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Total Quality Management: A Literature Review

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Abstract:
Today what is called as Total Quality Management (TQM) is the outgrowth of a long term development dating back to Frederick Taylor's efforts in the 1920s' to evaluate and improve the quality of manufactured goods. Following Taylor's efforts, the next major improvement came with the introduction of statistical quality control procedures as pioneered by the Bell Telephone Labs in the 1940s. This effort was, in turn, followed by Demming's work with quality assurance. Demming focused on continuous improvement and the elimination of waste. Ultimately, quality assurance efforts began to broaden so that they became a concern of all management and led to the TQM approach used today.

What is Quality?

Quality has various meanings attached and the focus varies from one educational setting to another. Crosby (1979) defines quality as "conformance to requirement" while Juran and Gryna (1980) define quality as "fitness for use". Deming's (1986) definition of quality as "a predictable degree of uniformity and dependability at low cost and suited to the market" is more towards quality in operation. Many organizations found that the old definition of quality, "the degree of conformance to a standard", was too narrow and consequently have started to use a new definition of quality in terms of "customer focus". It is reported that many companies had initially concentrated all their efforts on improving internal processes with little or no regard for the relationships between those processes and the organisation's ultimate customers (Brigham, 1993). This failure to include the customer focus had resulted in companies struggling hard to survive and resorting to fire-fighting situations. In the context of higher education, due to the intangible nature of their processes, there is considerable discussion on the notions of educational quality (Green, 1994 and Harvey, 1995). Fincher (1994) describes how quality perspectives have evolved in higher education over the years by going through a shift from experience to technique to style and finally to process.

The need to develop "local" definitions:

However, there is little exploration of "quality" in a higher education context Harvey, 1998. Discussion that might promote attention to Elton's (1992) (cited in McKay and Kember, 1999) "quality Es" – enhancement, empowerment, enthusiasm and excellence – has been overshadowed by compliance with external agencies' definitions of "quality As" – assurance, accountability, audit and assessment. Such pre-eminence of compliance practices.

Total Quality Management:

Accoring to Capecio and Moorehouse Total Quality Management refer to: "*A management process and set of disciplines that are co-ordinated to ensure that the organisation consistently meets and exceeds customer requirements. TQM engages all divisions, departments and levels of the organisation. Top management organises all of its strategy and operations around customer needs and develops a culture with*

high employee participation. TQM companies are focused on the systematic management of data in all processes and practices to eliminate waste and pursue continuous improvement."

The idea behind TQM is that much can be achieved by innovation, but competitive advantage is largely affected by continuous process improvement. To implement this practice commitment is necessary that includes a plan of action. As Capecio and Moorehouse indicate, commitment means being the best you can be in your job as well as looking for opportunities to improve the work. While applying TQM philosophy to their organizations, some managers think that quality is driven by internal productivity programs or participative management programs which may deviate from their core business and customer focus resulting in cost overruns.

Quality of Education:

Quality of education is becoming important in the world of competitive environment. There is definitely a need to adopt change in the educational processes in order to improve and stay healthy in the business of education. Realistically, in higher education, TQM appears to be a systematic and a streamlined philosophy for quality management and management of change (Hammersley and Pinnington, 1999). At the same time, the substantial differences between educational and commercial organizations need careful considerations (Srikanthan and Dalrymple, 2003). In such a complex system as higher education, the diverse needs of customers and the process of satisfying them could be a major issue. It is, therefore, important to understand the bottlenecks/ barriers present in education systems so as to successfully adapt TQM philosophies to higher education. Hence, it is important for higher education to learn from the experiences of these organizations experiences and to initially concentrate on their core business process, namely teaching and learning (O'Neill and Palmer, 2004 and Temponi, 2005). Unlike industry, where statistical quality control techniques could be adopted as they deal with tangible processes (such as measuring the quality of the goods/ services based on the product specifications), in higher education what happens in the classroom is intangible. This results in higher education having to face with the main challenge of dealing with the intangibility of education. Therefore, the philosophies of TQM need to be adapted to accommodate the intangible aspects of student learning. Currently, higher education is faced with major criticisms from its stakeholders with respect to coping with the ever changing market situations, socio-economic conditions and stiff competition worldwide. Higher education could cope with such a dynamic situation by continuously improving their processes and by providing high quality education (Lozier and Teeter, 1996 and O'Neill and Palmer, 2004).

