3. QUALITY IN TECHNICAL EDUCATIONAL INSTITUTIONS: SOME CRITICAL THOUGHTS

*R. P. Mohanty**

Introduction

Technical education environments across the globe are frequently described as turbulent and dynamic. Both global and national forces are driving change within and across individual countries and their higher technical education institutions. These changes have served to put the issue of quality management firmly on the agendas of national governments, institutions, academic departments and individual programmes of study. Despite the progress that has been made through research and debate, there is still no universal consensus on how best to manage quality within technical education. One of the key reasons for this is the recognition that quality is a complex and multi-faceted construct, particularly in technical education environments. As a result, the measurement and management of quality has created a number of challenges. This, in turn, has led to the adoption of a variety of quality management practices within different countries and their technical institutions, many of which draw upon existing industry models. Although technical education is increasingly viewed as an international business, the majority of research conducted on quality management practices has been undertaken within one national context and frequently within individual institutions or academic departments. While there have been some cross-national comparative studies undertaken, there appears to have been limited effort to consolidate the approaches undertaken internationally.

This paper begins with an understanding of the environmental forces driving change within education system in India. In summary these forces include:

Political Forces:

- Government initiatives to widen access
- Government development of more institutions
- Strict governmental control over curricula and management
- No unified system for government control

Economic Forces:

- Reduced or limited funding per student
- Reliance on private sector funding
- Reliance on tuition fees
- Rising costs per student
- Increase in number of private institutions
- Greater emphasis on internationalisation

Socio-Cultural Forces:

- Greater demand for student placements
- Greater diversity of student populations
- Greater diversity of provision of facilities
- Pressure for greater accountability or value

*

for money

- Widening global choice for students

- Emphasis on continuous education by employees

- National accreditation scheme

Quality Management Models in Higher Technical Education

It is seen that a number of institutions have tested quality management models originally developed for industry. This approach has yielded a number of benefits for managing quality; however, there are also a number of limitations related to the application and relevance of these models in technical education. Internationally, the model most frequently drawn upon is total quality management.

Total quality management (TQM) is defined as: 'a management approach of an organisation, centred on quality, based on the participation of all its members and aiming at long run success through customer satisfaction and benefits to all members of the organisation and to society' As the definition implies, TQM has the potential to encompass the perspectives of different stakeholders in an integrated manner and thus is a comprehensive approach to quality management that can facilitate change and innovation. Other models that have been tested are:

EFQM Excellence Model

Non-prescriptive framework that establishes 9 criteria (divided between enablers and results), suitable for any organisation to use to assess progress towards excellence

Balanced Scorecard

Performance/strategic management system which utilises 4 measurement perspectives: financial, customer, internal process, and learning and growth.

Malcolm Baldridge Award

This is based on a framework of performance excellence that can be used by organisations to improve performance. Seven categories of criteria: leadership; strategic planning; customer and market focus; measurement, analysis, and knowledge management; human resource focus; process management; and results.

ISO 9000 Series

This is International standard for generic quality assurance systems and is concerned with continuous improvement through preventative action. Elements are customer quality and regulatory requirements, and efforts made to enhance customer satisfaction and achieve continuous improvement.

Business Process Reengineering

System to enable redesign of business processes, systems and structures to achieve improved performance. It is concerned with change in five components: strategy, processes, technology, organisation and culture.

SERVQUAL

This is designed to measure consumer perceptions and expectations regarding quality of service in 5 dimensions: reliability, tangibles, responsiveness, assurance and empathy and to identify where gaps exist. These models emulate TQM and concentrate on developing systematic business processes that are required to achieve measurable quality outputs.

For example, the balanced scorecard requires the identification of appropriate performance indicators and the European Framework for Quality Model (EFQM), performance enablers and results. The one exception is SERVQUAL, a model that focuses on the assessment of quality from a consumer perspective. The models are all applicable at either institutional or departmental/faculty level and have been tested. Despite their differences,

a key feature of all the models is the requirement for self-assessment against pre-defined criteria. The testing of these models has identified both benefits and limitations in their application to technical education.

Critical Success Factors

A number of critical success factors have been identified by many institutions. They are as follows:

Top management leadership and commitment.

- A well-implemented institutional management system.

- The education and training system for faculty and others.

- A well-organized information and analysis system.

- A well-implemented process management system.

- A well-developed strategic planning system.

- A well-developed academic institute-industry collaboration system.

- Equipping all with quality tools.

- A well-developed human resource management system.

- A well-developed competitive benchmarking system.

Defining Quality Leadership for Technical Education

Leadership is typically defined by the traits, qualities and behaviors of a leader. What traits reflect quality leadership and which leadership theories are most closely aligned to it. Both leadership theories and TQM have had as primary objectives the enhanced performance of institutions and increased satisfaction for students and faculty members and employers ultimately to the society.

