

Determinants of Quality in Higher Education Institutions in Morocco

Youssef Loutfi, Al Akhawayn University in Ifrane, Morocco

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Abstract

In today's modern economies, education has become a crucial competitive differentiator. The quality of different products and services is hugely determined by how engineers, businesspersons, executives, managers, and educators think about and execute quality measures. Similarly, higher education (HE) in today's competitive world is driven by quality because of the growth and development of the global market of education. Although there are some voices that are skeptical about the outcomes of implementing the total quality management philosophy in an educational context, it argues in this paper that educational institutions are one of the most fitted platforms for the implementation of total quality management values.

Furthermore, the literature suggests a plethora of critical success factors with potential influence on quality management in higher education institutions (HEI's) with no universal agreement. Hence, this paper aims to identify the critical success factors of quality management in HEI's in Morocco. By using the Delphi Technique and university professors from eight different Moroccan public universities as panelists, this research revealed that top management commitment and responsibility, working environment, employee involvement, employee training and development, infrastructure, and cultural and organizational transformation ability are critical success factors of quality management in HEI's in Morocco.

It is hoped that this study will showcase to Moroccan decision makers that education is not a one size fit all matter and that we should stop projecting the French educational system into ours. The focus and challenges of each system are indeed widely different. Education is the most intimate national matter of all, and it should be treated at such in Morocco.

Keywords: Quality Management, HEI's, Critical Success Factors, Delphi Method.

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Introduction

Over the last two decades, quality management has become a focal point to many industries such as health care and manufacturing. In the past, the leadership style has been believed to be the most important quality management parameter that can lead to enhance the performance (Juhl, Kristensen, Kanji, & Batley, 2000). Today, the proliferation of IT, as well as the globalized business markets have brought the end quality of the produced product, or delivered services to center stage. Up after World War II, total quality management was not a commonly used concept. However, researchers and academicians pointed its importance as logical evolutionary step towards quality assurance, and subsequently total quality management. Currently, total quality management and quality management could be used interchangeably. They are defined as a long-term management approach to achieve a high degree of quality while meeting customers' expectations and managing organizations towards their quest to achieving excellence.

However, some researchers are skeptical of the outcomes of adopting the total quality management approach used in manufacturing, construction, tourism, or health care into education (McCulloch, 1993; Meirovich & Romar, 2006; Zakuan, et al., 2012). Chaston (1994), they advocate that such an approach would raise issues of trust and confidence among departments, which would hinder the implementation of total quality management in educational institutions. "Under these circumstances, it does not appear that, for the foreseeable future, British universities are in a position to adopt TQM philosophy" (1994, p. 114). Nevertheless, quality management from an educational standpoint is multidimensional. This involves management, social and technical systems, contributions of students as in/outputs, supportive administration and infrastructure, and finally, faculty members. Moreover, if educational institutions, specifically the higher educational ones that introduce, teach, and research total quality management would not be credible if these institutions would not be able to embrace and apply the quality management values themselves (Zakuan, et al. 2012). In addition, total quality management is a credible universal approach, that has been tested and proven by many firms in different sectors and industries, and it should at least be considered and tried in the education sector and at higher education institutions (HEI's) in particular.

Education in Morocco: Past vs. Present

After the Second World War, when today's developed countries were focusing all their resources on building their nations by focusing on education, Morocco was still under the colonization of both France and Spain. In 1956 when Morocco got independent, official reports estimated the illiteracy rate between 82% and 87% (El Baggari, 2014). After almost 60 years, the situation has improved, but still alarming, as the illiteracy rate is around 28% (UNESCO, 2014). The definition of literacy in Morocco is about the ability to read and write and does not include the use of IT or technologies (UNESCO, 2006).

In fact, the first article of the Moroccan Charter for Education and Training of 1999 has determined the principles, values, and objectives of the educational system that aim at producing virtuous citizen ingrained with morals of moderation and tolerance, open to science and knowledge and endowed with the spirit of initiative, creativity, and entrepreneurship. Meanwhile, article 10 of the character focused on the

integration of information communication technologies in the Moroccan educational institutions while focusing on the importance of e-learning. Hence, the ultimate objective was to provide education for all to contribute to the development of Morocco by strengthening the country on the social, economic, and human levels in an era marked by globalization.

