

7. NEED OF QUALITY MANAGEMENT AND QUALITY PRINCIPLES IN TECHNICAL EDUCATION

Dr. S. V Agarkar* A. M. Jinturkar** G. R. Chavhan***

Abstract

A continuous improvement process consists of a scientific, systematic approach to meeting the needs of external and internal customers by continuously improving systems. Phrases that are synonymous with TQM include Continuous Quality Improvement (CQI), Total Quality Control (TQC), Continuous Improvement (CI), and Total Quality Systems (TQS). One of the major motivators for the quality movement in industry has been the issue of survival. The loss of sales to foreign competition and an ever-decreasing profit margin has forced companies to rethink how they do business, including the use of Total Quality Management (TQM), to survive. The same message has become increasingly important to educational organizations as well. For many technical educational institutions, the selling point for implementing a quality program was a leaner budget, as well as the promise of higher efficiency and productivity inherent in certain quality systems.

INTRODUCTION

Quality is a concept, the capacity, which whole organizations can be made to have, to continuously learn and implement customer wants. Quality is judged in terms of the extent to which product or service meets the stated purpose. Education as the most important resource has multiplying effect on all facts of development in a society. Educational institutions provide the most important input to the industries. Today engineering graduates need to be sensitive towards economic, social, political, cultural and ethical dimensions of their work. As a result, it has become necessary to restructure engineering education in India to meet the growing challenges. The systems and procedures being followed by technical institutes have lost the traditional affiliation with new demands of society. It has got to be considered that quality

means different things to different people. With number of stakeholders (students, parents, teachers, employers, industry and the society), the definition becomes quite complex and confusing. Quality is a multidimensional concept embracing all the activities and the function of the institutions. So by involving every individual at every level with the organization ensuring that they work together, TQM is found to be best method for improving effectiveness of an organization.

In engineering education, many methods and strategies are being attempted to attain excellence. However since the availability of trained staff have always been less than the demand, the management although talks about quality is, by and large, not very serious about it. Quality is often sacrificed for lack of real motivation for it. It is

*Principal, **Assistant Professor, ***Lecturer, Anuradha Engineering College, Chikhli District – Buldhana.

understood that all the components of education system should work independently for achieving total quality. However there are few crucial system components which need to be given special attention.

The idea of quality and transformation is not a new concept to the world of technical education. The application of this industrial model is also evident in technical education, as these institutions have historically strived for excellence and quality in academics. Achieving these goals has been easier in times of abundant resources and favorable demographics as difficult operational choices did not have to be made to the degree that they today. Institutions of technical education, however, are increasingly challenged by diminishing budgets and changing stakeholder perceptions by the definition of what constitutes a quality institution. While the notion of quality was traditionally based on how selective a college or university could be in its admission practices, institutions of technical education are now also being judged by many other factors, such as the employment rate of graduates and accreditation standards.

In order to cope with hits to both staffing and funding, the higher education environment is being transformed by terms usually associated with big business such as globalization, technology, competition, diversity, and concerns about quality. Thus, it is not surprising that educators, many at the urging of experts from industry have looked to TQM as a possible remedy for change.

The educational establishment must collectively and effectively agree to pursue the cultivation and nurturing of quality within all segments of the educational system. The need and desire to pursue quality in our institutions of higher education can be accomplished by exhibiting the same type of administrative and procedural actions that have proven successful in business practices.

DIMENSIONS OF QUALITY MANAGEMENT

The criteria, which have become essential by which primary, secondary and higher educational institutions can evaluate themselves, are organized into categories representing seven dimensions of quality management. These categories are

- Leadership,
- Strategic Planning,
- Student and Stakeholder Focus,
- Information Analysis,
- Faculty and Staff Focus,
- Educational and Support Process Management, and
- Organizational Performance Results.

The framework for the study is based on the theory of *change management*, or the continuous process of aligning an organization with its marketplace to become more responsive and effective than its competitors. The concept of change management is grounded in the principle of sustained measurement of and feedback from the people, processes, and systems within an organization, in which people behave as they are measured. These basic concepts associated with the theory of change management form the basis of TQM as such are important factors for this study.

As has been suggested, institutions of higher education have established a trend of applying business and industrial management models to their own institutions. In particular, principles associated with Total Quality Management have become increasingly important to higher education administrators, as have the concepts associated with continuous quality management. As higher education leaders explore quality-related programming changes, they will need to learn the viewpoints of the administrators, faculty,

and staff/support staff if those initiatives are to be successfully implemented.

Quality and transformation are not new concepts. However, today's institutions of higher technical education are faced with rapidly changing operating environments as well as dramatically changing perceptions among stakeholders about the definition of a quality institution. Moreover, turbulent changes, declining revenues, and concerns about viability within the business community have spilled over into academia. Ever since TQM has gained widespread acceptance as a quality management tool in business and industry, its use has begun to be recognized as a major innovation in higher education administration. In spite of the success of this tool in business and industry, little research exists to support what factors, if any, may prevent colleges and universities from productively adopting and applying this tool to their own management practices.

QUALITY IN EDUCATION

Even though considerable disagreement about quality continues to exist, some elements are accepted. Some widely held assumptions of academic concerning collegiate are:

- Only high-cost colleges have quality;
- Only large and comprehensive colleges have quality;
- Only highly selective colleges have quality;
- Only nationally recognized colleges have quality;
- Only a few colleges have quality; and
- Only colleges with impressive resources have quality.

