NEAR EAST UNIVERSITY

INSTITUTE OF APPLIED AND SOCIAL SCIENCES

TOTAL QUALITY MANAGEMENT AND ITS APPLICATION IN HIGHER EDUCATION

Vilma Gjeci

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Apprroval of the Head of the Institute.

Prof. Dr. Fakhraddin Mamedov

We certify that this thesis is satisfactory for the award degree of Master in Business Administration.

Examining Committee in Charge

Asst. Prof. Dr. Okan Şafaklı,	Chairman of Committee, Head of Business Administration Department, NEU.
Ahmet Ertugan,	Business Administration Department, NEU.
Asst. Prof. Dr. Erdal Güryay,	Head of Economics Department, NEU.
Asst. Prof. Dr. Hüseyin Özdeşer,	Economics Department, NEU.

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ABSTRACT

Higher education institutions have been forced, in recent years, to publicly demonstrate how they achieve and maintain quality in their programs. Invariably, comparisons have been drawn between the procedures and criteria used in industry and those used in academia.

The focus of the discussion about implementing TQM in higher education has been mainly on the role of the student. The question that naturally rises here is, whether the student is the customer and should be treated as so? TQM philosophy strives toward customer satisfaction, therefore a university thinking as its students as their primary customer would put more efforts in finding ways to improve the service they offer to have satisfied customers. This effort should be clearly evident in its mission statement and the values that it holds as the most important.

Another major issue is the improvement of the learning and teaching process. How can this be achieved? If TQM is to be applied only to administrative processes in a university than quality will be not complete.

This paper addresses these issues, and answers some questions that are vital to the process of successfully implementing quality and at the same time it describes ways to built quality systems in academia and improve the learning and teaching functions.

CONTENTS

OVERVIEW

Total quality management (TQM) is a management philosophy devised by an American statistician (W. Edwards Deming) but first embraced by the Japanese. It is a philosophy that focuses relentlessly on the needs of customer, both internal and external, realigns the organization from detection to prevention and aims to improve continuously via the use of statistical monitoring[1]. TQM thus is a philosophy of management, which is customer-focused, and all members of a total quality management (control) strive to systematically manage the improvement of the organization through the ongoing participation of all employees in problem solving efforts across functional and hierarchical boundaries.

Certainly TQM can be defined in a number of ways, and the details of different approaches can vary somewhat. However, a good starting definition is:

"Total Quality management refers to a management process and set of disciplines that are coordinated to ensure that the organization consistently meets and exceeds customer requirements. TQM engages all divisions, departments and levels of the organization. Top management organizes 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 of all processes and practices to eliminate waste and pursue continuous improvement. "[2]

TQM incorporates the concepts of product quality, process control, quality assurance, and quality improvement. Consequently, it is the control

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[1] Brockman, J. R. (1992). "Just another management fad? The Implication of TQM for Library and Information Services."

[2] Capezio & Morehouse

of all transformation processes of an organization to better satisfy customer needs in the most economical way. Total quality management is based on internal or self-control, which is embedded in each unit of the work system (technology and people). Pushing problem solving and decision-making down in the organization allows people who do the work to both measure and take corrective action in order to deliver a product or service that meets the needs of their customer. Generally, TQM is considered a means to introduce *participative management.*

The role that quality plays in the higher education sector is becoming more important as the dominance of market-orientation leaves no alternative for Universities and Colleges but to improve their quality while increasing efficiency. Philosophies like Total Quality Management, which have been successfully adopted in commercial organisations, are generally seen as the way forward. This paper includes a review of the published literature on theories and applications of TQM in higher education.

Many of the TQM concepts originated with the work of Dr. W. Edwards Deming, who guided the Japanese industry's recovery after World War II. While the Japanese listened to Deming American industry did not. For nearly two decades, before and after World War II, American management methods were unchallenged and in hindsight, costly practices of traditional hierarchy took hold.

Meanwhile, industry leaders in Japan burdened with a reputation for poor quality, invited Dr. Deming to teach them his methods. Deming urged them to find out what their customers wanted, then study and improve the design and production processes until the quality of their products was unsurpassed. He urged a new style of management that shifts the focus from profits to quality. With total quality control (TQM), decisions are based on data gathered with scientific tools and approaches.

Products and services are improved by improving *how* the work gets done (the methods) instead of what is done (the results).

With the change in focus, the roles of workers and managers are reformed. A manager's role is to enable employees to do the best job possible foreseeing and eliminating barriers that get in the way. Workers learn to apply the expertise they have gained working with the processes and customers on a daily basis.

Deming predicted the Japanese adoption of these methods would put their products in demand throughout the world in five years. He was wrong; within four years the Japanese had gained large shares of some markets.

One very important motivator for quality initiatives was the concept of the "cost of poor quality". This relates to all of those costs that would disappear in an organization, if everything were done correctly from the start.

