

ALIGNMENT OF TOTAL QUALITY MANAGEMENT IN THE HIGHER EDUCATION CONTEXT

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Article History

Received: 15/11/2019

Accepted: 20/02/2020

Published: 20/3/2020

Keywords

Total Quality Management,
TQM, teaching and learning,
holistic quality model, higher
education

ABSTRACT

This paper aims to adjust the concept of Total Quality Management (TQM) and make it fit for use in higher education institutes. The article describes the results of a design science research. Based on experiences in Egypt and the Netherlands, the characteristics of higher education are defined as well as the specifics of educational processes. These lead to a translation of TQM in educational terms. The experiences result in a model that can be used as framework to implement TQM in higher education institutes. The experiences that form the base for the design are limited to two countries with two different cultures. There is no evidence concerning the use of the model in any other country in the world. It is known that there have been many initiatives to implement TQM in higher education. The combination with quality management in teaching and learning models (Transformative Mode, An Engagement Model of Program Quality, University of Learning Model, A Model for a Responsive University) is scarce as well as application in two such different countries.

1. INTRODUCTION

Nguyen Huu Cuong et al. (2017) draw five lessons learned from the establishment and development of Vietnam's accreditation. Lesson 5 relating to building quality culture and developing internal quality assurance system is crucial for institution's quality enhancement. Building a quality culture, they state, always goes with developing an internal quality assurance system within an institution. Internal quality assurance using TQM and its European equivalent the European Foundation for Quality Management Excellence Model started in Western countries almost 50 years ago and generated great interest in most firms in the beginning. Grant et al. (1994), Dalrymple & Drew (2000) and Yeung et al. (2006) emphasise that TQM means a paradigm shift. One of the most distinguishing factors of TQM companies mentioned is the centrality of the human or 'soft' factor in the way to continuous improvement.

TQM had its ups and downs (Hermel, 1997). Interest declined in the end of the eighties and revived in the beginning of the nineties of last century. At the moment TQM is still in practice, often next to new methods like lean management and Six Sigma. Although research on TQM reports mixed results, the main tendency is that TQM is said to work, that it actually improves the quality of the business. "Continuous improvement and problem prevention significantly enhance job satisfaction and organizational commitment" (Karia & Assaari, 2006, p. 30). According to Ooi et al. (2007), where teamwork was perceived as a dominant TQM practice, improvements in job satisfaction levels were significant. TQM has been successfully implemented in different contexts, in manufacturing as well as in services (Sureshchandar et al., 2001), in Western countries as well as in emerging countries (Martin and Weill, 2000) or in Arabic countries like Qatar (Al-Khalifa and Aspinwall, 2000), Yemen (Al-Zamany et al., 2000) and Egypt (e.g. Elghamrawy and Shibayama, 2008; Salaheldin, 2003).

It is important to know what factors influence the success of TQM. One of the main critical success factors for TQM implementation reported in scientific research is that senior management should be committed (Bayaktar et al., 2008; Bin et al., 2009; Chowdury et al., 2007; Evans, 1995; Soltani et al., 2008). Hirtz et al. (2007) specify this (for administrative/ service organizations) by saying that transformational leadership appears to be critical in the successful implementation of quality management. Furthermore, there is broad consensus that employees need to be involved (Bayaktar et al., 2008; Bin et al., 2009; Chowdury et al., 2007; Gatchalian, 1997; Hoogervorst et al., 2005; Krüger, 1998; Ooi et al., 2007; Sun et al., 2000; Rahman, 2004; Yen, 2003) or that there should be strong internal

motivation (Van der Wiele et al., 2000). These factors can be summarized in the need for *Commitment*. There should be emotional involvement to the implementation (Van der Wiele et al., 2000) or - in a broader sense - a quality *Culture* (Fuchs 1993). Fuchs (1993) adds the lack of focus on strategic planning as roadblock for companies that strive to use TQM for competitive advantage. Bayaktar et al. (2008) mention the importance of a vision. We here call this factor *Concept*, which includes a company's mission, values and vision.

