

To show that a quality management system exists in a university, it has to set up its overall quality policy and objectives, design university structure and communication system, identify and document its processes, review job specifications, analyze data and make decisions based on data, measure quality performances, and maintain quality records. Also, a university has to show the top management commitment to permanent improvement of its quality management system through: conducting reviews of the university's performance; communicating the most significant quality goals throughout entire organization; and monitoring implementation of corrective and preventive actions. Furthermore, the university has to prove that resources, including infrastructure and work environment, are adequate to achieve quality objectives of enhancing customer satisfaction. This refers to providing classrooms, laboratories, study rooms and libraries with sufficient material, books, internet connections; ensuring competence of faculty and staff in performing their jobs; and providing training and professional development for all university's employees. In addition, a university must show its products/ services or processes meet student needs and expectations and that it continuously measure, monitor, analyze and improve its results and performance (paunescu&fok, 2005).

A university that decides to implement and develop a quality management system based on the ISO 9001:2008 standard requirements should follow the following preliminary steps

(paunescu&fok, 2005):

1. Identify all processes that have an impact on the quality of its products/ services, including teaching, learning, research, programs and courses being offered.

2. Set the interactions between these processes and design the communication system.
3. Determine the amount of resources required to effectively and efficiently manage the university processes, including human, material, and financial and information resources.
4. Define the quality objectives supposed to be accomplished.

The following steps has been used towards the development and improvement of an ISO 9001:2008 model of quality management system in higher education institution of economics

1) Establishing top management commitment.

In this step, the university's top management design an ISO 9000 project committee at the university level in order for it to lead and coordinate the project (the committee includes faculty, staff and student members)and organize a quality board to supervise the project committee activity. Furthermore, the university's top management provides all ISO 9000 project members with the adequate training required by the ISO 9000 family of standards. The ISO 9000 project committee and each quality coordinator are responsible for documenting university quality management system. They are also responsible for the co-ordination of the ISO 9001:2008 model of quality management system implementation process.

2) Developing quality policy and objectives.

In the next step, the ISO 9000 project committee with the support of each quality coordinator perform a gap analysis of existing quality system against the requirements of ISO 9001:2008. The gap analysis addresses possible interactions and synergies between existing quality management system and ISO 9000 requirements. The project committee defines the university's overall quality policy, including its vision, mission and core values, as well as measurable quality objectives at the university and departmental level, for short- and longer-terms. The quality objectives established at each department level have to be integrated and correlated to university's quality policy and general objectives.

3) Structuring and organizing quality management system documentation.

In the third step, the ISO 9000 project committee take the following actions: structure the university's educational programs in comprehensive elements, including: undergraduate

and graduate programs, doctoral and postdoctoral programs, individual courses and projects, lectures, seminars, laboratories, and research programs; draw the teaching, learning, training, consulting, and research processes, by creating process flowcharts, and identifying their mutual interactions and cooperation (the process flowcharts are supposed to assist the faculty, staff and students to understand the functional process of universities). In addition, the project committee organizes the documentation of teaching, learning, training, consulting, and research processes.

4) Documenting quality management system.

In the forth step, the ISO 9000 project committee develop the university's quality management system documentation, including: quality manual, which describes the quality management system and refers to quality management system procedures; as well as general and operational procedures required by ISO 9001 and needed to ensure adequate operation of university processes. The general procedures include: control of document and data, control of quality records, internal audits, control of nonconforming product, corrective and preventive action, and analysis of quality management system by top management. Also operational procedures have to be documented, evaluated for efficiency and conformity against ISO 9001 requirements and agreed by faculty and staff. Such operational procedures include: selection, admission, and registration of students; curriculum design and development; assessment and evaluation of students; evaluation of lectures and courses content; graduation of students; etc. Work instructions are developed, for example, for using facilities such as: computing facilities, laboratory workspace, and communicating technologies. Job specifications for each faculty and staff member are reviewed in order for them to comply with the university's quality policy and objectives and its structure related to quality management system. Furthermore, some measures and indicators for assessing the university's quality management system performance (including: teaching, learning, training, consulting, and research processes) are established.

5) Performing internal quality audits.

The main objective of an internal quality audit is to verify if the quality management system of university complies with the ISO 9001 standard requirements, as well as whether these requirements are effectively implemented and are suitable to achieve the general and quality objectives. Therefore, in this stage the ISO 9000 project committee and quality

coordinators perform the following actions: measure, assess and monitor the teaching, learning, training, consulting, and research quality indicators selected in previous stage; manage corrective and preventive actions; record and track the advancement; and keep quality records. For example, an internal quality audit should identify specific problems to be addressed. The internal audit should specify corrective and preventive actions to be undertaken if the university's quality management system is not compliant with the ISO 9001 standard requirements.

6) Performing external quality audit.

At this stage, in order for university to gain ISO 9001 certification, an external quality audit has to be performed by a third party. Upon performing external quality audit, a summary report and recommendation for certification and non-conformance reports are provided to university. These reports include findings and recommendations for university registration and certification (or not) in compliance with the ISO 9001:2008 standard requirements. Usually, the certificate is issued for three years. A complete re-assessment is carried out every three years. In order to sustain the ISO 9001 certification, the university's top management has to accept quality improvement as a continuous process. Therefore, commitment towards quality improvement will continue even after certification. Trained and competent internal auditors will conduct internal quality audits on a periodic basis stated by the procedures at least once each year (paunescu&fok, 2005).

## Organizational Registration to ISO 9001

The organization that is registered by a recognized certification body will have more credibility in the world's marketplace. The registered organization must conform to the ISO 9001 and have an independent third party continually observe its conformance in order to maintain its ISO 9001 certificate. The unregistered organization may not always feel the pressure to maintain conformance and may fail to notice issues that need attention or correction (Goetsch& Davis, 2010).

The organization that wants a conforming ISO 9000 QMS must go through a process that includes the following steps (step 5 and 7 are excluded for no registering organizations) (Goetsch& Davis, 2010):

1. Develop or upgrade a quality manual that describes how the organization will assure the quality of its products or services.
2. Document procedures or upgrade existing documentation that describes how processes will be operated. This includes procedures for management reviews and audits.
3. The organization must obtain top management's commitment to the QMS and continual improvement.
4. The organization's top management must ensure that customer requirements are determined and met.
5. The organization must hire an accredited company to examine its systems, processes, procedures, quality manual, record, and related items. If they are satisfied that the organization is effectively using the QMS, registration will be granted. On the other hand, the company will inform the organization of the areas requiring work and another audit will be scheduled.
6. Whether registered or not the organization must perform its own internal audits to ensure that the systems, processes and procedures are working effectively.
7. One registered, the outside registrar will make periodic audits. This audit must be passed to keep registration.

The organization has to respond to all ISO 9001 requirements and tell specifically what it is going to do and how it is to be done. ISO doesn't tell the organization what to do. To keep registration, the organization must do what it said it would do. To get an ISO 9001 Certification University needs to go through these following steps (Langley, 2014):

Step 1: Top management commitment: managing director or chief executive should demonstrate a commitment and a determination to implement an ISO 9001 quality management system in the organization.

Step 2: Establish implementation team: Establish an implementation team and appoint a management representative as its coordinator to plan and be in charge of implementation. The members of the implementation team should also be trained on ISO 9001 quality management systems by a professional training organization.

Step 3: Start ISO 9001 awareness programs: ISO 9001 awareness programs should be conducted to communicate to the employees the aim of the ISO 9001 quality management

system; the advantage it offers to employees, customers and the organization; how it will work; and their roles and responsibilities within the system.

Step 4: Provide Training: The training should cover the basic concepts of quality management systems and the standard and their overall impact on the strategic goals of the organization and the changed processes.

Step 5: Conduct initial status survey: Perform a gap analysis, to compare the organization's existing quality management system, if there is one with the requirements of the standard ISO 9001:2008.