Quality Improvement vs. Quality Assurance

It is important to avoid equating quality improvement with quality assurance. Quality assurance is a system of activities designed to ensure production that meets pre-established requirements. It gives the customer a guarantee of quality by measuring product conformance with process and performance specifications. Quality improvement refers to all efforts directed to increase effectiveness and efficiency in meeting the customer expectations. It is a continuous process to achieve a better understanding of the market; innovate products and processes; to manage and distribute material and products; and to provide service to customer. The success of quality improvement is based on the understanding of every member of the organization concerning the needs of their customers (internal and external). Maintenance of that understanding requires continuing dialogue and negotiation with the customer and measurement of one's products and

services against customer expectations.

The Three Quality Gurus

While TQM may seem to be a new development to many, it has been around since the 1940's. One of the reasons why TQM seems to be the newest fad was that North Americans did not embrace it, but it did find a home in post-WWII Japan. The most well known advocate of TQM as mentioned earlier, was W. Edwards Deming. Japan. Two other gurus are Philip Crosby and Joseph Juran. Both are a bit younger than Deming, but have been influential in the field. It is worthy of note that the three gurus do not always agree, probably due to differences in terms of what each thinks is important, rather than in basic principles.

PART I

CHAPTER 1

THE TQM THEORY AND ITS IMPLEMENTATION

1.1 TQM Philosophy.

A brief overview of Total Quality Philosophy as well as a good lead into Quality Thinking.

- Who determines quality? The customer.
- Quality is defined by customer needs/expectations.
- Each step in process has supplier/customer relationships.
- Quality comes from the process--- methods, machines, materials, and manpower. Quality leadership--- customer focused (internal as well as external), dedication to quality and continuous improvement, a systems view of an organization, leadership/emphasizing, unity/constancy of purpose, measurement and analysis of processes/systems for improvement opportunities, teamwork to achieve optimal results, employee development through education and training, open communication.
- TQ Culture--- Leadership, teamwork, open communications, continuous improvement, long-range plans.
- Deming's 14 Points (Highlights)- Drive out fear, self-improvement for everyone, improve constantly and forever the system of production and service, adopt a new philosophy.
- Create and publish to all employees a statement of the aims and purposes of the organization.

❖ Different tools for continuous improvement: flow chart, check sheet, run chart, histogram, cause and effect diagram, and pareto chart.

❖ Team management analyzing and improving processes to continually improve products/services to customers.

❖ Old style management was command and control; no one likes to be controlled. New style management under TQ is helping and supporting.

Everything is a feedback loop, i.e. feedback from customers to constantly improve processes/quality.

Under TQ philosophy 94% of problems in organizations are process problems, 6% are attributable to workers who work within the processes.

A TQM-based management philosophy includes not only the core TQM concepts but also supporting concepts directly related to continuous improvement. These supporting concepts are natural extensions of, supportive of, and in many cases prerequisite to, successful implementation of a TQM philosophy in an organization.

1. Central Core Concepts.

❖ The concept of a system and system analysis.

❖ Process variability, including common cause and special cause variation.

❖ Statistical process control and control charts to identify special cause variation.

❖ PDCA cycle to improve processes continuously by reducing common cause variation.

❖ Tools to identify the root cause problems of processes and to assist in implementing new processes.

2. Supporting Concepts.

- ❖ Emphasis on customers, both internal and external, and their needs.
- ❖ Employee issues including:
  - Empowerment
  - Teams, including cross-functional and self-directed teams
  - The value of employees
  - Emphasis on education and training

1.1.1 The Concept of a System.

Deming[3] defines a system as the entire organization. Deming's system is composed of management; management philosophy; citizens of the country; employees; all facets of government, including laws, taxes, trade barriers, et cetera; foreign governments; customers; shareholders; suppliers; environmental constraints; and banks and other financial entities. Deming[4], also defines a system as:

"... a network of interdependent components that work together to try to accomplish the aim of the system. A system must have an aim. Without an aim, there in no system ... optimisation is a process of orchestrating the efforts of all components toward achievement of the stated aim... the greater the independence between components, the greater will be the need for communication and cooperation between them. Also, the greater will be the need for overall management."

For example, one university in Asia; the Hong Kong Baptist University, has applied the following system as a guideline to become committed to quality:

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[3] Deming W. Edwards. (1986). Out of the Crisis. p. 319

[4] Deming W. Edwards (1993). The New Economics for Industry, Government, Education. Pp. 98-99

1. Every person within the institution demonstrates an understanding of an agreement on the very nature of the institution, its mission, its goals and objectives, and the pathway chosen to attain them.

2. There is a commitment to the idea of excellence, to building in quality in all its processes, and to continuous quality improvement (CQI) that is widely understood and accepted. There is likewise general knowledge of representative "institutions of excellence" that serve as inspiration and models for the pursuit of excellence for the members of the institution.

3. There must be trust between all members of the institutional community, which results in agreement on institutional policies and procedures, and in widespread devolution of responsibility and authority for operations.

4. The entire institution, not just its teaching commitments, is student centered: assuring research, and service functions. This service mentality also extended to the institution's other "public" as well (its own staff, the outside community, etc.)