Commitment, Culture and Concept are the drivers for the Paradigm Change if the company and its TQM system fits to the Context. Sousa & Voss (2001) strongly suggest that process quality management practices are contingent on a plant's manufacturing strategy. They argue that rigorous academic studies have raised doubts as to the universal validity of the whole set of quality management practices. Conti (2007) calls this the contingency view and states that adaptation of the model to the characteristics of the organization should be always pursued. This leads us to our theoretical construct, *The Van K. Esawi Tower of TQM* (see Figure 1). The authors aim to adjust the concept of TQM to higher education institutes and make it fit for use there, based on the theoretical construct provided by the *The Van K. Esawi Tower of TQM*.

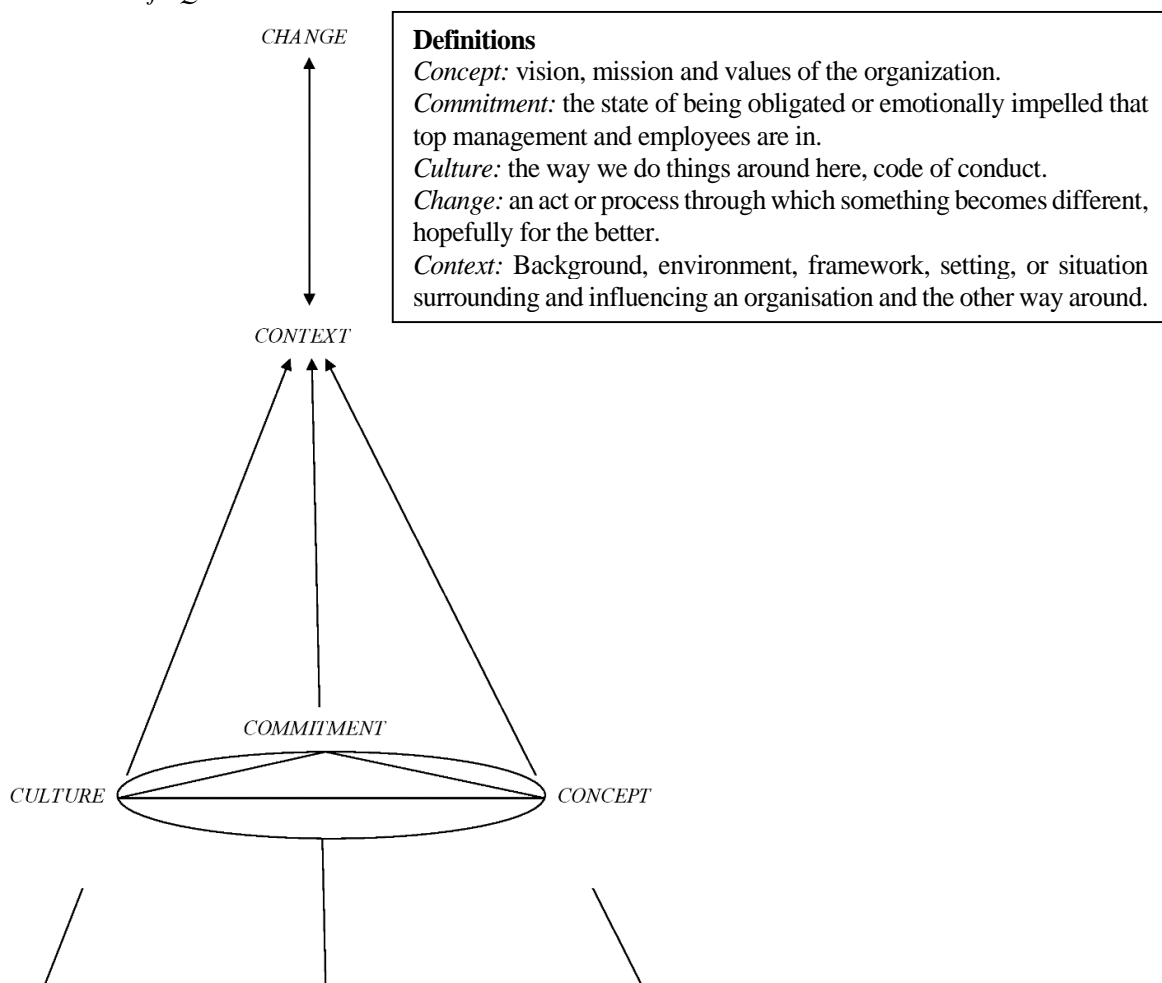


Figure 1. *The Van K. Esawi Tower of TQM*

2. LITERATURE REVIEW

All over the world, the pressure on higher education institutions caused by expansion and increase in student numbers, cultural diversification, cuts in funding levels and accelerated changes reflected drastically in the society needs and marketplace requirements. To find answers to these challenges management cultures from the business and manufacturing industry are imported into the public sector generally and higher education in particular. This constitutes the challenges inherent in defining, developing, and demonstrating a TQM model in colleges and universities. TQM has been implemented in educational settings with mixed success (Bergquist et al., 2005).