Step 6: Create a documented implementation plan Identify and describe processes to make the organization's quality management system fully in compliance with the standard.

Step 7: Develop quality management system documentation plan: A list of the documents to be prepared should be drawn up and the responsibility for writing the documents should be assigned to the persons concerned in various functional departments.

Step 8: Document control: Document control is simply a means of managing the creation, approval, distribution, revision, storage, and disposal of the various types of documentation.

Step 9: Implementation: Implement the quality management system being documented as the documentation is developed.

Step 10: Internal quality audit: Conform to the planned arrangements, to the requirements of the standard ISO 9001:2008 and to the quality management system.

## Benefit of ISO Certification and implementing Quality Management System

ISO certification shows the capability of an organization to control the processes that determine the acceptability of the service or product (Kothari &Pradhan, 2011).The ISO 9000 quality management system is designed to provide the framework for continual improvement to increase customer satisfaction. It provides confidence to the organization and its customers that it is able to provide products that consistently fulfill requirements.

Customers have increased confidence in the products and services of ISO 9000 registered organizations because they know that appropriate quality management processes are applied and that an independent registrar ensures that this continues to occur. ISO 9000 is a way to make real improvements in the organization's operations, serve its customer in a better way, and be more successful. Adopting ISO 9000 will improve operations by implementing a quality management system according to ISO 9000 requirements for management responsibility, resource management, product realization, measurement, analysis, and continual improvement, customer satisfaction, and competitiveness (Goetsch & Davis, 2010). The implementation of an ISO 9001 quality management system in a university environment ensures focusing on training and professional development of every faculty and staff member, enhances university's image with internationally accepted quality management standard; It leads to marketing and government accreditation benefits, ensures commitment to permanent improvement and involves measurement of performance and progress; through internal quality auditing, self-assessment, as well as external quality auditing. In addition, it allows university to decrease failures of student to pass courses/ exams, failures of courses to meet planned objectives, or failures of research projects to meet contract requirements; It reduces student complaints .Furthermore, it leads to a clearer understanding of roles, responsibilities and authority, a sense of ownership for quality improvement initiatives, better communication and understanding of the university's mission and objectives, better understanding between academics and support staff, clearer distinction of the students and the staff's rights and responsibilities, establishing a clear statement of organizational mission, active commitment of the top management, employee involvement in planning and implementation, a teamwork approach that involved the workers in solving problems, and a market advantage(Khan,2010). Approaching ISO 9000 from a marketing perspective only will result in a negative reaction, it may be possible to fool the ISO 9000 registrar's auditor but customers will not be fooled for long. ISO 9000 must be approached with a positive attitude and a commitment of top management (Goetsch& Davis, 2010). By integrating ISO 9001, university can demonstrate a documented quality management system; this documentation guides teaching, learning, research, and other university's processes. Quality procedures document each process in the organization and can be instructive to people who join the organization and to those in other departments, it provides structure by defining who is involved in each procedure and which other procedures it might interact or interfere with. By writing down a formal description of each procedure, people are forced

to think about their job. They formalize what they do. This will lead them to see better ways of doing their job and discover wasteful practices. People also tend to idealize the description, and describe the way things should be rather than the way they are. This presents an opportunity to change existing practice the way things are to the way they should be. Also by integrating ISO 9001,University can identify the real needs and expectations for undergraduate, graduate, and other courses and programs being offered; It allows university to focus on student achievement; It allows university to design courses and programs that meet the stated needs and expectations; It allows university to identify quality problems of products and services being offered; It allows university to implement corrective and preventive actions in order for it to continuously improve results(Walsh & Lenihan,2005;Paunescu& Fok,2005).

## Barriers and challenges to TQM and ISO implementation

Management failure to lead is the primary obstacle to successful Total Quality Management. Management style which prevents a learning culture and creates barriers between departments is the most significant barrier (Alsughayir, 2014).Quality improvement requires a fundamental change in the mind set of the whole organization. TQM need change in culture and attitude which comes through strategic training and education. Failure occurring in TQM because organizations make only superficial attempts at change and when total quality management system are not designed to fit the cultural circumstances of the organization and ineffective implementation results when TQM becomes extra work instead of a new way of doing things (Khan, 2011). Also TQM implementation is expensive regarding money, time and efforts. People who are impatient to see the results get disappointed with TQM and abandon it.TQM philosophy is customer driven and based on people involvement and teamwork but in educational institutions faculties consider themselves as experts and want academic freedom with full control over what are to be taught, when and how. With implementation of TQM the faculties, being experts in their areas, see a threat to their individual autonomy and feel forced when asked to involve customer and work in teams. This fear needs to be driven out. Service organizations especially educational institutions find it difficult to identify its customers clearly as the customer is often present and participate in processes of service production. In education the students play a multiple role being a recipient of the service, as raw material in process of transformation and involved in the process of learning at the same

time. Services like education have a lot of customers and stakeholders which makes it difficult to please a single one. Human interaction plays a central role in service quality. Many service organizations like education institutions and banks have to deal with a large number of customers which maximizes the chances of error which makes it difficult to achieve reliability. Contrary to manufacturing organizations, service organizations customers' needs are difficult to identify and meet as they vary from individual to individual. It depends upon interaction between two individuals; the service provider and the customer. Therefore, the service quality is highly customized but in manufacturing quality is uniformly specified so comparison is easy to achieve. Service quality is intangible and invisible which makes it difficult to define or measure accurately. On the other hand the products of the manufacturing organizations are tangible and visible. A manufacturing product can be easily recalled and replaced but a poor service quality cannot be replaced or recalled (Khan, 2010). Inadequate training and education affects successful TQM implementation and failure to institutionalize quality within organizations negatively affects TQM initiatives. Also lack of leadership support, lack of planning for quality, lack of customer focus, frequent turnover of employees , lack of motivation, lack of understanding of TQM concepts , belief that quality is expensive, quality is not measured effectively , management decisions are short-term-oriented, the strategic plan is not customer-driven, lack of commitment from workers , top management is not committed to quality , quality is treated as a separate initiative , management's compensation is not linked to achieving quality goals , employees are not empowered to implement quality improvement , employees resistance to change, poor communication, lack of knowledge and skills, and quality is not defined by the customer(Alsughayir,2014).

## APPENDIX B

## Interview Questions

**Name:** **Date:**

**Position:** **Qualification:**

**Institution's name:**

**How long have you been in the organization? _____**

**Part One: The questions under this part were designed to find out what is the current quality system applied in Public Palestinian Universities regarding the requirement of quality management system and to what extent does it comply with the international standard of ISO 9001:2008.**

**4. Quality Management System Documentation**

Q 1: Have you identified the specific requirements of ISO 9001:2008 which can be applied to the University?

Q 2: Are there documented statements for quality policy and objectives?

Q3: Is there a quality manual?

Q4: Have you identified the activities that need to be documented?

Q5: Does the University have its own directory and guide of quality?

Q6: Are there detailed procedures regarding activities affecting quality?

Q7: Has the University got adequate procedures to control the documents and data related to quality?

Q8: Do the document have a coding system?

Q9: Has the university named a person responsible for the authorization of documents?

**5. Management Responsibility**

Q10. What are the evidences

of management commitment to quality management system development and continually improve its effectiveness?

**6. Resource management**

Q11: Have the resources requirements been established by the University to implement and continually improve the effectiveness of Quality management system? How?

**7. Product Realization**

Q12: How does the university plan for educational programs?

Q13: How does the university design a program?

Q14: Explain the teaching, assessment and admission process at the university?

**8. Measurement, analysis and improvement**

Q15: How does educational Institution measure, monitor and improve its processes to ensure its academic educational product meet customers' requirements?

**<u>Part Two:</u> The questions under this part were designed to find out the weaknesses and challenges that prevent Public Palestinian Universities in implementing quality management system according to international standard of ISO 9001:2008 and how does the university respond to these challenges.**

Q 1: What are the challenges and weaknesses that face the University in implementing quality management system?