5. The institution has an appropriate resource base to achieve the strategic plans, tactical commitments, and overall mission, which have been adopted.

6. A set of measures, which serve as indicators of performance is developed and systematically applied and the institution has procedures for acting on the shortcoming thereby revealed.

Although the above might not represent a thoroughgoing TQM system for everyone, it is one the fits the university mentioned and its aspirations.

1.1.2 Processes and Process Variability.

The concept of the process variation forms the heart of statistical process control. For example, if a basketball player shot free throws in practice, and

the player shot 100 free throws everyday, the player would not get exactly the same number of baskets each day. Some days the player would get 84 of 100, some days 67 of 100 and so on. All processes have this kind of variation or variability.

This process variation can be partitioned into two components.

1. Natural process variation, frequently called common cause or system variation, is the naturally occurring fluctuation or variation inherent in all processes.
2. Whereas, special cause variation is typically caused by some problem or extraordinary occurrence in the system.

1.1.3 Statistical Process Control.

Shewhart's discovery, *statistical process control* or SPC, is a methodology for charting the process and quickly determining when a process is "out of control" (e.g. a special cause variation is present because something unusual is occurring in the process). The process then is investigated to determine the root cause of the "out of control" condition. When the root cause of the problem is determined, a strategy is identified to correct it.

It is management's responsibility to reduce common cause or system variation as well as special cause variation. This is done through process improvement techniques, investing in new technology, or reengineering the process to have fewer steps and therefore less variation. Reduced variation makes a process more predictable with process output closer to the desired or nominal value. The desire for absolutely minimal variation mandates working toward the goal of reduced variation. The PDCA cycle, repeated many times, provides the mechanism for accomplishing continuing

variation reduction or continuous improvement.

1.1.4 Customer Focus.

A major tenet of TQM philosophy is the emphasis on the customer. This customer focus occurs because customers define what quality is in a product or service. External customers are those who buy or consume the final product. Internal customers are those in production system who depend on others and other processes upstream from them.

1.1.5 Employees Issues.

A final principle of TQM is the emphasis on the value of the employee. For continuous improvement people must work together in teams and they must know how to solve problems and make decisions. They are empowered to make process-related decisions because they are closest to the process and know it best.

1.2 The Two Main Attributes Of TQM

- ❖ Change from an output organisation to a process organisation.
- ❖ Create a total environment to delight customers.

Taking the first of these, the definition is eluding to taking the focus away from simply the end product/service and producing that and looking internally at how that product or service is produced, as suggested by Deming in his action plan, to determine your processes and activities and break them down. This means that owners can be assigned to processes - helping to create 'endless Hawthorne effects' as described by Tom Peters. (This was the result of findings at the Hawthorn plant of Western electric, before WWII, where productivity was increased and quality improved when managers took an interest in the process and owned it).

It also means that suppliers and customers both internal and external can be identified and ensure that staff know and understand their role in the organisation and how their work affects the organisation and how it fits in with the company's goals. This is vital to TQM as employee understanding of this and the increased awareness that it brings means that they feel involved and empowered to suggest changes and improvements. It helps to break down the barriers between departments as recommended by Deming and ensures staff understand and appreciate that their work must be accurate before it is passed onto the next 'customer' as recommended that managers should reinforce this by never walking past shoddy goods etc (Management by Walking About). A process also implies continuous improvement more so than an output organisation. Output implies that a product is produced and the company's involvement ends at that point, whereas process implies that there is a cyclic effect. Obviously, if a company is a process organisation, they are at liberty to define their own processes and controls and I would recommend that they build in continuous improvement. In particular Juran's quality spiral and Road map illustrate this well.