Five different approaches to defining quality in the corporate sector, which have been adopted by others and used in education are:

1. Product-based: Amounts to differences in the quality of some desired ingredient or attribute. In academia, the relative quality of an institution may be judged based on performance of student on a nationally standardized examinations.

2. User-based: Equates with consumer preference; quality becomes a measurement of *fitness for use*. Education quality is judged by how much it helped to obtain a job. Users are not limited to students alone, as higher education has many consumers, internal and external. Each has its own *fit for use* view of quality.

3. Manufacturing-based: concerned with how well the product matches the design requirements. Quality is limited to compliance rather than with the premise, or rationale, for the design or specification. In academia, this could be compared with the accreditation process.

4. Value-based: Corresponds to "the degree of excellence at an acceptable price and the control of variability at an acceptable cost"

5 Talent developments based: True excellence lies in the Institution's ability to affect its students and faculty favorably to enhance their intellectual and scholarly development, and to make a positive difference in their lives.

Institutional quality is a composite of interdependent elements, which includes

- 1) goals and objectives,
- 2) students' learning,
- 3) faculty performance,
- 4) academic programs,
- 5) institutional support services,
- 6) administrative leadership,
- 7) financial management,
- 8) governing board,
- 9) external relations, and

10) institutional self-improvement.

QUALITY PRINCIPLES

It is important to have a personal interest in an organization's success to define its mission. In higher educational institutions, interested parties are comprised of faculty, students, administrators, staff and parents - also known as stakeholders. In addition, trustees or regents, alumni, employers, and private and public sector funding agencies augment the list of stakeholders. Stakeholders must be systematically monitored and evaluated when defending an institution's mission and outcomes. The most often nine principles associated with effective quality:

1. Are driven by vision, mission and outcome:

All organizations, especially social organizations like education, exist for a purpose. Their vision, mission and outcomes are defined by the expectations of all the stakeholders. Without a clearly defined mission an organization lacks a clear sense of direction and focus.

2. Are system dependent: Institutional performance is defined as how well procedures and members interact as a part of an interdependent system or process. Because changes in one part of an institution affect the other segments, most problems in an organization are the result of the work processes or systems, not the people. For example, a system problem is created when faculty are rewarded for presenting papers at conferences, but cannot do so because travel funds are limited.

3. Have leaders who create a quality culture:

A different type of leadership is needed to create a quality culture. The leaders of an organization are responsible for systematically bringing the institution's culture into harmony through top-down leadership combined with bottom-up input regarding improvement processes. Leaders are responsible for helping members understand that new ways of thinking and behaving may be necessary to achieve the declared vision,

mission and outcomes.

4. Exhibit systematic individual development:

Because an organization is constantly changing, it is necessary to continually update all its members' knowledge and skills to meet the demands of existing changes and to systematically prepare for future changes. Organizational leaders who do not provide training opportunities to their employees may end up with a poorly performing workforce. A lack of training should be perceived as a problem with the system.

5. Make decisions based on fact: The basic cause of a problem cannot be clearly understood unless all relevant data are systematically gathered. Three types of data are required before a problem can be understood rationally: (a) data measuring the desired outcomes, (b) data measuring the process, and (c) data intended to develop a contextual understanding. Available data are meaningless unless it is put into some context and has a proven relationship (provides meaning).

6. Delegate decision-making: If individuals are to be held responsible for achieving a stated mission, they must be made aware of how their position and actions relate to the mission, as well as be given the flexibility to make necessary changes to their job tasks. The more the individuals sense a process the more they can influence they and take ownership.

7. Collaborate: Collaboration and teamwork produce results when individuals who have a stake in the outcome are involved in the decision-making process. Teams divide labor, based on individual strengths, to achieve a common goal. Collaboration results when employees who have a vested interest in an objective work together to achieve mutually satisfying results.

8. Plan for change: A fundamental assumption of the quality principle is that an Institution's mission is based on stakeholders' expectations. Because it is assumed that these expectations change constantly, it is therefore reasonable to assume that an organization's mission also

constantly changes. Institutions need to embrace change as a cultural value; they need to perceive change as a potentially positive force and anticipate it. Planning for change is a fundamental component of continuous improvement.

9. Have leaders who support a quality culture: Senior management needs to support the implementation of the quality principles by ensuring that the necessary systems and resources are available, which will create and nourish a culture of change. Moreover, senior leaders must constantly support those who are making the changes. They must be ready to reinforce, through rewards based on quality principles, the changes necessary to make the voluntary adoption of quality principles both a personal philosophy and an integral part of the organizational values.

These quality principles are inter related. New systems and processes have the potential to improve quality; better quality is likely to increase pride and confidence, resulting in enhanced attitudes and behaviors. Thus, behavioral changes can positively influence an institutional culture that embraces change as a tool to increase quality.

The trouble with higher education is, by far and large, not with the preparation, ability, and commitment of the professors. Rather, the trouble is more directly attributable to the lack of administrative leadership from presidents, vice presidents, deans, and to some extent, the chairpersons and governing boards. Major responsibility must be placed first on them, since many have yielded to the pressure of the present rather than making a commitment to quality, while looking toward and preparing

for the future.

CONCLUSION

In the engineering education, many methods and strategies are being attempted to attain excellence. However since the availability of trained staff have always been less than the demand, the management although talks about quality is, by and large, not very serious about it. Quality is often sacrificed for lack of real motivation for it. It is understood that all the components of education system should work independently for achieving total quality. However there are few crucial system components which need to be given special attention

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