Q 2: How does the University manage its resources and increase its overall capacity to overcome the challenges?

Q3: How could the University respond to these challenges?

**<u>Part Three:</u> The questions under this part were designed to discover the benefits of Implementing Quality Management System in Public Palestinian Universities.**

Q 1: What are the benefits of implementing quality management system at Public Palestinian Universities?

Q2: Is Implementing quality management system at Public Palestinian Universities according to international standard of ISO 9001:2008 creates some kind of competitive **advantage? If yes how? Please explain?**

Q3: Is implementing quality management system at Public Palestinian Universities according to international standard of ISO 9001:2008 make real improvement in the institution's operation and processes? If yes how? Please explain?

Q4: Is implementing quality management system at Public Palestinian Universities according to international standard of ISO 9001:2008 increase stakeholders confidence in the services provided? If yes how? Please explain?

**<u>Part Four:</u> The question under this part was designed to suggest recommendation and solutions that help administration of Public Universities to improve the level of service quality and to continue the process of continuous improvement of their services.**

What are your suggestions for improving the quality of education in your institution?

**Thank you!**

## APPENDIX C

### Cover Letter for the respondents

Subject: **Completion of the questionnaire for MBA Research**

Miss Luda Walid Mustafa is an MBA student at the University of Hebron and she is undertaking research on "Assessing the possibility of implementing the requirements of quality management system according to ISO 9001:2008 in Public Palestinian Universities in West Bank" The aim of this study is to assess the current quality system in Public Palestinian universities for the application of quality management system according to the specification of ISO 9001:2008 by identifying the gap between the current reality of quality and what is required to be achieved.

Please grant her part of your valuable time to answer the questions of the attached questionnaire. Please be assured that all data and information obtained from you will be treated with confidentiality and will be only used for scientific research purposes of the named study.

Thanks and regards,

Moh'd Awad, Ph.D.
Supervising Professor

# QUESTIONNAIRE

**Research topic:**

***"Assessing the possibility of implementing the requirement of quality management system according to ISO 9001:2008 in Public Palestinian Universities in West Bank."***

**Personal Information:**

Institution's Name: _____

Gender: _____ Qualifications: _____

How long have you been at the organization _____

**There are five basic requirements which together constitute the requirements of international standard of ISO 9001:2008. These requirements by sequencing are: (1) Quality Management System (2) Management Responsibility (3) Resource Management (4) Product Realization (5) Measurement, Analysis and Improvement. These five quality management system requirements represent the observed variables that measure the extent of the implementation of ISO quality management system requirements.**

**Please express your opinion by ticking (√) on the most appropriate box against each statement.**

**Quality management system is composed of all organization's policies, procedures, plans, resources, processes, and designing of responsibility and authority. When these policies, procedures, and plans are taken together they define how the organization works and how quality managed.**

**Table A-1: Quality Management System Measurement Items Adapted from (Khan, 2010)**

| Quality Management System | No | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Documentation Management | 1 | A quality management system exists at the university institution. | | | | | |
| | 2 | Statements of quality policy and quality objectives are documented. | | | | | |
| | 3 | A quality manual exists at the university. | | | | | |
| | 4 | The university has a documented quality procedures and work instructions. | | | | | |
| | 5 | Quality system procedures are consistent with the requirements of ISO standard and Institution's quality policy | | | | | |
| | 6 | Documented procedures are approved before issuance. | | | | | |
| | 7 | Documented procedures are reviewed and updated as necessary and re-approved. | | | | | |
| | 8 | Records of main processes are reserved. | | | | | |
| | 9 | Details of the staff involved in quality management system and control arrangement is available. | | | | | |
| | 10 | Details of learning activities and students' personal development and leadership skills are available. | | | | | |
| | 11 | The records of student's assessment are up to date and available. | | | | | |
| | 12 | Transfers in and out of programs or courses are clearly reconsidered and recorded. | | | | | |
| | 13 | Record and statistical data of student's progression are available. | | | | | |

**Table A-2: Management Responsibility Measurement Items Adapted from (Khan, 2010)**

| Management responsibility | No | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Management commitment | 1 | The university has a clear vision linked to quality | | | | | |
| | 2 | The university has a clear mission linked to quality | | | | | |
| | 3 | The university has a policy to improve quality and maintain standards | | | | | |
| | 4 | The university has clear quality objectives and values | | | | | |
| | 5 | Details of learning activities and students' personal development and leadership skills are available. | | | | | |
| | 6 | Study is conducted to identify the needs of the students/staff/employees/business and industry needs. | | | | | |
| | 7 | The students'/ staff's views on the operational aspects of the institution are sought. | | | | | |
| | 8 | Management reviews the quality management system (objectives, processes, achievements, audit results) and take appropriate action when needed. | | | | | |
| Customer Focus | 9 | The students have access to an office for their social and co-curricular activities. | | | | | |
| | 10 | Students/Teaching staff/Non-academic staff is involved in decision-making. | | | | | |
| | 11 | There are arrangements for counseling and welfare support for the students/the teachers. | | | | | |
| | 12 | There is a comprehensive service to students on careers and the world of employment. | | | | | |
| | 13 | Financial support for poor but talented students is available. | | | | | |

| Management responsibility | No | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Customer Focus | 14 | Teachers are provided opportunities to improve their qualifications. | | | | | |
| | 15 | The official of the university/institution are easily available to the teachers and the students. | | | | | |
| Responsibility and authority | 16 | Academic program leader is identified. | | | | | |
| | 17 | The roles of other staff involved in the program are established. | | | | | |
| | 18 | Roles of staff involved in learning resources and technical support staff are identified. | | | | | |
| | 19 | There is a quality management representative. | | | | | |
| | 20 | There is job specification for the staff/employees. | | | | | |
| Internal Communication | 21 | The students/ staff/ employees are aware of quality management system and control arrangements. | | | | | |
| | 22 | The students/ staff are aware of the vision, mission and objectives of the institution. | | | | | |
| | 23 | The students are fully informed of their rights and responsibilities. | | | | | |
| | 24 | Details regarding the location and availability of all learning and physical resources such as buildings, playgrounds, libraries, IT labs etc., including those available off-site are provided to students. | | | | | |
| | 25 | Plans are communicated to the academic and the nonacademic staff/ employees. | | | | | |
| | 26 | The staff/employees are made aware of the appraisal. | | | | | |
| | 27 | There is effective communication between academic staff and learning resources staff. | | | | | |

**Table A-3: Resource Management Measurement Items Adapted from (Khan, 2010)**

| Resource Management | No | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Financial Resources | 1 | There is central support for research at the university. | | | | | |
| | 2 | There is restricted support for research at the university. | | | | | |
| | 3 | Sufficient funds for research are allocated in the university's annual budget. | | | | | |
| Human Resources | 4 | There is a staff to support the students' social & co-curricular activities. | | | | | |
| | 5 | The staff is sufficient in number. | | | | | |
| | 6 | The staff is appropriately qualified. | | | | | |
| | 7 | Learning resources staff is appropriately experienced. | | | | | |
| | 8 | Learning resources staff is sufficient in number. | | | | | |
| | 9 | Learning resources staff is appropriately qualified. | | | | | |
| | 10 | There are sufficient human resources to support teaching and learning. | | | | | |
| Training and Development | 11 | Development and training program exists for academic staff/ non-academic staff/employees. | | | | | |
| | 12 | There is a support for continuing professional development of academic staff. | | | | | |
| | 13 | Training and development needs of learning resources staff/ employees / academic staff are identified. | | | | | |
| Infrastructure | 14 | Sufficient health services are available on campus | | | | | |
| | 15 | Sufficient emergency services are available on campus. | | | | | |
| | 16 | The students/the teachers have access to relevant and appropriate IT facilities including internet, application software and on- line databases. | | | | | |

| Resource Management | No | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Infrastructure | 17 | There is overall strategy for learning resources and their development | | | | | |
| | 18 | There are sufficient physical resources to support teaching and learning. | | | | | |
| | 19 | Laboratories, library and IT are appropriate. | | | | | |
| Work Environment | 20 | The teachers are encouraged to conduct research studies. | | | | | |
| | 21 | The university is an equal opportunity institution. | | | | | |
| | 22 | Teachers are awarded for performing well. | | | | | |
| | 23 | There are chances of promotion for the teachers from one scale to another. | | | | | |
| | 24 | Teachers are getting enough remuneration. | | | | | |
| | 25 | The students'/Teachers' safety is ensured at the campus. | | | | | |
| | 26 | Award is given to group/team rather than individuals to enhance team spirit. | | | | | |
| | 27 | Graduation is held regularly and annually for awarding degrees to the students | | | | | |