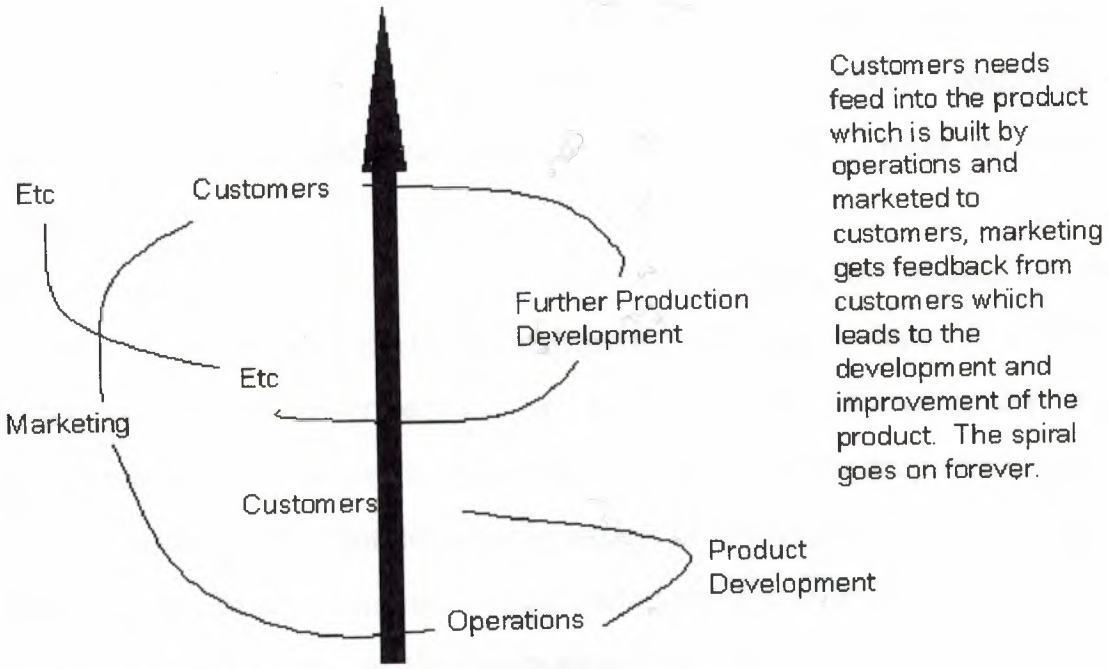


Figure 1.1. Juran's quality spiral and road map.

- ❖ Identify the customers
- ❖ Determine their needs
- ❖ Translate their needs into our language
- ❖ Develop a product that can meet the needs
- ❖ Optimise the product features
- ❖ Develop a process that can produce the product
- ❖ Optimise the process
- ❖ Prove the process can produce the product in operations
- ❖ Transfer to operations

These recommendations help to support the key elements of TQM, continuous improvement and meeting the needs/delighting your customer. This brings me onto the second part of the definition.

Total involvement to delight customers This concept is a key one in Total Quality Management. It means that, breaking it down further, total involvement - i.e. all employees are committed to understand the needs of

the customer and how to meet them. Something advocated by Ishikawa in his concept of company wide quality control. Everybody participates whatever their role and everybody is trained (in the 7 tools of quality control).

'Delighting the customer' - implies not only meeting but exceeding the customers expectations, partly through added 'excitement factors' included in the product as described by Dr. Belbin and the Kano model. E.g. including electric windows as standard on a car etc. They are items/features that the customer may not necessarily expect or need but adds to the 'value' of the product in the customer's eyes. Delighting the customer helps to help a company 'stay ahead of the competition'. It does this through exceeding the customer's expectations; this leads to a loyal happy customer who will recommend your company to friends and colleagues. The cost of not doing so is not easily quantified but will be significant in terms of reputation and sales. Delighting the customer will also lead to them being more appreciative to giving feedback to the product or service by putting forward ideas and suggestions. The other major bonus of delighting your customer is the company is more likely to be profitable which benefits the staff and society. Staff will not be in fear of their jobs and society does not have the guide of the unemployed. The quality spiral ensures that customer's needs are always fed into the process and so the company should always be in a position to delight customers.

1.3 Implementation Issues

The possible implementation issues that may arise deal primarily with the first part; change from an output organisation to a process organisation. The diagram below shows a simple process model.

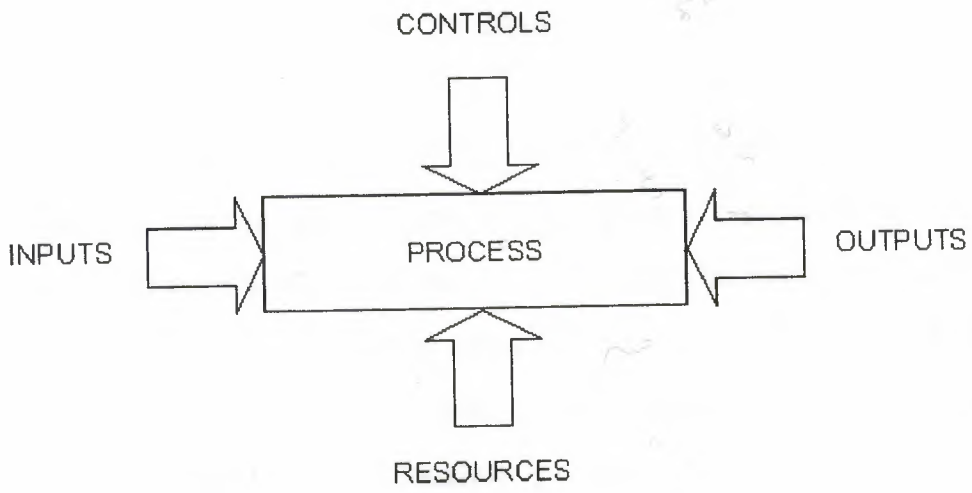


Figure 1.2. The diagram of the organization's process

Looking at the diagram. It is clear to see the potential issues. For a start, an organisation that is only focussing on the output is missing out on the other factors of controls, inputs and resources in order to make it a process! It has a tendency to focus on the output - getting the product out of the door - or 'throwing it over the fence' as it is known internally! The issue with trying to address this and turn it into a process organisation (it is on the journey - probably lingering at uncertainty according to Crosby's QM maturity grid on all 4 areas!) is that:

Long-term goals and strategies must be put in place rather than agreeing and selling products that do not exist to customers with no ability to deliver them on time. This is known as selling 'vapourware' internally. A requirement of ISO9000 is to try to ensure through contract review that we are in a position to deliver the goods that we promise. A company needs to establish strategic direction and long-term plans to enable the company to stop looking constantly for the quick buck and to look to how it can improve the product and service it offers. To do this the company needs to define and agree on the processes and become a process not an output organisation. Through this, the company could build a better reputation,

encourage loyal customers, save vast amounts of money on getting it right first time.