Similarities and Differences between Industry and Education:

In industry, it is customary to inspect the finished product. What is the finished product of education? Is it right to say, the graduating students form the finished product of education? Students are non-standard human beings who are embodied with a range of experiences, emotions and characteristics and hence treating them as products misses the complexities of the learning process as a unique learner. However, many researchers have compared industry with education and have pointed out that although industry and education differ from business process perspectives, some of their outcomes such as focusing on building flexibility and improving

customer base in a dynamic environment are very much similar (Stensaasen, 1995; Lundquist, 1998 and [58] Srikanthan and Dalrymple, 2003). From the work of Juran and Gryna (1980), Stensaasen states that educational institutions may be considered as industries which provide education as the service with raw materials as incoming students on whom the processes of teaching are applied and turned out as the finished products of graduates. While discussing on the stakeholders' perspectives of quality in higher education, Srikanthan and Dalrymple consider courseware as products, the current and prospective students as users of products and the graduates as output with employers as their users. Beaver (1994) considers students as customers and raises concern on using student grade distribution to assess quality in analogy with statistical control methods used in industry. He also feels that students are more than customers purchasing a product since students' learning has various contributing factors beyond the classroom, such as social and family background. In the context of adopting TQM in higher education, Lawrence and Robert (1997) have warned that many US firms abandoned TQM in the face of the recession of the early 1990's since they did not believe the advantages outweighed the costs. Further, Kohn (1993) has strongly expressed that to talk about learning in terms of buying and selling not only reflects a warped view of the activity but contributes to the warping as well. In response to Kohn (1993), Schmoker and Wilson (1993) have stressed that by wisely adapting TQM in the context of education, it can provide an excellent opportunity to succeed where other efforts have failed. As against Kohn's comments, they mention Total Quality's basis as sound psychology, its demonstrated benefits to both schools and industry and its self-refining mechanisms. Lundquist (1998) states that there are some striking similarities between industry and higher education – the customer focus, process orientation and continuous improvement philosophies of TQM adopted in industry is very much applicable in education.

Barriers to TQM in Higher Education:

1. According to many experts, TQM remains a minimum global requirement for staying in business as dictated by changes in society and market (Brigham, 1993). Yet, findings from TQM-related literature conclude that in many cases, TQM has failed to produced its promised results (Koch and Fisher, 1998 and Brigham, 1993). Brigham emphasizes that the surveys do not conclude that the TQM philosophy is worthless rather suggest that the implementation of TQM has been deficient or erroneous. He stated that the common mistakes made in implementing TQM in industry are lack of leadership, middle management muddle, misunderstanding of participation, obsession with process and failure to include the customers. He concludes that in higher education, TQM's long-term success depends on the lessons drawn from industry.

2. Many researchers from higher educational institutions are still skeptical about adopting TQM in education (Kohn, 1993 and Beaver, 1994). Kohn has pointed out that before higher education jumps into another corporate bandwagon such as TQM, one should differentiate between education and business. He has expressed his concerns in the usage of metaphors by researchers while comparing education with industry. He emphasizes that in higher education, achieving high grades as a measure of success in implementing TQM is a major misunderstanding of the principle of TQM. Therefore, the first major barrier for the application of TQM in education is the misinterpretation of TQM philosophy and the lack of understanding the processes that

are different in education as compared to industry. This could be due to lack of the necessary knowledge about TQM.

3. A common barrier to both industry and education in implementing TQM is lack of proper leadership (Brigham, 1993). Leaders should be able to set viable corporate vision and be willing to initiate change and provide the resources needed for team efforts directed towards achieving the vision. Senior management may want the result, which TQM can bring but may not be backing it wholeheartedly. TQM should be embraced as a strategy by the top management and they should get visibly and explicitly committed to its philosophy. The pivotal role played by middle managers in spearheading the impetus for quality improvement may not be understood clearly.

4. There could be another barrier, the fear whether TQM really works and is worth the effort (Sebastianell and Tamini, 1998). Due to this notion, middle managers may not be employees take responsibility. In higher education, there is a need to re-define collegialism in ways of engaging and empowering academic staff which regards to implementing quality policies (Harvey, 1995). On the other hand, even if the employees are guided by the TQM plan, the middle manager may be to impatient to see the worth of the efforts put in. This is more evident in a higher education scenario then industry due to the complexity of the academic processes involved which might take time for the TQM results to be witnesses by the management.