**Table A-4: Product Realization Measurement Items Adapted from (Khan, 2010)**

| Product Realization | No. | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Program Planning | 1 | Market research is conducted for the proposed program by the institution. | | | | | |
| | 2 | A cost and benefit analysis for the proposed program is conducted prior to consideration by the Institution. | | | | | |
| | 3 | Human resources are identified and addressed prior to the launching of the academic program | | | | | |
| | 4 | Physical resources are identified and addressed prior to the launching of the academic program. | | | | | |
| | 5 | There is a program committee with a defined composition and terms of reference to oversee the program operation and evaluation. | | | | | |
| | 6 | Academic program handbook with details of rules and regulations and support etc. is available. | | | | | |
| Program Design | 7 | Programs have clear aims & objectives. | | | | | |
| | 8 | Objectives of program regarding skills to be learned are identified in advance. | | | | | |
| | 9 | Courses within the program are clearly identified. | | | | | |
| | 10 | All electives are identified and classified appropriately | | | | | |
| | 11 | The mix of core, elective and basic science courses satisfies the institution's rules and regulations. | | | | | |
| | 12 | Level of the courses, including elective subjects is decided before the start of the program | | | | | |
| | 13 | The structures of the courses are coherent. | | | | | |
| | 14 | Pre-requisites for each course are investigated and established. | | | | | |

| Product Realization | No. | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Program Design | 15 | The courses selected satisfy the range and depth of knowledge required for the relevant academic program | | | | | |
| | 16 | The subjects content are related to the program aims and objectives | | | | | |
| | 17 | Each course contents are developed after discussions with internal staff with expertise in that particular area. | | | | | |
| | 18 | Each course contents are developed after discussions with external staff with expertise in that particular area. | | | | | |
| | 19 | Total number of credits is established | | | | | |
| | 20 | There is arrangement for credit rating such that the students are not disadvantaged if they decide to withdraw out of the institution at any time. | | | | | |
| | 21 | The students' progression routes are well defined. | | | | | |
| | 22 | A year is broken down into specific periods of study i.e. semesters, terms | | | | | |
| | 23 | Curriculum satisfies the academic requirements of the profession. | | | | | |
| Teaching Processes | 24 | The academic programs aims and objectives are understood by the staff. | | | | | |
| | 25 | The academic program aims and objectives understood by the students. | | | | | |
| | 26 | Delivery methodology of course is decided in advance | | | | | |
| | 27 | Learning experiences of the students are relevant to employment | | | | | |
| | 28 | Students are given opportunities to become involved in program operation and take responsibility for their own learning. | | | | | |
| | 29 | The learning strategy clearly identifies teacher-centered & student-centered activities. | | | | | |

| Product Realization | No. | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Teaching Processes | 30 | Teacher-centered & student-centered activities are planned before start of the program. | | | | | |
| | 31 | Students are involved in teaching and encouraged to take part in discussion | | | | | |
| Assessment processes | 32 | The students' assessment methodology for each course is determined in advance | | | | | |
| | 33 | The assessment papers i.e. examinations and assignments are prepared in accordance with the assessment requirements for the intended outcome. | | | | | |
| | 34 | The assessment ensures the students attain the required standards. | | | | | |
| | 35 | There is a students' assessment criterion as well as grading criterion for each course/subject | | | | | |
| | 36 | Students assessed work is returned in time | | | | | |
| | 37 | Grading practice is explained to the students in advance | | | | | |
| | 38 | Teachers provide useful and timely feedback to students | | | | | |
| Student admission processes | 39 | There are planned arrangements for students' admission. | | | | | |
| | 40 | There are students' selection criteria for the program. | | | | | |
| | 41 | The students' selection criteria for program are strictly followed. | | | | | |
| | 42 | Academic staff is aware of the admission process | | | | | |
| | 43 | The student entry and intended outcome of program and courses are carefully matched | | | | | |

**Table A-5: Measurement Improvement & Analysis Measurement Items Adapted from (Khan, 2010)**

| Measurement, Improvement & Analysis | No. | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Customer Satisfaction | 1 | A system for taking staff's views exists at the university. | | | | | |
| | 2 | There is a system for taking the students' views to improve quality. | | | | | |
| | 3 | The students provide feedback on the quality of the courses they study. | | | | | |
| | 4 | The students provide feedback on the quality of teaching. | | | | | |
| Monitoring and Measurement of Processes | 5 | Academic programs are monitored for quality. | | | | | |
| | 6 | Administrative support services are monitored for quality. | | | | | |
| | 7 | Feedback on the processes and procedures of the institution is received from teachers/students. | | | | | |
| | 8 | There is an appraisal and peer review of staff, including teaching skills. | | | | | |
| | 9 | Programs are compared with other institutions for quality. | | | | | |
| | 10 | The institution processes and procedures are compared with the best institutions for benchmarking. | | | | | |
| Monitoring and Measurement of Product | 11 | There is a systematic and progressive development & assessment of achievement skills. | | | | | |
| | 12 | There are clear arrangements to monitor students' career development after graduation. | | | | | |
| | 13 | A program evaluation is carried out at the completion | | | | | |
| | 14 | The quality management system ensures curriculum review and development | | | | | |
| | 15 | There is an assessment schedule for the students so that they know what, when and how they are going to be assessed. | | | | | |

| Measurement, Improvement & Analysis | No. | Knowledge and Implementation Components | Level of Knowledge and Implementation | | | | |
|---|---|---|---|---|---|---|---|
| | | | Fully Agree | Agree | Neither agree nor disagree | Disagree | Totally Disagree |
| Monitoring and Measurement of Product | 16 | There are procedures for internal verification and evaluation of all aspects of assessment process. | | | | | |
| | 17 | There are clear procedures to ensure grades and certification awarded to students are fair and unbiased. | | | | | |
| | 18 | Students' progression rates and non completion rates are clearly identified. | | | | | |
| | 19 | There is no gender discrimination in the assessment of the students. | | | | | |
| | 20 | Problems faced by Higher Education Institutions are in enhancing the quality of education | | | | | |

**The questions under this part were designed to find out the weaknesses and challenges that prevent Public Palestinian Universities in implementing the requirement of quality management system according to international standard of ISO 9001:2008.**

**Table B. In your point of view, which of the following Problems your institution is facing in enhancing the quality management system of education**

| | No. | Weaknesses and challenges | Yes | To Some Extent | No |
|---|---|---|---|---|---|
| Leadership | 1 | Poor management and failure to lead. | | | |
| | 2 | Management create barriers between departments | | | |
| | 3 | Management style prevents a learning culture. | | | |
| | 4 | Lack of leadership support | | | |
| | 5 | Top management aren't committed to quality | | | |
| | 6 | Centralized decision making | | | |
| | 7 | Lack of planning for quality | | | |
| | 8 | Quality is treated as a separate initiative | | | |
| | 9 | External interference in the affairs of the institution | | | |
| | 10 | Favoritism and nepotism (المحاباة و المحسوبية) in decision making and appointment of staff and employees | | | |
| | 11 | Employees resistance to change | | | |
| Resource management | 12 | Lack of physical resources (buildings, libraries, labs etc.) | | | |
| | 13 | Lack of human resources (qualified teachers etc.) | | | |
| | 14 | Lack of adequate space | | | |
| | 15 | Lack of well-equipped libraries and labs | | | |
| Product realization | 16 | Out-dated curriculum | | | |
| | 17 | Lack of quality management system at the feeding colleges and schools | | | |
| Customer focus | 18 | Lack of customer focus | | | |
| | 19 | Quality isn't defined by Customer | | | |
| Training and development | 20 | Employees aren't empowered to implement quality improvement | | | |
| | 21 | Lack of training and motivation | | | |
| Work environment | 22 | Poor pay structure for the teachers and employees | | | |
| | 23 | Lack of incentives for the teachers for professional growth and performance | | | |
| Internal communication | 24 | Lack of communication between the teachers and the administration | | | |
| | 25 | Lack of communication between the students and the administration | | | |

**Please write down the problems faced by your institution other than the above ones.**

1.