The resistance is strong (Koch & Fischer, 1998; Minelli et al., 2008; Temple, 2005). That leads Harvey (1995, p. 135) to conclude: “There is no overwhelming evidence that, in the higher education context, TQM does you good”. Sirvancy (2004) focuses on the difficulties, but stays positive. Weller and Hartley (1994) stress the usefulness of TQM for higher education. Pupius (2002) and Van Kemenade et al. (2004) developed models for higher education based on the European Foundation for Quality Management Excellence Model. The latter, originally Dutch, has been translated into English, German, Czech, Latvian, French, Spanish and even Vietnamese. Motwani and Kumar (1997) report improved communication, higher employee morale, increased productivity, improved process efficiency and reductions in defects and costs. Lagrosen (1999) mentions greater job satisfaction, better communication, enhanced co-operation between departments and improved leadership. Saktival et al. (2000), Wiklund et al. (2003), Hides et al. (2004), Agarwal et al. (2011) all report positive results as well.

Critical factors mentioned in the higher education context fit into *the Van K. Elsayi Tower*. Some research states the importance of *commitment* of the top management (Van Kemenade, 2010; Van Kemenade & Hardjono, 2010; Van Kemenade et al., 2011; Sakthivel, 2000; Schaik et al., 1988). Also *commitment* of educational staff is mentioned (Crawford & Shutler, 1999; Kemenade, 2009). The *culture* is important (e.g. control and improvement should be separated, Kemenade, 2009, 2010). Ali et al. (2010) mention visionary leadership (part of “*concept*”) as one of the critical success factors. One of the main issues in the research to make TQM in higher education work is it should be adapted to the *context* (Carter & Swanwick, 2006; Davies, 2004; Helms et al., 2001; Kwan, 1996; Osseo-Asare & Longbottom, 2002; Pupius, 2002; Schaik et al., 1998; Taylor & Hill, 1991; Zink & Voss, 1999).

Design method: Adjustment to the educational context. The argument sought here is to define the TQM model that can be applicable in the higher education context. An ‘ideal educational system’ should incorporate the following ‘learning insights’:

- Learning is about *transforming* the student into a flexible thinker;
- Learning occurs all the time; all situations are therefore a *learning opportunity*;
- Learning occurs best in the context of a *compelling present problem*;
- Frequent *feedback* reinforces learning effects;
- Learning occurs best in an *interpersonal context*, working harmoniously with others, etc.

However, the problem lies in the very fact that at the organization level, a typical university in the many countries is not yet ready to respond to the above-mentioned requirements. Their pattern of approach seems to be characterized by the following:

- Academic programs tend not be student-centred;
- Lack of systemic thinking, consistent leadership for change and continuing approach for improvement.

As a result, curriculum and instructions are not clearly conducive for producing learning gains, as characterized by a debilitating fragmentation of learning experiences. Instructional paradigms which feature only individual work undermine the positive results on the effectiveness of collaborative learning. There is minimal feedback on performance. In addition to its focus on the continuous improvement principle, TQM also focuses on the principle of customer satisfaction. Although some academics are uncomfortable with the idea of students as customers, few would argue that we listen enough to our students, and fewer still would assert that we cannot improve our programs and services by seeking evaluations from our students.

That is why the enthusiasm of the academics to TQM has never been very high. Therefore, the only logical conclusion one can arrive at in relation to a model for quality management in higher education is that it would have to be more holistic to flexibly address service and pedagogical aspects uniquely.

The need for distinct approaches to the service and teaching areas of higher education proposed is based on their distinctiveness of emphasis. In the service areas, student is clearly the customer and is the focus of all processes. In teaching and research, students play the key role of a participant and the focus is on the attribute of their learning, as determined by:

- The global parameters of content and resources governing the curriculum design, and
- The subtle parameters of delivery and assessment governing the ‘enhancement’ of the learner.