Nonetheless, the 2014 report of UNESCO on the quality of the world's education systems has revealed disappointing facts. First, along with other North African countries, Morocco failed to deliver strong schooling to its citizens. Second, besides the emergency plan from 2009 to 2012 aimed at reforming the educational sector, no remarkable results have been yielded. Third, almost half of primary schools' students face serious difficulties in mastering basic skills such as reading and mathematics. Finally, Morocco ranks among the 21 countries suffering from poor education.

Education in Morocco: Globalization

The geographical location of Morocco, the free trade agreements, and globalization have made of Morocco an attracting platform for multinationals to establish their businesses. Among these multinationals, there are YAZAKI, Delphi, Renault, Bombardier, Microsoft, Dell, PSA Citroen Peugeot, and many other structures operating in different sectors. Indeed, these multinational companies are in need of qualified capital human who can act locally but think globally. Therefore, the educational sector in Morocco should follow the rhythm of the advancement of education globally.

In today's competitive environment, education is not anymore about learning, and acquiring skills, through attending educational institutions. It is a transformation process (Zakuan, et al., 2012). This transformation process is made up of inputs of students and academic & administrative personnel, the process comprises the teaching and learning methods & the administrative procedures, and the outputs embrace satisfaction & engagement in the job market. Hence, determining and understanding the critical success factors that play a great role in enhancing the end quality of this transformation process is a fundamental step that need to be undertaken. Furthermore, "due to open competition, students are becoming more customers as well as consumers and expected to pay a growing share of the cost of education" (Roffe, 1998, p 80), which implies that these students/consumers require a special attention to satisfy the current accounts and attract new ones through providing a quality product.

Literature Review

Quality Management

Quality is considered one of the most critical concepts to be defined (Golder, Mitra, & Moorman, 2012). The definition of quality varies depending on the perspective from which the person is defining it (Reid & Sanders, 2009). Still, the business world is said to be quality-driven since firms-manufacturers or service providers- are continuously looking forward to improve their quality to satisfy the increasing customers 'quality expectations. Consequently, which have transformed the market's structure based on quality (Golder, Mitra, & Moorman, 2012).

At present, there is no particular or distinct commonly agreed upon definition of quality as it could be defined as performance to standards or meeting the customers' needs. Moreover, quality could be defined as:

- **Conformance to specifications:** "How well the product or service meets the targets and tolerances determined by its designers" (Reid & Sanders, 2009, p 138). In fact, this definition could be interpreted as a degree of excellence of a product/service against some standards.
- **Value for price paid:** "Quality defined in terms of product or service usefulness for the price paid" (Reid & Sanders, 2009, p 138). As a point of fact, this definition is a mixture of economic sciences and matching or exceeding the customers' needs.

Coming up with one universal definition of quality is not straightforward, and over the last 30 years, quality became a decisive standard for the survival of businesses (Reid & Sanders, 2009). Accordingly, quality was the main concern of business practitioners as it was the ultimate motive behind the invention of new emerging concepts such as total quality management (Golder, Mitra, & Moorman, 2012).

Total Quality Management

Total quality management (TQM) is a management philosophy aiming to satisfy customers and improving the overall performance of the organization while focusing on the human capital and processes. TQM necessitates an efficient and effective management, coordination, and improvement of the business as a whole towards a full commitment and engagement to the customers' interests. In the global competitive environment, TQM is considered a strategic way for organizations to reach excellence. TQM incorporates the values of teamwork, cooperation, participation, continuous improvement, and trust that permit organizations operate in a favorable environment.

Critical Success Factors of TQM

The following are the diverse factors addressed by numerous literature sources dealing with quality management in educational institutions.

Top Management Commitment and Responsibility:

Top management commitment of HEI's is indispensable for successful implementation of quality management, as the role of senior decision makers is considered a vital player towards an effective implementation of any new initiatives. Top management inject positive attitude vis-a-vis the understanding of quality management importance in their organization. In the United States of America, top management of HEI's has introduced 77.4% of quality management principles implementation while top management of HEI's in Malaysia has introduced 75.9% of these principles (Kanji, Tambi, & Wallace, 1999).