2.

3.

**What are your suggestions for improving the quality of education in your institution?**

1.

2.

3.

**Thank you very much for completing the questionnaire**

# APPENDIX D

**Referees of the questionnaire and interview questions**

1. Dr. Samir Abuznaid Hebron University
2. Dr. Fadi Kattan Bethlehem University
3. Dr. Jamil Khader Bethlehem University
4. Ms. Shereen Al-Sayyed Global Certification Palestine
5. Yasmeen Abu Baker MAK international- Lloyds Register Quality Assurance Palestine

# APPENDIX E

## Oneway

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Management commitment | Bethlehem | 47 | 3.6436 | .65472 |
| | Hebron | 78 | 3.6378 | .68660 |
| | PPU | 79 | 3.5174 | .65558 |
| | Total | 204 | 3.5925 | .66684 |
| Customer Focus | Bethlehem | 47 | 3.6109 | .53923 |
| | Hebron | 78 | 3.5897 | .62476 |
| | PPU | 79 | 3.4955 | .73730 |
| | Total | 204 | 3.5581 | .65221 |
| Responsibility and authority | Bethlehem | 47 | 3.5319 | .54098 |
| | Hebron | 78 | 3.7436 | .55820 |
| | PPU | 79 | 3.4532 | .63465 |
| | Total | 204 | 3.5824 | .59694 |
| Internal Communication | Bethlehem | 47 | 3.5593 | .55395 |
| | Hebron | 78 | 3.5238 | .50055 |
| | PPU | 79 | 3.4177 | .55365 |
| | Total | 204 | 3.4909 | .53473 |

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Financial Resources | Bethlehem | 47 | 3.1702 | .71178 |
| | Hebron | 78 | 3.0000 | .53722 |
| | PPU | 79 | 3.0211 | .75550 |
| | Total | 204 | 3.0474 | .66948 |
| Human Resources | Bethlehem | 47 | 3.3617 | .50186 |
| | Hebron | 78 | 3.4432 | .47049 |
| | PPU | 79 | 3.2152 | .81163 |
| | Total | 204 | 3.3361 | .63593 |
| Training and Development | Bethlehem | 47 | 3.5177 | .87036 |
| | Hebron | 78 | 3.5556 | .59012 |
| | PPU | 79 | 3.2278 | .94061 |
| | Total | 204 | 3.4199 | .81691 |
| Infrastructure | Bethlehem | 47 | 3.5745 | .64156 |
| | Hebron | 78 | 3.3761 | .64434 |
| | PPU | 79 | 3.2004 | .61924 |
| | Total | 204 | 3.3538 | .64708 |
| Work Environment | Bethlehem | 47 | 3.4122 | .48266 |
| | Hebron | 78 | 3.4455 | .51187 |
| | PPU | 79 | 3.2753 | .54168 |
| | Total | 204 | 3.3719 | .52058 |

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Program Planning | Bethlehem | 47 | 3.4078 | .55365 |
| | Hebron | 78 | 3.6026 | .51193 |
| | PPU | 79 | 3.4831 | .91777 |
| | Total | 204 | 3.5114 | .70605 |
| Program Design | Bethlehem | 47 | 3.8874 | .52611 |
| | Hebron | 78 | 3.8175 | .54671 |
| | PPU | 79 | 3.9680 | .55732 |
| | Total | 204 | 3.8919 | .54756 |
| Teaching Processes | Bethlehem | 47 | 3.7234 | .60452 |
| | Hebron | 78 | 3.6571 | .58437 |
| | PPU | 79 | 3.6139 | .50802 |
| | Total | 204 | 3.6556 | .55969 |
| Assessment processes | Bethlehem | 47 | 3.8298 | .69261 |
| | Hebron | 78 | 3.7546 | .69830 |
| | PPU | 79 | 3.8951 | .49313 |
| | Total | 204 | 3.8263 | .62524 |
| Student admission processes | Bethlehem | 47 | 3.6255 | .74905 |
| | Hebron | 78 | 3.8103 | .68064 |
| | PPU | 79 | 3.8228 | .47716 |
| | Total | 204 | 3.7725 | .62998 |
| Customer Satisfaction | Bethlehem | 47 | 3.3404 | .59761 |
| | Hebron | 78 | 3.4103 | .78849 |
| | PPU | 79 | 3.5285 | .53107 |
| | Total | 204 | 3.4400 | .65635 |

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| Monitoring and Measurement of Processes | Bethlehem | 47 | 3.2908 | .58717 |
| | Hebron | 78 | 3.5214 | .64821 |
| | PPU | 79 | 3.3882 | .53023 |
| | Total | 204 | 3.4167 | .59475 |
| Monitoring and Measurement of Product | Bethlehem | 47 | 3.4319 | .44483 |
| | Hebron | 78 | 3.4154 | .55993 |
| | PPU | 79 | 3.4544 | .40693 |
| | Total | 204 | 3.4343 | .47716 |

**ANOVA**

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Management commitment | Between Groups | .729 | 2 | .364 | .818 | .443 |
| | Within Groups | 89.541 | 201 | .445 | | |
| | Total | 90.269 | 203 | | | |
| Customer Focus | Between Groups | .519 | 2 | .260 | .608 | .546 |
| | Within Groups | 85.833 | 201 | .427 | | |
| | Total | 86.352 | 203 | | | |
| Responsibility and authority | Between Groups | 3.466 | 2 | 1.733 | 5.058 | .007 |
| | Within Groups | 68.871 | 201 | .343 | | |
| | Total | 72.336 | 203 | | | |

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Internal Communication | Between Groups | .727 | 2 | .364 | 1.275 | .282 |
| | Within Groups | 57.317 | 201 | .285 | | |
| | Total | 58.044 | 203 | | | |
| Financial Resources | Between Groups | .939 | 2 | .469 | 1.048 | .353 |
| | Within Groups | 90.048 | 201 | .448 | | |
| | Total | 90.986 | 203 | | | |
| Human Resources | Between Groups | 2.081 | 2 | 1.040 | 2.614 | .076 |
| | Within Groups | 80.013 | 201 | .398 | | |
| | Total | 82.094 | 203 | | | |
| Training and Development | Between Groups | 4.799 | 2 | 2.400 | 3.691 | .027 |
| | Within Groups | 130.671 | 201 | .650 | | |
| | Total | 135.470 | 203 | | | |
| Infrastructure | Between Groups | 4.186 | 2 | 2.093 | 5.206 | .006 |
| | Within Groups | 80.812 | 201 | .402 | | |
| | Total | 84.998 | 203 | | | |
| Work Environment | Between Groups | 1.236 | 2 | .618 | 2.310 | .102 |
| | Within Groups | 53.778 | 201 | .268 | | |
| | Total | 55.014 | 203 | | | |