The key differences in leadership between TQM based institutions and traditional institutions are as follows:

- Strategic leadership is more important in TQM based institutions because TQM is more likely to emphasize that internal systems be aligned with external environments.

- Visionary leadership as the success of TQM depends on all stakeholders sharing a common vision or goal i.e. academic excellence.

- Designing reward systems for all stakeholders to foster creativity and innovation.

- Empowerment and teamwork, timely responses to students' concerns by having all employees take a leadership role as well as share information and expertise.

Perhaps the leadership style that most relates to quality leadership in technical institutions, is transformational leadership which "searches for ways to help motivate students by satisfying high order needs and more fully engaging them in the process of the academic work. This is directly "related to quality because transformational leaders are able to communicate and reinforce values and express an inspirational vision focusing on quality. They also encourage quality improvement by building trust and reducing fear, creating awareness for change, developing a culture to support that change and initiating new knowledge building strategies.

What we need then are leader based institutions, with leadership capacity embedded throughout. The most current theory on leadership looks at leadership as a process in which leaders are not seen as individuals in charge of followers, but as members of a community of knowledge acquisition, sharing, creation, and application as well as advancement practice. In regard to academic leadership, what's important is sharing

knowledge amongst team members, acting as a mentor, instructing others, facilitating group processes, providing information, monitoring performance, promoting open communication, providing goals and allocating resources effectively. Individual qualities of a quality academic leader, which will be necessary to implement and sustain progress toward a TQM culture include, drive, motivation, honesty and integrity, self confidence, cognitive ability, knowledge of the business, charisma.

In summary, a leader in a technical education system has the following significant role to play:

- Visioning to be a global leader in technical education by promoting culture of research.

- Embracing creativity and innovations.

- Inspiring action.

- Relentless pursuits towards continual quality improvement, and benchmarking.

- Strong Care Culture for faculty and students.

- Redefining Curricula and Pedagogic Models.

- Creating an Innovative Teaching and learning environment.

- Enhancing staff capability.

The Management of the Technical Institution is the Most Responsible for Recognizing the Following Factors:

Organizational Factors

➢ Strategy

➢ Structure

➢ Staff

➢ Skills

➢ Systems

➢ Resources

Environmental Factors

➢ Government Policies

➢ Societal Awareness

➢ Inter Personal Factors

➢ Employee Relations

➢ Compatibility and Coordination

➢ Communication

➢ Team Building Approach

➢ Sharing of Knowledge

The management is the most responsible for building Quality system:

In that system, it should be clearly defined:

- The mechanisms, processes and procedures and the documents.

- Organization of all the resources: academic personnel, students, equipment and space.

- Creation of instruments for a quality control.

- Who is doing?

- What is he/she doing?

- How is he/she doing that?

- To whom is he/she responsible for that?

In Creating the Quality System there are Several Steps:

- Quality definition (what is a quality?)

- Quality planning (designing - documents)

- Providing conditions for realization of the defined quality

- Quality control (self evaluation and external evaluation)

- Taking measures for correction of the defects

The Obligations of Management in the Quality System

The overriding characteristic in a technical institution is the intense desire to learn. Another closely related characteristic is a strong commitment to generating and transferring new knowledge and technology. This is facilitated by information gathering and training programs (offered by both internal and external sources). Still another key characteristic is an openness to the external environment. The institution is responsive to, is trying to learn, what is going on in the outside world. Such institutions rely heavily on periodicals, research reports, briefings from key academic experts, industry personnel, and talks and seminars by outside experts.

The management is the first and most responsible agency in the quality system because:

- It defines and projects the quality in all segments of working of the institution

- It provides the conditions for realization of the planned quality

- Undertakes activities for correction of the deficiencies and prevention of these defects

- Introduces mechanisms and appropriate instrumentations for continued quality control

- Provides knowledge transfer from experts through organizing seminars and scientific workshops

- Provides moral, financial conditions and logistics for application of their knowledge.

Some of the important elements that support the student based pillar of the technical institutions include:

- Shared vision for academic service.

- Shared ownership of the academic service tasks and solutions.

- Organizational structure, processes, and jobs designed to serve the stakeholders.

- Empowered teams for generating new ideas and approaches to improve academic service.

- Information systems designed to monitor and predict the changing needs.

- Management systems that ensure prompt translation of the stakeholders' requirements to organizational actions.

Self-Evaluation Objectives of Technical Institutions:

Self-evaluation as a first step in the evaluation process consists of three objectives:

- Brief and relevant overview of the teaching process, having in consideration the impact of the research work on the teaching process;

- Analysis of the positive and negative elements of the higher technical education institutions (by means of SWOT analysis);

- Provision of basis which will serve as an external evaluation tool

Self-evaluation comprises of four key issues:

- What are the activities of the faculty accredited for higher education?