2.Delighting the customer - this follows on slightly from the sales oriented view of service management. They in some ways believe that they are meeting the customer's requirements by providing the customers with the product quickly, and conveniently overlook the fact that it is defective! Ishikawa believed that Quality starts with education and ends with education. As with Crosby's education pyramid - the CEO needs to be approached to try to make him aware of the benefits of delighting the customer.

1.4 The Tools of Continuous Improvement.

At the heart of Deming's philosophy are his understandings of variation. Deming's variation is based on analysis of process when we analyse process we are able to analyse how it performs and draw predictions from that analysis. The diagram below should give us an understanding of how we should approach variation.

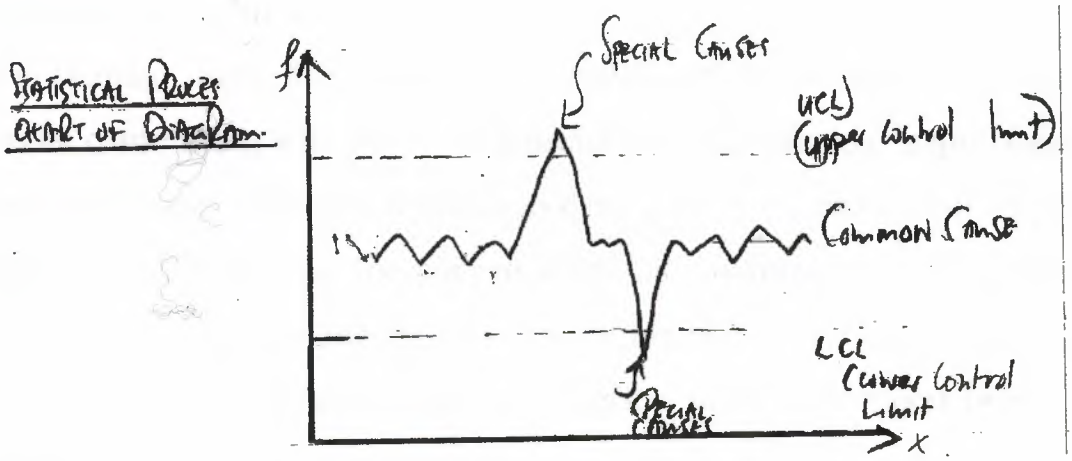


Figure 1.3. The variation diagram.

Any system will have a stable output when it is in statistical control this is when all factors affecting output are control. In the diagram the area labelled common causes represents this. At this stage the system is operating within the specified level of operation as set by the designers of the system. These common cause variations are inherent to the system. Their removal would demand a total change of the system. Another aspect to variation is special cause variation. This type of variation occurs when our system gives out of the designated control levels or limits. On the diagram it is shown by a sudden deviation in process from the nominal past the upper control limits or lower control limits. These occurrences are called special cause because they are out of the control limits. These causes are normally attributed to problems with the actual tool or the operator himself. As opposed to common cause variation management, special the operator can correct cause variation by either replacing a broken tool or some other element within his control, can deal with a problem. An understanding of the process is required by management to prevent tampering and to have the wisdom of knowing when to intervene and when not. Common cause variation is the job variation and the responsibility of management to correct.

So Deming takes the concept of variation of the common cause and special cause along with theory as a useful tool of continuous improvement. Common causes represent a stable system only to be changed if there is something with system. The path to follow is; -remove the special cause first and then analyse the result common for correction when necessary. Variation/common cause/special cause appear to be understood only to a limited extent

1.5 TQM Organization vs. "Traditional organization".

Perhaps a better way of understanding TQM is to compare a "TQM organization with what we might call a "traditional organizations". Let's look at a number of differences.

1. Customer-Driven vs. Company-Driven

Traditional organizations tend to make their decisions based on what is most convenient for them, rather than what is wanted and expected by their customers. Being customer-based means gathering information from customers/clients and modifying services and processes to meet those needs as well as possible.

2. Long-Term vs. Short-Term Orientation

Traditional organizations tend to think and plan with respect to short-term outcomes, while TQM organizations tend to think in much larger time spans. Also, successful TQM organizations make a long-term commitment to the principles of TQM, rather than looking at TQM as a program, something with a beginning and end. This means patience.