TQM addresses the service areas, focusing on the products of delivery by measuring, monitoring and continuously improving the processes. Quality management of teaching and learning (QMTL), on the other hand, focuses on the empowerment of the course team across all the boundaries to facilitate a dialogue centred on learning. The techniques of TQM are well understood and documented in the industry practice whereas those of QMTL are

rooted in the educational research literature, illustrated initially on the basis of a synthesis of the following four models *Transformative Model, An Engagement Model of Program Quality, University of Learning Model and A Model for a Responsive University*.

In spite of the structural difference in the scope of the two models, there is a substantial commonality of requirements in the implementation phase. First of all, their focus on students albeit to differing levels of subtlety. Secondly, at the operational level, collaboration is a key requirement in both models although the fields of interaction may vary to a large extent. Both models also require a visible commitment and support from the senior management to effectively continue to flourish. Thus, by and large, the pattern of interaction and governance required for both the approaches is the same. Al-Mazrooa et al. (2010, p. 106) state that “While each model cited in the previous section has its own unique perspective on educational quality in a university, it is necessary to examine them more closely to see if they can be described by a generic model for quality management”.

3. METHODS AND RESULTS

3.1. Methods

In this article, a literature review has been executed, using the berry-picking technique (Bates, 1998). This technique of literature search is much closer to the real behavior of information searchers than the traditional model of information retrieval is, and, consequently, will guide our thinking better in the design of effective interfaces.

This term is used by analogy to picking huckleberries or blueberries in the forest. The berries are scattered on the bushes; they do not come in bunches. One must pick them one at a time. One could do berrypicking of information without the search need itself changing (evolving), but in this article, the attention is given to searches that combine both of these features (Bates, 1998, p. 1).

Thereafter the data has been analysed and discussed between the authors, leading to a new model for quality management in higher education.

3.2. Findings

The literature search led to characteristics of TQM in higher education, 6 components of the comprehensive quality model and finally to a framework for TQM in higher education.

3.2.1. Characteristics of TQM in higher education

Having laid out an exploration of both the above-mentioned models, we designed a comprehensive quality model that is characterized by:

- A reconciliation or sound blend of TQM and quality models (Transformative Model, An Engagement Model of Program Quality, University of Learning Model, A Model for a Responsive University), based on more integrated and interdependent system or process.
- Embracing the cultural and contextual variations through developing a conducive culture and empowering environment adaptive to new developments and changes.
- Mandatory assessment and selection process pretesting the program entrants (students) to measure their background knowledge and skills to fit with the selected programs requirements.
- A focus on the marketplace requirements to ensure the responsiveness of programs outcomes and students' knowledge and skills are responsive to these demands and requirements.
- Constant feedback and evaluation of all components for perusing an overall continuing improvement.
- Effective institutional engagement with community stresses its external relationship and interaction.

3.2.2. Components of the comprehensive quality model

The comprehensive quality model has 6 components embedded in the context, culture and commitment: educational inputs, educational objectives, connected program requirements, student experience, learning outcomes and evaluation and continuous improvement.

1. Educational Inputs

The educational inputs refer to:

- Diverse and engaged participants highlighting the pivotal role that the faculty, students and leaders play. Assessing their backgrounds, traits and needs using appropriate selection tools are mandatory.
- Leadership defining the company's concept (mission, values and vision).
- Adequate educational resources: nature of facilities and support for students, faculty and basic infrastructure.

2. Educational Objectives

The educational objectives refer to statements that describe career and professional accomplishments that the learning is preparing graduates to achieve. (National) Academic Reference Standards and intended learning outcomes based on external context analysis. Intended learning outcomes are statements that describe what students are expected to learn and be able to apply by the time of graduation (knowledge, skills and attitude).

3. Connected Program Requirements

The connected program requirements that refer to curriculum development and within course development, e.g. leading to course manuals.

4. Student Experience

The student experience refers to:

- Interactive teaching and learning classrooms experience.
- Interpersonal context.
- Out- of-class experiences including: co-curricula, internships and support services.
- Research.