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Program Planning | Between Groups | 1.216 | 2 | .608 | 1.222 | .297 |
| | Within Groups | 99.980 | 201 | .497 | | |
| | Total | 101.196 | 203 | | | |
| Program Design | Between Groups | .890 | 2 | .445 | 1.492 | .228 |
| | Within Groups | 59.974 | 201 | .298 | | |
| | Total | 60.864 | 203 | | | |
| Teaching Processes | Between Groups | .353 | 2 | .177 | .562 | .571 |
| | Within Groups | 63.236 | 201 | .315 | | |
| | Total | 63.590 | 203 | | | |
| Assessment processes | Between Groups | .776 | 2 | .388 | .992 | .373 |
| | Within Groups | 78.581 | 201 | .391 | | |
| | Total | 79.357 | 203 | | | |
| Student admission processes | Between Groups | 1.326 | 2 | .663 | 1.682 | .189 |
| | Within Groups | 79.240 | 201 | .394 | | |
| | Total | 80.566 | 203 | | | |
| Customer Satisfaction | Between Groups | 1.153 | 2 | .577 | 1.343 | .263 |
| | Within Groups | 86.298 | 201 | .429 | | |
| | Total | 87.452 | 203 | | | |
| Monitoring and Measurement of Processes | Between Groups | 1.664 | 2 | .832 | 2.384 | .095 |
| | Within Groups | 70.142 | 201 | .349 | | |
| | Total | 71.806 | 203 | | | |

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Monitoring and Measurement of Product | Between Groups | .060 | 2 | .030 | .131 | .877 |
| | Within Groups | 46.160 | 201 | .230 | | |
| | Total | 46.220 | 203 | | | |

## Post Hoc Tests

| Dependent Variable | (I) University | | (J) University | | Mean Difference (I-J) | Sig. | |
|---|---|---|---|---|---|---|---|
| Management commitment | dimension2 | Bethlehem | dimension3 | Hebron | .00580 | .963 | |
| | | | | PPU | .12621 | .306 | |
| | | Hebron | dimension3 | Bethlehem | -.00580- | .963 | |
| | | | | PPU | .12042 | .260 | |
| | | PPU | dimension3 | Bethlehem | -.12621- | .306 | |
| | | | | Hebron | -.12042- | .260 | |
| Customer Focus | dimension2 | Bethlehem | dimension3 | Hebron | .02120 | .861 | |
| | | | | PPU | .11546 | .339 | |
| | | Hebron | dimension3 | Bethlehem | -.02120- | .861 | |
| | | | | PPU | .09426 | .367 | |
| | | PPU | dimension3 | Bethlehem | -.11546- | .339 | |
| | | | | Hebron | -.09426- | .367 | |
| Responsibility and authority | dimension2 | Bethlehem | dimension3 | Hebron | -.21167- | .052 | |
| | | | | PPU | .07875 | .466 | |
| | | Hebron | dimension3 | Bethlehem | .21167 | .052 | |
| | | | | PPU | .29043* | .002 | Hebron higher than PPU |
| | | PPU | dimension3 | Bethlehem | -.07875- | .466 | |
| | | | | Hebron | -.29043-* | .002 | |
| Internal Communication | dimension2 | Bethlehem | dimension3 | Hebron | .03546 | .720 | |
| | | | | PPU | .14155 | .152 | |
| | | Hebron | dimension3 | Bethlehem | -.03546- | .720 | |
| | | | | PPU | .10609 | .215 | |
| | | PPU | dimension3 | Bethlehem | -.14155- | .152 | |
| | | | | Hebron | -.10609- | .215 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Financial Resources | dimension2 | Bethlehem | dimension3 | Hebron | .17021 | .170 | |
| | | | | PPU | .14912 | .228 | |
| | | Hebron | dimension3 | Bethlehem | -.17021- | .170 | |
| | | | | PPU | -.02110- | .844 | |
| | | PPU | dimension3 | Bethlehem | -.14912- | .228 | |
| | | | | Hebron | .02110 | .844 | |
| Human Resources | dimension2 | Bethlehem | dimension3 | Hebron | -.08152- | .485 | |
| | | | | PPU | .14651 | .209 | |
| | | Hebron | dimension3 | Bethlehem | .08152 | .485 | |
| | | | | PPU | .22803* | .025 | |
| | | PPU | dimension3 | Bethlehem | -.14651- | .209 | |
| | | | | Hebron | -.22803-* | .025 | |
| Training and Development | dimension2 | Bethlehem | dimension3 | Hebron | -.03783- | .800 | |
| | | | | PPU | .28988 | .052 | |
| | | Hebron | dimension3 | Bethlehem | .03783 | .800 | |
| | | | | PPU | .32771* | .012 | Hebron higher than ppu |
| | | PPU | dimension3 | Bethlehem | -.28988- | .052 | |
| | | | | Hebron | -.32771-* | .012 | |
| Infrastructure | dimension2 | Bethlehem | dimension3 | Hebron | .19840 | .092 | |
| | | | | PPU | .37405* | .002 | Bethlehem higher than ppu |
| | | Hebron | dimension3 | Bethlehem | -.19840- | .092 | |
| | | | | PPU | .17565 | .084 | |
| | | PPU | dimension3 | Bethlehem | -.37405-* | .002 | |
| | | | | Hebron | -.17565- | .084 | |
| Work Environment | dimension2 | Bethlehem | dimension3 | Hebron | -.03328- | .728 | |
| | | | | PPU | .13692 | .152 | |
| | | Hebron | dimension3 | Bethlehem | .03328 | .728 | |
| | | | | PPU | .17020* | .041 | |
| | | PPU | dimension3 | Bethlehem | -.13692- | .152 | |
| | | | | Hebron | -.17020-* | .041 | |
| Program Planning | dimension2 | Bethlehem | dimension3 | Hebron | -.19476- | .136 | |
| | | | | PPU | -.07532- | .563 | |
| | | Hebron | dimension3 | Bethlehem | .19476 | .136 | |
| | | | | PPU | .11944 | .290 | |
| | | PPU | dimension3 | Bethlehem | .07532 | .563 | |
| | | | | Hebron | -.11944- | .290 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Program Design | dimension2 | Bethlehem | dimension3 | Hebron | .06986 | .489 | |
| | | | | PPU | -.08062- | .424 | |
| | | Hebron | dimension3 | Bethlehem | -.06986- | .489 | |
| | | | | PPU | -.15049- | .086 | |
| | | PPU | dimension3 | Bethlehem | .08062 | .424 | |
| | | | | Hebron | .15049 | .086 | |
| Teaching Processes | dimension2 | Bethlehem | dimension3 | Hebron | .06635 | .522 | |
| | | | | PPU | .10948 | .291 | |
| | | Hebron | dimension3 | Bethlehem | -.06635- | .522 | |
| | | | | PPU | .04313 | .631 | |
| | | PPU | dimension3 | Bethlehem | -.10948- | .291 | |
| | | | | Hebron | -.04313- | .631 | |
| Assessment processes | dimension2 | Bethlehem | dimension3 | Hebron | .07521 | .516 | |
| | | | | PPU | -.06533- | .571 | |
| | | Hebron | dimension3 | Bethlehem | -.07521- | .516 | |
| | | | | PPU | -.14054- | .161 | |
| | | PPU | dimension3 | Bethlehem | .06533 | .571 | |
| | | | | Hebron | .14054 | .161 | |
| Student admission processes | dimension2 | Bethlehem | dimension3 | Hebron | -.18472- | .113 | |
| | | | | PPU | -.19725- | .090 | |
| | | Hebron | dimension3 | Bethlehem | .18472 | .113 | |
| | | | | PPU | -.01253- | .901 | |
| | | PPU | dimension3 | Bethlehem | .19725 | .090 | |
| | | | | Hebron | .01253 | .901 | |
| Customer Satisfaction | dimension2 | Bethlehem | dimension3 | Hebron | -.06983- | .564 | |
| | | | | PPU | -.18806- | .121 | |
| | | Hebron | dimension3 | Bethlehem | .06983 | .564 | |
| | | | | PPU | -.11822- | .260 | |
| | | PPU | dimension3 | Bethlehem | .18806 | .121 | |
| | | | | Hebron | .11822 | .260 | |
| Monitoring and Measurement of Processes | dimension2 | Bethlehem | dimension3 | Hebron | -.23059-* | .036 | |
| | | | | PPU | -.09741- | .372 | |
| | | Hebron | dimension3 | Bethlehem | .23059* | .036 | |
| | | | | PPU | .13318 | .159 | |
| | | PPU | dimension3 | Bethlehem | .09741 | .372 | |
| | | | | Hebron | -.13318- | .159 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Monitoring and Measurement of Product | dimension2 | Bethlehem | dimension3 | Hebron | .01653 | .852 | |
| | | | | PPU | -.02252- | .799 | |
| | | Hebron | dimension3 | Bethlehem | -.01653- | .852 | |
| | | | | PPU | -.03905- | .610 | |
| | | PPU | dimension3 | Bethlehem | .02252 | .799 | |
| | | | | Hebron | .03905 | .610 | |