- In what way is the faculty performing its activity?

- How does the faculty accredited for higher education keep track of self-evaluation?

- What changes are undertaken in order for the faculty to improve?

In Indian technical institutions the following critical factors are the major constraints in promoting quality culture:

- Power politics within the institution;

- Low investment in faculty resource

development;

- Negligible investment in research and curricula development;

- Lack of emphasis on creating a learning organization;

- Short term interests of institutional leaders;

- Quick-fix expectations and shallow thinking of faculty members and parents;

- Emphasis on superiority of administration over academics;

- Dysfunctional academic performance measurement systems;

- No institute-academic collaboration for knowledge creation and sharing.

To counteract these constraints, it may be mentioned here that institutional leaders make the investment and long-term commitment necessary to build and maintain a true leadership mindset among their most promising faculty members. Leaders help each of their followers to develop into an effective self leader by providing them with the behavioral and cognitive skills (managing self) necessary to exercise self-leadership.

From Where Do We Start?

- Developing both the understanding of the need for TQM and the willingness to practice.

- Acquiring the minimum capability required to learn quality management skills, cognitive behaviors and relationships with stakeholders.

- Preparing some action plans however

rudimentary they may be.

- Taking action about quality.

- Responding to the reinforcement of quality that follows action.

All these efforts require much dedication and a strong motivating force. Academic Professionals can perform an important role by becoming more aware of opportunities for common action, taking initiatives to bring that action about, and developing the critical skills to do so effectively. We may call these professionals as the critical mass of collective interest and an institutional representation.

Towards a World Class Institute (WCI) Model

A model presented in Fig. 1, which this author believes is a transformational initiative. If such a model can be implemented in its true spirit, technical institutions will transform in the long run towards a world class learning community.

World class institution is defined as ranking among the foremost in the world; of an international standard of excellence. WCI is a scholarly community derives its strength, vision, and purpose by the advancement, sharing and application of knowledge, and by facilitating the development of thoughtful, creative, adaptable, contributing and humane citizens.

In this transition to world class learning community, planning for quality, designing quality, acquiring quality, developing quality, diffusing quality etc. in its totality inside a technical institutions and in its ecosystem are the fundamental prerequisites.
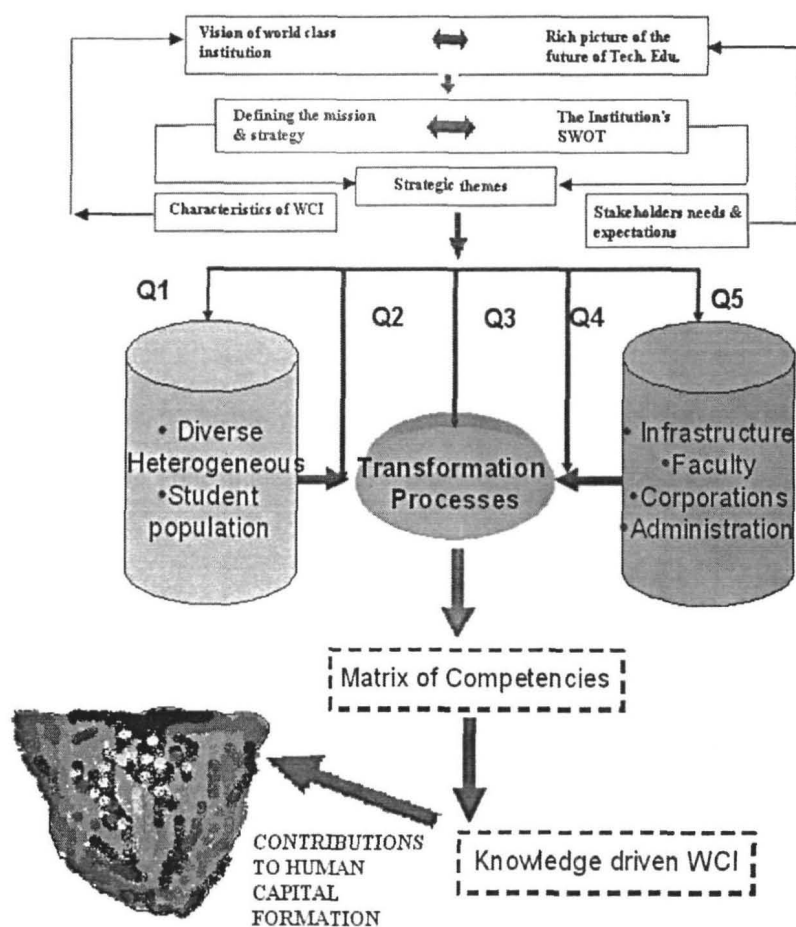
Fig. 1: Transformational Model

❖ ❖ ❖