3. Data-Driven vs. Opinion-Driven

Traditional organizations tend to be managed by gut feel, or by opinion. They guess at what their customers want, and guess at the costs of waste, etc. TQM organizations base their decisions on data they collect; on customer needs, on waste, on costs, and on the sources of problems. While judgment is always involved in any decision, TQM organizations begin with the data, not with the solution.

4. Elimination of Waste vs. Tolerance of Waste

Most organizations operate with a high degree of waste and inefficiency. Traditional organizations consider waste, whether it is in time, materials, etc., as a normal part of their operation. TQM organizations are very

active in identifying wasteful activities, and eliminating them.

5. Continuous Improvement Vs. Fire Fighting

Traditional organizations tend to address problems with the way they do things only when there is a major problem or crisis. The watchword in traditional organizations is: "if it isn't broke, don't fix it", except that often it is broke, but nobody is paying any attention. TQM organizations are always looking for improvement, and are constantly engaged in problem-solving to make things better.

6. Prevention vs. Inspection

Traditional organizations tend to fix problems after the fact. Rather than trying to prevent problems, they catch them after the fact, which is very costly. TQM organizations work to prevent problems and errors, rather than simply fixing them.

7. Cross-Function Teams vs. Fortressed Departments

Traditional organizations tend to have sub-units that work autonomously and with little communication or involvement with other units. In TQM organizations, there is more use of cross-functional teams; teams convened for a particular purpose or purposes, with representation from a number of units or levels in the organization. The use of cross-functional teams means that input is gained from parts of the organization that need to be involved.

8. High Employee Participation vs. Top-Down Hierarchy

Traditional organizations tend to have very restricted communication and decision- making patterns. Employees are told what to do, rather than being included in figuring out what to do. Information tends to flow from top to bottom. In TQM organizations, employees are much more actively involved in both the decision-making and communication processes. Information flows both top to bottom and bottom to top. For that matter,

information also flows sideways.

9. Problem Solving vs. Blame

Traditional organizations tend to look to affix blame for things that go wrong. TQM organizations attack the problems in their organizations rather than the people. They fix things.

10. Systems Thinking Vs. Isolation

Traditional organizations tend to see the parts and processes of their organization as single things, unrelated to other part of the organization. TQM organizations tend to recognize that most often, problems arise as a result of multiple causes, and that sub- units are interdependent. TQM organizations tend to see problems as a result of the entire system.

11. Leadership vs. Management

Traditional organizations tend to see people as objects to be managed, told what to do, disciplined, tracked, etc. TQM organizations exhibit more confidence in staff and more trust, and expect MORE from them, not less. That's a good starting point. There are probably a number of other comparisons to be made, but that gives us some common ground for discussion.

CHAPTER 2

KEY QUALITY IMPROVEMENT CONCEPTS AND THEORIES

2.1 The Quality Movement – *The Deming Cycle.*

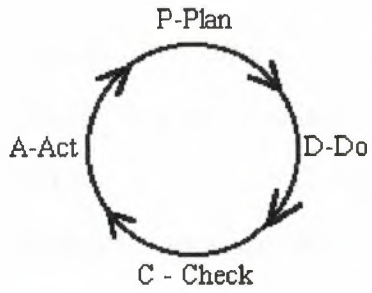
The concept of quality has been with us since the beginning of time. Artisan's and craftsmen's skills and the quality of their work are described throughout the history. However, it was not until the advent of the mass production of products that the reproducibility of the size or shape of a product became a quality issue.

Quality, particularly the dimensions of component parts, became very serious issue because no longer were the parts hand-built and individually fitted until the product worked. At that time quality was obtained by inspecting each part and passing only those that met the specifications. This was true until 1931 when Walter A. Shewhart, a statistician at the Hawthorne plant at Western Electric published his book, *Economic Control of Quality of Manufactured Product.* This book is the foundation of modern statistical process control (SPC) and provides the basis for the philosophy of Total Quality Management or Continuous Process Improvement for improving processes.

W. Edwards Deming, Then in his 30's, worked as Walter Shewhart's assistant. At that time Shewhart developed a never-ending approach toward process improvement called the Shewhart Cycle (also known in Japan as the *Deming Cycle* and most frequently today in the United States as the

Plan-Do-Check-Act or PDCA Cycle). This approach emphasizes the continuing, never-ending nature of process improvement.

The PDCA cycle is really a simple feedback loop system.



PLAN – a plan is developed to improve a process.
DO – the plan is tested in a small field test.
CHECK – the results of the test are assessed.
ACT – if successful, the plan is implemented.

Figure 2.1.The Deming cycle.

The improvement process begins again and the cycle is repeated. The repetition of the PDCA cycle, with each cycle producing improvement, leads us to the continuous improvement.