## Crosstab

### University * Leadership Challenges

**Crosstab**

| | | | Leadership Challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 1 | 29 | 17 | 47 |
| | | % within University | 2.1% | 61.7% | 36.2% | 100.0% |
| | | Std. Residual | -.1- | .2 | -.2- | |
| | Hebron | Count | 4 | 42 | 32 | 78 |
| | | % within University | 5.1% | 53.8% | 41.0% | 100.0% |
| | | Std. Residual | 1.5 | -.6- | .4 | |
| | PPU | Count | 0 | 50 | 29 | 79 |
| | | % within University | .0% | 63.3% | 36.7% | 100.0% |
| | | Std. Residual | -1.4- | .5 | -.2- | |
| Total | | Count | 5 | 121 | 78 | 204 |
| | | % within University | 2.5% | 59.3% | 38.2% | 100.0% |

**Chi-Square Tests**

| | Value | Df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 5.146[a] | 4 | .273 | .276 |
| Likelihood Ratio | 6.537 | 4 | .162 | .212 |
| Fisher's Exact Test | 4.811 | | | .283 |
| Linear-by-Linear Association | .071[b] | 1 | .790 | .798 |
| N of Valid Cases | 204 | | | |

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.15.

b. The standardized statistic is .266.

## University * Resource management Challenges

**Crosstab**

| | | | Resource management Challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 6 | 26 | 15 | 47 |
| | | % within University | 12.8% | 55.3% | 31.9% | 100.0% |
| | | Std. Residual | 1.1 | .8 | -1.3- | |
| | Hebron | Count | 8 | 42 | 28 | 78 |
| | | % within University | 10.3% | 53.8% | 35.9% | 100.0% |
| | | Std. Residual | .6 | .9 | -1.2- | |
| | PPU | Count | 3 | 28 | 48 | 79 |
| | | % within University | 3.8% | 35.4% | 60.8% | 100.0% |
| | | Std. Residual | -1.4- | -1.5- | 2.1 | |
| Total | | Count | 17 | 96 | 91 | 204 |
| | | % within University | 8.3% | 47.1% | 44.6% | 100.0% |

PPU has resource management challenges more than expected

**Chi-Square Tests**

| | Value | Df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 14.759[a] | 4 | .005 | .005 |
| Likelihood Ratio | 15.032 | 4 | .005 | .006 |
| Fisher's Exact Test | 14.771 | | | .004 |
| Linear-by-Linear Association | 12.301[b] | 1 | .000 | .000 |
| N of Valid Cases | 204 | | | |

a.1 cells (11.1%) have expected count less than 5. The minimum expected count is 3.92.

b. The standardized statistic is 3.507.

## University * Product realization Challenges

**Crosstab**

| | | | Product realization Challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 6 | 27 | 14 | 47 |
| | | % within University | 12.8% | 57.4% | 29.8% | 100.0% |
| | | Std. Residual | .0 | -.7- | 1.2 | |
| | Hebron | Count | 8 | 58 | 12 | 78 |
| | | % within University | 10.3% | 74.4% | 15.4% | 100.0% |
| | | Std. Residual | -.6- | .9 | -1.2- | |
| | PPU | Count | 12 | 49 | 18 | 79 |
| | | % within University | 15.2% | 62.0% | 22.8% | 100.0% |
| | | Std. Residual | .6 | -.4- | .2 | |
| Total | | Count | 26 | 134 | 44 | 204 |
| | | % within University | 12.7% | 65.7% | 21.6% | 100.0% |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 5.199[a] | 4 | .268 | .269 |
| Likelihood Ratio | 5.189 | 4 | .268 | .282 |
| Fisher's Exact Test | 5.212 | | | .263 |
| Linear-by-Linear Association | .571[b] | 1 | .450 | .482 |
| N of Valid Cases | 204 | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.99.

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 5.199[a] | 4 | .268 | .269 |
| Likelihood Ratio | 5.189 | 4 | .268 | .282 |
| Fisher's Exact Test | 5.212 | | | .263 |
| Linear-by-Linear Association | .571[b] | 1 | .450 | .482 |
| N of Valid Cases | 204 | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.99.

b. The standardized statistic is -.755.

## University * Customer focus Challenges

**Crosstab**

| | | | Customer focus Challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 14 | 23 | 10 | 47 |
| | | % within University | 29.8% | 48.9% | 21.3% | 100.0% |
| | | Std. Residual | 1.8 | -.1- | -1.3- | |
| | Hebron | Count | 10 | 50 | 18 | 78 |
| | | % within University | 12.8% | 64.1% | 23.1% | 100.0% |
| | | Std. Residual | -1.2- | 1.8 | -1.4- | |
| | PPU | Count | 14 | 28 | 37 | 79 |
| | | % within University | 17.7% | 35.4% | 46.8% | 100.0% |
| | | Std. Residual | -.2- | -1.8- | 2.4 | |
| Total | | Count | 38 | 101 | 65 | 204 |
| | | % within University | 18.6% | 49.5% | 31.9% | 100.0% |

PPU has Customer focus Challenges more than expected.

Hebron has moderate Customer focus Challenges more than expected.

Bethlehem has not Customer focus Challenges more than expected.

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 20.206[a] | 4 | .000 | .000 |
| Likelihood Ratio | 19.669 | 4 | .001 | .001 |
| Fisher's Exact Test | 19.358 | | | .001 |
| Linear-by-Linear Association | 8.746[b] | 1 | .003 | .003 |
| N of Valid Cases | 204 | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.75.

b. The standardized statistic is 2.957.

## University * Training and development challenges

## Crosstab

| | | | Training and development challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 11 | 23 | 13 | 47 |
| | | % within University | 23.4% | 48.9% | 27.7% | 100.0% |
| | | Std. Residual | .7 | -.1- | -.5- | |
| | Hebron | Count | 8 | 44 | 26 | 78 |
| | | % within University | 10.3% | 56.4% | 33.3% | 100.0% |
| | | Std. Residual | -1.8- | .9 | .3 | |
| | PPU | Count | 20 | 34 | 25 | 79 |
| | | % within University | 25.3% | 43.0% | 31.6% | 100.0% |
| | | Std. Residual | 1.3 | -.8- | .0 | |
| Total | | Count | 39 | 101 | 64 | 204 |
| | | % within University | 19.1% | 49.5% | 31.4% | 100.0% |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 6.969[a] | 4 | .138 | .139 |
| Likelihood Ratio | 7.452 | 4 | .114 | .119 |
| Fisher's Exact Test | 7.305 | | | .119 |
| Linear-by-Linear Association | .014[b] | 1 | .905 | .948 |
| N of Valid Cases | 204 | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.99.

b. The standardized statistic is -.119.