Strategic Quality Planning:

Strategic quality planning is the process of efficiently and effectively allocating tangible and intangible resources in order to decide on strategies that would guide the decisions making process (e.g. Elmuti, Kathawala, & Manippallil, 1996; Mehralizadeh & Safaemoghaddam, 2010; Ho & Wearn, 1996). In the context of

higher HEI's, strategic quality planning requires defining the vision and the mission statement of the HEI's. The importance of the vision statement as a vital component of quality planning entails that HEI's that care about quality management principles need to have a quality management vision that should be projected in its vision statement.

Working Environment:

Working environment refers to the tangible and intangible conditions needed for employees to perform their tasks, and in an educational context, working environment refers mainly to teamwork environment, openness and effectiveness of communication, and hierarchy within an educational institution (Elmuti, Kathawala, & Manippallil, 1996; & Zakuan, et al., 2012). Teamwork within HEI's can tie the effort of all the staff of an institution for improving quality. Furthermore, working environment embraces open and effective communication. Not only does effective communication take place within the institution itself, but also it should be within all the stakeholders (Zakuan, et al., 2012). In fact, communicating within the institution could be problematic when horizontal communication approach is used rather than vertical since communication loses both clearness and momentum. Hence, it appears the importance of flat hierarchy and break down barriers in boosting collaboration rather than competition.

Employee Involvement:

Human resources are considered the most valuable assets that make the difference between an organization and another one since the produced products, delivered services, or the process could be replicated. However, great importance to the alignment of people with the organization's objectives and goals is tremendous for successful implementation of quality management principles through empowering employees to take part in the decision-making process, and the development initiatives depending on their levels within the organizations.

Such a process is described by Zakuan, et al., (2012) as a psychological process to establish confidence among the different players of any organization aiming to inject quality management principles.

Employee Training and Development:

Sahu, Shrivastava, & Shrivastava (2012, p 66) define employee training and development as "acquisition of knowledge, skills and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies". Indeed, Quality-related training for employees is considered a vital pillar in an effective and efficient implementation of quality management values, as it is part of the continuous process of people management.

Infrastructure:

In an educational context, infrastructure plays a vital role in transferring knowledge and its role consists mainly in facilitating this transfer of knowledge to students, which empowers the interaction and exchange among students, professors, and external environment. Determining the required infrastructure for achieving quality management is stochastic, as it differs depending on the nature of the educational institution itself. For instance, the needed infrastructure for technical institutions is not the same as for business institutions. However, there are some common infrastructure that are pre-requisite for achieving quality management in HEI's such as catering

facilities, internet availability, teaching supports (Boards, computers, Projectors...), nursing facility, housing, sport facility, etc. For sustainable development of the educational institution, infrastructure such as library with sufficient and adequate number of books, access to online journals, and periodicals, in addition to research and development center is a prerequisite for achieving customer satisfaction in order to reach high level of quality management in HEI's.

Customer Satisfaction:

The focus of Customer satisfaction in HEI's should be on the expectations of the learners and stakeholders. Furthermore, Mehralizadeh & Safaeemoghaddam (2010) have classified customers of HEI's into four categories that are at the same time complementary and mutually exclusive, which are governments, academics, administrators, and the actual customers (students in HEI's, their families, and the society as a whole). On one hand, these four groups of customers of HIE's are complementary since institutions are required to come up with strategies that gratify the needs of all these four categories. On the other hand, satisfying the desires and needs of the numerous HEI's' customers could be challenging and hard to be realized, as the desires could be different.

Cultural and Organizational Transformation Ability:

The adoption of a new philosophy driven by quality management dimension requires a cultural and organizational transformation. As discussed earlier, quality management approach in HEI's involves elements such as strategic quality planning, changing the working environment, employees' involvement, and customer's satisfaction. Meanwhile, "HEI's have deep-rooted traditions dating back several centuries, which cause them to resist change." (Sirvanci, 2004, p 383). Hence, the focus on the products should shift to the market by assessing the market needs and adapt to the continuous changes. Moreover, the cultural and organizational transformation ability is reflected as well in the re-designing the organizational structure of the higher education institution by moving from the horizontal structure to departmental structure that provide more flexibility in terms of the cooperation among departments for the benefit of the organization itself. Besides, the importance of cultural and organizational transformation ability is perceived in the ability of the higher education institution to establish an atmosphere based on cooperation rather than competition by instituting an attitude based on "us" rather than "them" (Winn & Green, 1998).

