Identification of Attributes of TQM in an Educational Institute: A System Model

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ABSTRACT
This paper examines and proposes a list of attributes of Total Quality Management (TQM) in an educational institute, and develops a model for the benefit of researchers and academicians. Even though there have been a large number of papers published related to TQM, none of the papers focused on documenting the attributes of TQM in educational institutes using statistical methods. The paper investigates and lists 42 attributes of TQM in educational institutions. A quantitative study, involving the administration of a survey was conducted. The survey instrument consisted of 42 items and was prepared on the basis of attributes of TQM found during Literature Review. The application of Factor Analysis technique is illustrated for grouping the various attributes into Factors. The results of this study will help in a smoother penetration of TQM programs in educational institutes. The period of study is from 1995-2006. Considering the gamut of publications, TQM implementation has seen a steady growth and appears to be heading towards its maturity level.

Keywords: Educational Institutes, Factor Analysis, Literature Review, Total Quality Management, TQM Attributes

1. INTRODUCTION
The word “TQM” becomes the fundamental element or survival necessity for the growth of any manufacturing/service organization. TQM enhances competitiveness and focuses on improving the overall efficiency of an industry that can be achieved by continuous improvement at all levels (Kanji & Asher, 1993; Dean & Bowen, 1999; Hanjoo Yoo, 2003).

Though TQM has its roots established predominantly in manufacturing industry, there has been a strong push for adopting TQM in educational institutions (Owlia & Aspinwall, 1998; Moreland & Clark, 1998; Srikanthan & Dalrymple, 2004; Telford & Masson, 2005). Many researchers (Brigham, 1993; Susan, 1995; Koch & Fisher, 1998; Bath et al., 2004; Peat et al., 2005) feel that the principles of TQM can definitely contribute to the improvement of education.

Due to rapidly changing technology, increasing costs, accountability by accrediting
associations, legislatures, funding agencies and the public (Fincher, 1994; Green, 1994; Johnston, 1996; Lozier & Teeter, 1996; Shields, 1999), there is also a growing international competition with regard to student enrolments, faculty expertise and research achievements. Johnston (1996) argues how these get addressed when there is quality in teaching. Owlia and Aspinwall (1996), in their survey, have reiterated that economic and legislative forces are pushing education into a new environment and in such an environment; adopting TQM is a "natural" phenomenon. In education, TQM is considered as a process-oriented approach for increasing productivity, decreasing costs and improving quality of service (Johnson, 1993; Fincher, 1994; Green, 1994; Moreland & Clark, 1998). From the theories of TQM, one can conclude that it stresses teamwork, finding better ways to do things, sharing responsibility and dramatically improving institutional cultures, all of which fall well in line with the value set of many modern universities and their faculties.

The abundance of research work done in the area of TQM in manufacturing sector is reflected through the fact that numbers of literature review papers are available covering factors for TQM implementation in industry (Benson, & Schroeder, 1988; Flynn, 1994; Anderson, 1995; Tamimi, 1995; Ahire & Golhar, 1996; Black & Porter, 1996; Quazi & Padibjo, 1998; Lee & Quazi, 1999; Rao, 1999; Saraph, Ismail Sila, & Maling Ebrahimpour, 2002). Research work is also available for implementation of TQM in service sector viz. Banking (Cheng et al., 1996; Mellaht & Eyuboglu, 2001), Health Care (Motwani, 1996).

The present work is focused on implementation of TQM philosophy in education. The valuable research is available in this area in form of:

- Identification of factors (Owlia & Aspinwall, 1996),
- Implementation of TQM in education(Anderson, 1995; Sirvanci, 2004),
- Measurement of quality in an educational institute (Maureen, 2001, Warn & Paul 2001; Rodgers & Ghosh, 2001; Widrick et al., 2002),
- Model development (Ho & Wear, 1995, 1996; Cheng & Tam, 1997; Michael & Sower, 1997; Srikantam & Dalrymple, 2002).

The current work analyses the literature on TQM attributes in educational institute, from 1995 -2006 through 25 journals and 91 numbers of papers. Apart from clubbing the attributes and grouping the attributes in 6 key factors using factor analysis, the work further develops a system model for evaluating impact of TQM in educational institute.

The paper is organized as follows: initially after presenting the objectives of the present study, details of the study including search methods, the variables, measures and inquiry process, analysis and its discussion are presented. This is followed by the model for the evaluation of quality in educational institute. Finally, conclusions of the study are presented.

2. OBJECTIVES OF THE PAPER

Objectives of this paper are to investigate and report as follows:

- Compilation of the attributes reported by various studies that correlated the quality, educational performance of the institute with performance of the students in the external environment.
- Development of a System Model for evaluating impact of TQM in educational institute. A system model is the conceptual model that describes and represents a system, which is a set of interacting or interdependent system components (called as sub-systems) forming an integrated whole.

The rationale of this paper is to identify and propose a list of attributes of Total Quality
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