2.2 The Major Quality Improvement Concepts.

There are five major quality improvement concepts that have evolved with the application of the TQM:

1. Process and Systems.
2. Customers and Suppliers.
3. Quality.
4. Benchmarking.
5. Teams and Team Work.

2.3 Benchmarking in Higher Education... Is it Applicable?

Due to its reliance on hard data and research methodology, benchmarking

is especially suited for institutions of higher education in which these types of studies are very familiar to faculty and administrators. Practitioners at colleges and universities have found that benchmarking helps overcome resistance to change, provides a structure for external evaluation, and creates new networks of communication between schools where valuable information and experiences can be shared. Benchmarking is a positive process, and provides objective measurements for base lining (setting the initial values), goal setting and improvement tracking, which can lead to dramatic innovations[5]. In addition, quality strategies and reengineering efforts are both enhanced by benchmarking because it can identify areas that could benefit most from TQM, and make it possible to improve operations with often dramatic innovations.

Despite the majority of positive recommendations for using benchmarking and successful examples of its current use, there are critics of its applicability to higher education. The stated objections include the belief that benchmarking is merely a strategy for marginally improving existing processes, that it is applicable only to administrative processes (or only to teaching practices), is a euphemism for copying, is lacking innovation, or that it can expose institutional weaknesses[6]. These concerns are largely unfounded because benchmarking can radically change processes (if warranted), apply to both administration and teaching, adapt not "adopt" best practices, and if the Benchmarking Code of Conduct is followed, confidentiality concerns can be reduced. The Code of Conduct calls for benchmarking practitioners to abide by stated principles of legality, exchange, and confidentiality. Benchmarking can make it possible for the industry to improve processes in a "leapfrog" fashion by identifying and

[5] Shafer, B. S., & Coate L. E. (1992). Benchmarking in Higher Education: A Tool for Improving Quality and Reducing Cost. 26(5), pp. 28-35.
[6] Brigham, 1995; Dale, 1995.

bringing home best practices, and therefore offering a way of responding to demands for cost containment and enhanced service quality in a cost-effective and quality-oriented manner[7].

2.4. Interpretation of Deming's 14 Points of Management

2.4.1 The Deming Method

Deming was an advocate of ideas proposed in General Systems Theory used in engineering and applied to other academic disciplines. The General System Theory suggests that a unit of study as a system can be identified by a cyclical INPUT-PROCESS-OUTPUT-FEEDBACK cycle.

The difference that Deming applied to the systems concept for the Deming Method is the presence and importance of the customer as the ultimate definer of quality of a firm's products or services. Because of the systems nature of this method, the results of acquired feedback from the customer become criteria for modification of product design, changes in input (raw material) specification, alterations in production processes, or changes in output (including distribution). The goal is to ensure that the total product package is constantly monitored and improved to meet or exceed customer's changing expectations for product performance. For organizations to successfully incorporate this method, Deming proposed and has refined his 14 POINTS.

A university in the U.S.; Samford University of Birmingham, Alabama, has adopted the 14 points system of Deming with considerable enthusiasm and success. The University has gained in standing within the number of

[7] Shafer, B. S. & Coate, L. E. (1992). Benchmarking in Higher Education: A Tool for Improving Quality and Reducing Cost.

rating systems, agencies and publications. But is undeniable that at Samford University, and at a number of other institutions throughout the world, the real value adopting some comprehensive quality system is that people of those institutions begin to contemplate what is required for them to become a quality organization. What follows is a listing of the 14 points with a basic interpretation of each.

2.4.2 Deming's 14 Points of Management

1. Create constancy of purpose toward improvement of product and service, with the aim to become competitive and to stay in business, and to provide jobs.

At this new economic era the key is competitiveness. The markets are global, are worldwide and if you intend to stay in business, you need to be competitive. To be competitive, the best way is to improve the products or services you offer. But not only improve one time, you need to be constantly improved in order to offer the best of a kind in products or services. Today, for example, an American company competes against, not only Japanese but Canadian, Mexican, European, etc. To be successful a firm must be competitive.

2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.

The Western management certainly is behind the Oriental management. We are in a new economic era with more competition, Global markets, technology improvements, and the challenge is huge. Companies and people in a country need to adopt a new philosophy considering cost reduction, teamwork, quality and leadership. If we do not, we will see other

countries taking advantage from our industry and us.

3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.

The first thing we need to change is our thinking. To achieve quality does not mean inspection 100%. Inspection costs are high and we need cost reduction. Inspection takes time and we are looking for better timing, better delivery. We have to think in quality on Product Design not at the end of the production process but at the very beginning: when a product or service is designed. Quality assurance must be considered since the first stage of production; and probably at the end of the process no inspection will be necessary.

4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost.

Move toward a single supplier for any one item, on a long-term relationship of loyalty and trust. To be competitive it is very important to have lower costs. We have to minimize total cost, not only the price. Remember that defective units are cost; delay in delivery is cost, excessive inventory is cost, etc. To minimize total cost long-term relationship with suppliers is really important. If you as a customer help your supplier to develop, to improve the quality, you will receive better products so you will win and your supplier too.

5. Improve constantly and forever the system of production and service, to improve quality and productivity, and thus constantly decrease costs.

As discussed in the previous point, the total costs involved in the production/service system are high. Continuous improvements in the

system will help lower costs through increased productivity and efficiency. This, in turn, should help keep the costs manageable.