## University * Work environment challenges

**Crosstab**

| | | | Work environment challenges | | | Total |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | |
| University | Bethlehem | Count | 6 | 19 | 22 | 47 |
| | | % within University | 12.8% | 40.4% | 46.8% | 100.0% |
| | | Std. Residual | -.4- | .2 | .0 | |
| | Hebron | Count | 14 | 36 | 28 | 78 |
| | | % within University | 17.9% | 46.2% | 35.9% | 100.0% |
| | | Std. Residual | .6 | 1.1 | -1.4- | |
| | PPU | Count | 11 | 23 | 45 | 79 |
| | | % within University | 13.9% | 29.1% | 57.0% | 100.0% |
| | | Std. Residual | -.3- | -1.3- | 1.4 | |
| Total | | Count | 31 | 78 | 95 | 204 |
| | | % within University | 15.2% | 38.2% | 46.6% | 100.0% |

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 7.453[a] | 4 | .114 | .114 |
| Likelihood Ratio | 7.561 | 4 | .109 | .116 |
| Fisher's Exact Test | 7.460 | | | .111 |
| Linear-by-Linear Association | 1.004[b] | 1 | .316 | .346 |
| N of Valid Cases | 204 | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.14.

b. The standardized statistic is 1.002.

## University * Internal communication challenges

**Crosstab**

| | | | Internal communication challenges | | | |
|---|---|---|---|---|---|---|
| | | | No | To some Extent | Yes | Total |
| University | Bethlehem | Count | 14 | 18 | 15 | 47 |
| | | % within University | 29.8% | 38.3% | 31.9% | 100.0% |
| | | Std. Residual | .2 | -.5- | .4 | |
| | Hebron | Count | 18 | 40 | 20 | 78 |
| | | % within University | 23.1% | 51.3% | 25.6% | 100.0% |
| | | Std. Residual | -.8- | 1.1 | -.5- | |
| | PPU | Count | 25 | 30 | 24 | 79 |
| | | % within University | 31.6% | 38.0% | 30.4% | 100.0% |
| | | Std. Residual | .6 | -.7- | .2 | |
| Total | | Count | 57 | 88 | 59 | 204 |
| | | % within University | 27.9% | 43.1% | 28.9% | 100.0% |

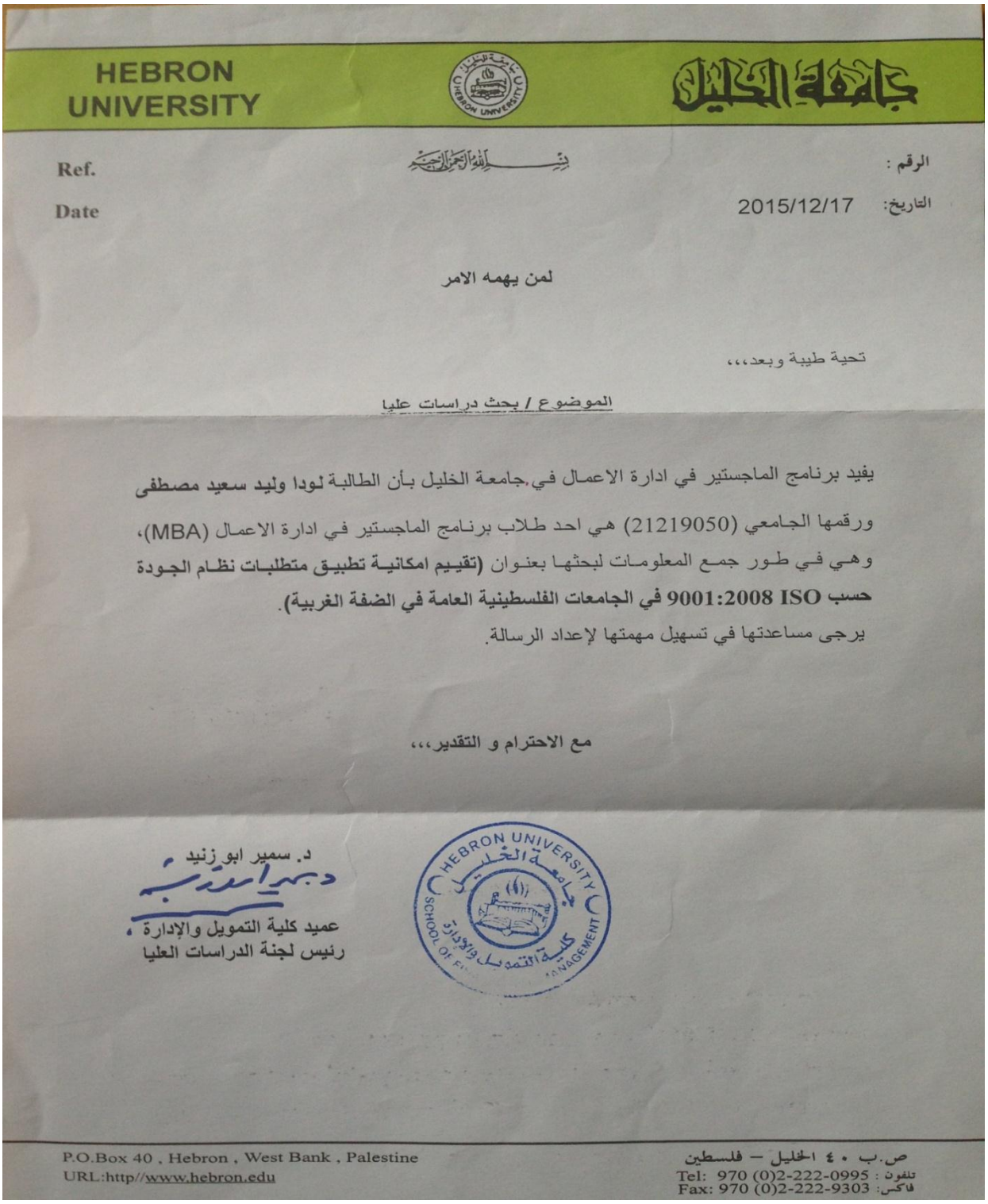
**Chi-Square Tests**

| | Value | Df | Asymp. Sig. (2-sided) | Exact Sig. (2-sided) |
|---|---|---|---|---|
| Pearson Chi-Square | 3.543[a] | 4 | .471 | .476 |
| Likelihood Ratio | 3.535 | 4 | .473 | .479 |
| Fisher's Exact Test | 3.545 | | | .474 |
| Linear-by-Linear Association | .077[b] | 1 | .781 | .810 |
| N of Valid Cases | 204 | | | |

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.13.

b. The standardized statistic is -.278.

# APPENDIX F



HEBRON UNIVERSITY

جامعة الخليل

بسم الله الرحمن الرحيم

Ref. الرقم :

Date التاريخ: 2015/12/17

لمن يهمه الامر

تحية طيبة وبعد،،،

الموضوع / بحث دراسات عليا

يفيد برنامج الماجستير في ادارة الاعمال في جامعة الخليل بأن الطالبة **لودا وليد سعيد مصطفى** ورقمها الجامعي (21219050) هي احد طلاب برنامج الماجستير في ادارة الاعمال (MBA)، وهي في طور جمع المعلومات لبحثها بعنوان **(تقييم امكانية تطبيق متطلبات نظام الجودة حسب ISO 9001:2008 في الجامعات الفلسطينية العامة في الضفة الغربية)**.

يرجى مساعدتها في تسهيل مهمتها لإعداد الرسالة.

مع الاحترام و التقدير،،،

د. سمير ابو زنيد

عميد كلية التمويل والإدارة ،

رئيس لجنة الدراسات العليا

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