5. Another barrier could be employees' resistance to change. In the case of higher education, most of the employees are predominantly professionals who by tradition expect autonomy and academic freedom. Academic staff may not like being asked to rethink their teaching styles (Blankstein, 1996). Educational professionals may be more devoted to teaching than to TQM. Further, it is a common belief that TQM adds unnecessary layers of bureaucracy (Sebastianell and Tamini, 1998) which is not a preferred domain amongst academic professionals. Hence, it may not be possible for them to adopt TQM principles in a short span of time.

6. In higher education, poor curriculum design could lead to quality failure. There could be unsuitable academic systems and procedures that serve as a bottleneck while imposing changes in curriculum of course delivery (Kohn, 1993). Kohn feels that much of TQM implementation is education fails to address the fundamental question about learning and more specifically whether the curriculum is engaging in the relevant learning processes. Further, with TQM, there could be too much of documentation of processes, which consumes time and effort.

7. Another barrier for TQM in education could be lack of sufficient funds and resources. TQM involves a paradigm shift in the mindset of the entire organisation. This can be achieved through systematic and strategic training of all the employees. The educational organisation may not have the required expertise to train the staff and may look for external consultants for training, especially to suit the requirements of education. Hence, TQM involves high cost, effort and time (Koch and Fisher, 1998). Since educational institutions predominantly receive funds from the government, TQM may lead to overshooting of the costs. With such immense financial and

resource considerations, TQM may not yield the expected benefits within a specific time frame.

8. In industry, it is easy to measure, monitor and improve product characteristics as compared to the situation in higher education. In higher education, service quality deals with people, the time of delivery, intangibility (learning process is suitable to be measured) and difficulty in measuring successful output and productivity in a quality audit (Harvey, 1995b; Yorke, 1997 and Owlia and Aspinwall, 1998). It is definitely not easy to measure academic processes due to the involvement of numerous intangible factors. Hence, suitable models need to be adapted to measure quality in higher education.

Implementing TQM in Classroom:

Implementing TQM in classrooms addresses the quality of the core business processes of higher education. Beaver (1994) states that there are various criteria for classroom teaching and these predominantly include the following with regard to teaching excellence:

1. Active learning to enhance student involvement;
2. Mastery of content and the ability to communicate it;
3. Assessment and other means of feedback about student learning; and
4. Concern for students' learning and progress.

According to Prabhu and Ramarapu (1994), in many colleges and universities, teaching evaluations have been used to measure the quality of instruction in the classrooms. Today, higher education institutions aim at equipping the students with life-long skills like communication and thinking skills and promote independent learning and creativity. The activities for the courses should planned in such a way so as to accommodate these aims and objectives. To what extent they have been accomplished is determined through course and program evaluation. Gronlund and Linn (1990) view evaluation as answering the question "How good?" which acts as a feedback mechanism for incorporating continuous improvement in the teaching / learning processes.

In higher education, program evaluations conducted once in 3 to 4 years are expected to give a macro perspective of the strengths and weaknesses of the entire program as a whole. This is complemented by a micro examination of the curriculum and the student learning process through individual course evaluations, which is usually conducted every year for course review. Normally, after the courses pertaining to a program are evaluated for a student cohort, the program evaluation follows as the next step. Program evaluation should include course evaluation inputs, as well as a survey from employers of their graduates, alumni, external examiners, etc.

Course Evaluation Process:

Step 1: Select the course to be evaluated.
Step 2: Prepare the terms of reference for course evaluation (aims, objectives, sequence, and opportunities).
Step 3: Conduct the course evaluation.
Step 4: Prepare an evaluation report of the findings.
Step 5: Prepare an action plan with improvement measures.
Step 6: Implement the action plan for continuous improvements.
Step 7: Monitor the action plan for continuous improvements.

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Conclusion:

This concludes that successful implementation of TQM in higher education could be achieved by adopting a TQM framework, which priorities continuous improvements in the core processes, namely teaching / learning. This will enable higher education institutions to:

1. Be aware of the ever-changing customer needs and react immediately to their needs;
2. Efficiently utilize the resources by directing their usage on activities that truly satisfy customer needs;
3. Use the course evaluation's feedback loop for making improvements in a systematic and continuous way; and
4. Engage both learners as well as the institution members in their quality mission.

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