Continuous Improvement:

Anderson, Rungtusanatham, & Schroeder (1994, p 480) define continuous improvement as "the propensity of the organization to pursue incremental and innovative improvements of its processes, products, and services". Continuous improvement could be seen as the wheels while the educational institutions as the vehicle. Hence, the effort generated by the wheels throughout continuously caring about quality would participate in making the institutions achieved quality via successfully implementing quality management principles. Indeed, continues improvement necessities the contribution of all the players to achieve good liaisons with customers and effective innovative organizational development.

Monitor Progress:

Monitoring progress regarding quality management systems encircles different components including self-assessment, internal audits, benchmarking, managing by process, measurement, information and analysis, and accreditation of the quality management system (O'Mahony & Garavan; 2012). Still, self-assessment is a vital measurement for monitoring progress along with various approaches such as benchmarking, or PDCA method (Plan-Do-Check-Act). Nonetheless, in the higher education framework, internal audits and constructive feedback from students and corporate leaders are considered the most valuable methods to monitor progress since it permits to have a holistic view and tackle the situation from different angles.

Research methodology

The Delphi Technique was employed in this study. The two-round questionnaire on Quality Management in HEI's in Morocco were administrated while interviewing 14 university professors from eight different Moroccan public universities to gather data. Corresponding statistical analyses were applied to obtain the conclusions in order to reach the research objectives.

General description of the Delphi Method

Delphi technique has been developed in the 1950s by RAND corporation (e.g. Anderson, Rungtusanatham, & Schroeder, 1994; Hsu & Sandford, 2007). "It is a widely used and accepted method for achieving convergence of opinion concerning real-world knowledge solicited from experts within certain topic areas" (Hsu & Sandford, 2007, p 1). Delphi method is a holistic approach to deal with multipart subjects; it operates on the principle that a number of experts' opinions are better in delivering subjective rational consensus on a given topic than one expert (Weaver W. T., 1971). Delphi is used to assemble opinions on a precise topic from a number of experts called panel until the achievement of an agreement and consensus on the researched subject. The combination of several judgments of people can increase the chances of approaching the truth (Clayton, 1997). It also helps solving complex problems and not well-defined as well as understanding social phenomena.

The following figure summarizes the different steps required for the application of Delphi technique- the classical Delphi.