5. Learning Outcomes

The learning outcomes are subject to performance criteria that are specific measurable statements identifying the performance(s) required to meet the outcome, confirmable through evidence (e.g. in the quality of the thesis). Besides, learning outcomes refers to:

- External relationships including social engagement with communities.
- Achieving the stated outcomes of the learning process and reaching out to the community through effective relationship and participation will help, among other things in boosting the organizational ranking (*employer ranking*) that consider measures of research excellence and/or influence and social engagement, student choices, eventual success and others.

6. Evaluation and Continuous Improvement

Evaluation and continuous improvement is the core of TQM. In this case it refers to:

- Assessment and evaluation: collection, analysis and interpretation of evidence.
- Feedback for continuous improvement.

The design principles led to a *Framework for a Quality Model in Higher Education* (see Figure 2).

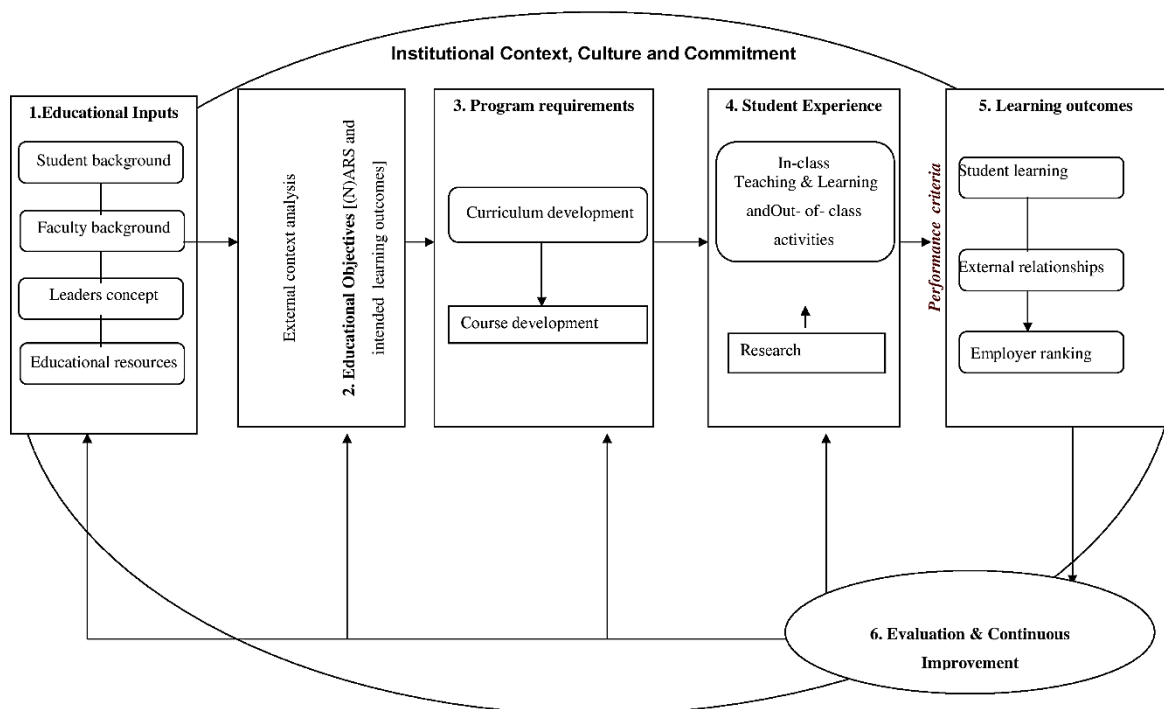


Figure 2. Framework of Quality Model in Higher Education

4. DISCUSSION AND CONCLUSION

The proposed framework has been developed specifically for use in higher education. However, it might be applicable to other sectors of education as well. It was based and used mainly in two countries, Egypt and the Netherlands. It is interesting to see that it can be applied in those very different cultures. That might point to a possible universality of the framework. That would need further research, such as in an Asian country like Viet Nam to be verified. The framework developed can be used as a guideline for self-assessment. On each of the 6 components within the culture, context and commitment, a Deming cycle can be applied. It will be familiar to the academic and evoke less resistance than the manufacturing terminology like “processes”, “customers” and “suppliers”. Experiences with similar adjustments (Van Kemenade et al., 2004; Pupius, 2007; Schaik et al. 1998; Shaktivel & Raju, 2006) support this proposition.

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