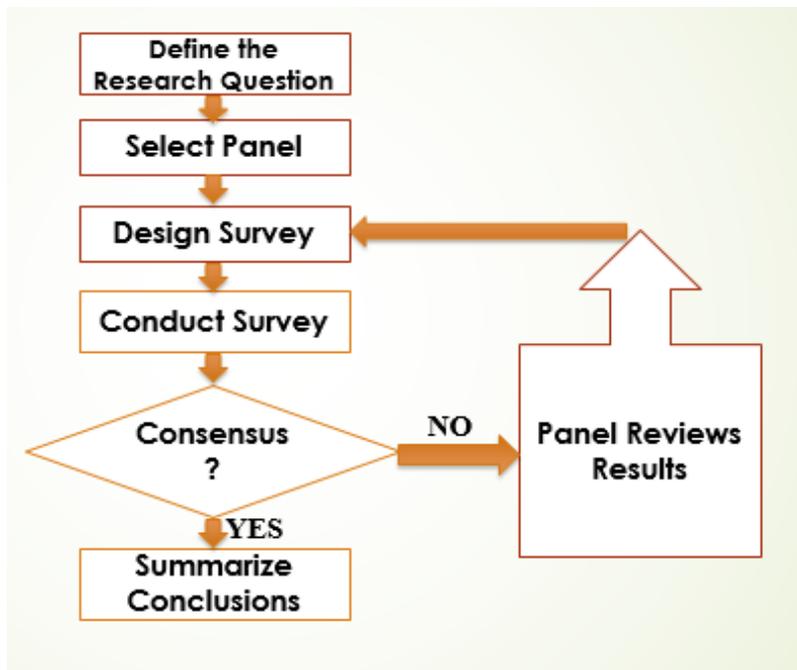


Figure 1: Steps of Implementing of the Classical Delphi Technique

Participants

The selected experts are part of the Moroccan educational system belonging to HEI's, which are university professors. The Delphi technique presents some flexibility in terms of selecting experts as there are no agreed upon characteristics for the selected panel of experts in the literature (Hsu & Sandford, 2007). Skulmoski, Hartman, & Krahn, & Krahn (2007) have come up with three different expertise requirements that each potential expert should meet in order to be eligible to participate in the study. First, the potential expert needs to have the knowledge and be familiar with the topic of the research study. In addition, the expert needs to be willing to participate and be committed to take part of the different rounds, which leads us to the third requirement that is the availability of enough time for the expert to respond to the multi-questionnaires. Similarly, Delbecq, Van de Ven, & Gustafson (1975) have categorized the eligible potential experts for the Delphi technique into three categories:

- ✓ The upper layer of management that could benefit from the endings of the Delphi study.
- ✓ "The respondents to the Delphi questionnaire whose judgments are being sought" (p. 85).
- ✓ Any member concerned with the Delphi study.

Hence, based on the above definitions, criteria derived from the literature dealing with Delphi method, and the flexibility of the technique concerning the choice of experts, another criterion has been added to determine the most appropriate and useful panel of experts in this study, which is access to the potential eligible panelists.

Number of Participants

Contrary to other ways of collecting data, Delphi technique does not take into consideration saturation. Still, the literature does not specify any specific number of experts, as there is no agreement on the optimal number of panelists (Delbecq, Van de Ven, & Gustafson, 1975). Hsu & Sandford (2007) stated that the upper limit of the selected sample size is thirty; however, a panel made up of four experts is undoubtedly too small, and panel of experts between ten and twenty is a rational

choice. In addition, Clayton (1997) states that the size of the panel might vary widely since there is no consensus about the number of panelists that should be included. Nonetheless, it is preferable to apply the rule of thumb of fifteen to thirteen panelists if the experts are homogeneous (Clayton, 1997). However, Ziglio (1996) claimed that ten to fifteen experts are enough to endorse the credibility of the results in a homogeneous group.

Hence, a sample size of fifteen experts is used to collect the needed data for further analysis and investigation.

Procedure for Data Collection

Data was collected by contacting experts in HEI's in Morocco using e-mail. The data collection phase was divided into three sub-phases, which are brainstorming, narrowing down, and finalizing the list. The figure below explains in details the administration procedures for designing questionnaires and data collection.

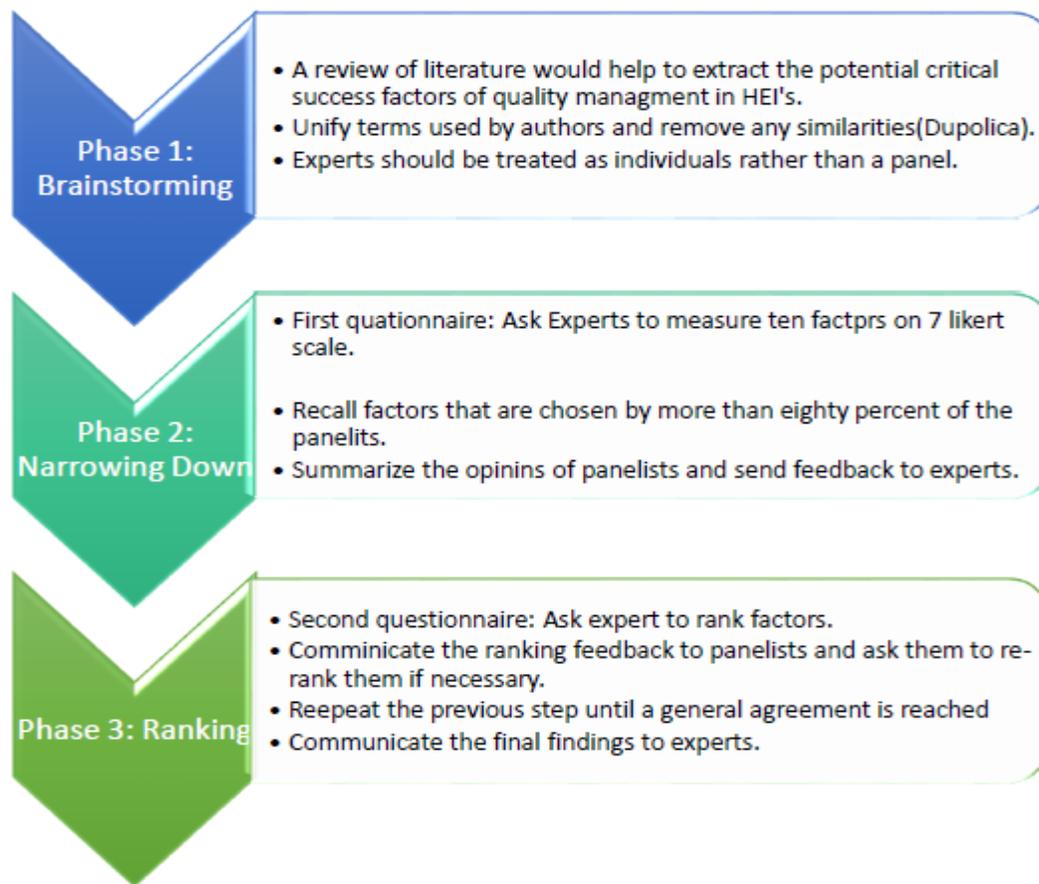


Figure 2: Administration process for Delphi method

Preparation of Questionnaires

The first questionnaire was designed based on the factors derived from the literature review of quality management in educational institutions. A 7-point Likert agreement scale was chosen to measure the importance of the factor for quality management in HEI's. Meanwhile, the questionnaire of the second iteration was designed by referring to the results of the first survey. The objective of this questionnaire was to rank by importance the selected critical factors from the first round.

Distribution of Questionnaires

The distribution and assembly of the questionnaires of both rounds were done via e-mail.

First Questionnaire Analysis:

The analysis of the first questionnaire was done using Microsoft Excel by calculating the mean of each factor and the agreement percentage. Agreement was determined if the mean of the responses of each factor is 80% or more (Hsu & Sandford, 2007). However, The analysis of the second questionnaire was done by determining the frequency of ranking of each critical success factor.

Findings

The table below presents the results of the two questionnaires of Delphi rounds:

	Consensus in %	Ranking
Top Management Commitment and Responsibility	82.14	1
Working Environment	80.10	4
Employee Involvement	80.61	5
Employee Training and Development	81.83	6
Infrastructure	81.63	2
Cultural and Organizational Transformation Ability	82.14	2
Strategic Quality Planning	68.37	-
Customer Satisfaction	66.33	-
Continuous Improvement	56.12	-
Monitor Progress	66.33	-

Table 1: Summary of the results of the Delphi Rounds

Conceptual Model



Figure 3: Conceptual Framework

Discussion

First, the outcomes of this study are destined both to higher education institutions' decision makers, as well as to academic researchers. For education institutions' decisions-makers, this study will allow them to pay attention and focus on the most important factors of quality management, so as they can allocate more resources to these factors. This will, thus, enhance the quality of education in higher institutions in Morocco.

On the other hand, from an academic standpoint, this research would be a contribution in the literature review of quality management in education, and it could serve as a starting point for further researches.

Second, this study will show once and for all that education is not a one size fit all matter. For decades now, (ever since) Morocco has gained its independence, many education changes and reforms have been implemented. While they all might look different, the one thing they have in common is that they are taking the French system and projecting it into Morocco. The focus and challenges of each system are widely different. So from this perspective, the results of this study can serve as a convincing argument for decision makers to reconsider their strategy. Education is the most intimate national matter of all, and it should be treated as such in Morocco.

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