6. Institute training on the job.

The Deming video noted that there is a difference between education and training. Management should recognize this and provide the necessary training to their employees. Training should also be ongoing. Continuous improvement of the work force will contribute greatly to the success of the organization.

7. Institute leadership.

The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul as well as supervision of production workers. Leadership empowers everyone. It promotes excellence in everything "we" do. Deming suggests that through leadership at all levels the organization will be able to achieve success. The old style of management is out.

8. Drive out fear, so that everyone may work effectively for the company.

Fear is both a motivator and de-motivator. Fear motivates, only to the extent that the "job" is done to avoid repercussions. It serves as a greater de-motivator as it oppresses individual's creativity. Ultimately the organization suffers in such a negative atmosphere.

9. Break down barriers between departments.

People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service. Barriers impede sharing and cooperation. Organizations today should eliminate the "department barriers" that isolate employees. This isolation inhibits team play that is an essential element for

organizational success today. The "team" philosophy can be used outside of sports to create the same cohesiveness within organizations that champion sports teams possess.

10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity.

Such exhortations only create adversarial relationships, as the bulk of the causes of quality and low productivity belong to the system and thus lie beyond the power of the work force. Building quality into operation eliminates the uses of slogans and targets because of continuous organizational improvements.

11. Eliminate work standards (quotas) on the factory floor. Substitute leadership.

Improve operation skills and eliminating quotas will allow employees to experience different tasks on their job. By implementing some of these, employees will feel productive therefore; will contribute more to the organization. Eliminate methods can improve product and services quality. Methods are operating systems used by the organization during the actual transformation process.

12. Create Pride in the job being done.

1. Remove barriers that rob the hourly worker of his right to pride of workers of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality. All successful quality enhancement programs involve making the person responsible for doing the job responsible for making sure it is done right. Then employment involvement is a critical component in improving quality.

2. Remove barriers that rob people in management and engineering of their right to pride of workmanship. This means, inter alias, abolishment of

the annual merit rating and of management by objective.

13. Institute a vigorous program of education and self-improvement. Increasing the flexibility of an organization's work force by training employees to perform a number of different jobs. For instance, cross training allows the firms to function with fewer workers, because workers can be transferred easily to areas where they are most needed.

14. Put everybody in the company to work to accomplish the transformation.

The transformation is everybody's job. The involvement might range form an individual worker being given a bigger voice in how she or he does the job, to a formal agreement of cooperation between management and labour, to total involvement throughout the organization. Take action.

CHAPTER 3

WHY IS CULTURAL CHANGE IMPORTANT IN TQM?

3.1 The Key to the Success Of TQM.

The real key to the success of TQM is people. If the people in the business, at every level, are not committed to producing a quality product or service, then your TQM initiative is doomed to failure. It is relatively easy to change technology, systems and procedures. It is much more difficult to change people's attitudes to work, their perceptions of management, their values, their motivation and their behaviour. Yet this is exactly the challenge confronting you if your company is committed to TQM. The culture existing in many organizations is simply not conducive to the achievement of excellence. There are many organizations where people recognize that the culture in which they work is one of "covering our backs"; "finding someone to blame"; "lack of trust"; "people being kept in the dark"; "us and them"; "nobody listening".

Changing such a culture to one in which people work together collaboratively takes a lot of energy, commitment and time. For this reason, this is the part of the TQM jigsaw that is often neglected. A TQM trainer's, primary responsibility is therefore to confront people at all levels of the business with the negative results of their own behaviour and get their commitment to changing behaviour. So how do you do this? For an organization which is at the early stages of TQM and just beginning to examine the implications of their present management style and

organizational culture, the board or senior management team should think quite deeply about three questions:

What is a TQM employee? How does this description differ from the way our employees behave now? What is a TQM manager? How does this differ from the way our managers behave now? What are the implications for the board?

3.2 What is a TQM Person?

Of course there is no such thing as a TQM person. All people are different and TQM organizations are not full of clones of a certain kind, quite the contrary. However, TQM does require people to have a commitment to quality and to the company, and their behaviour needs to reflect this. Generally speaking, people will do what they are rewarded for doing. So, when embarking on TQM the senior management team needs to clarify their picture of how people will behave in their TQM organization. If they compare this ideal with how people actually operate now, this will help them develop a strategy for culture change.

3.3 What is a TQM Manager?

If your business needs people who are committed to quality and to the company then there are likely to be profound implications for the way they are managed. TQM requires a very different management style from that which has been traditional in many organizations. Traditional management has placed a great deal of emphasis on controlling people. This is evidenced in the importance placed on piecework, clocking in, close supervision, etc. TQM, however, places the emphasis on empowering

people, helping them build the skills, confidence and attitudes to take responsibility for their own work, rather than forcing them to do it. Before going on what we should do is to take a sheet of paper and list the skills, attitudes and knowledge required of managers if they are to develop and successfully manage TQM people. Than, try to compare the characteristics of managers who adopt a "traditional" management style with those of a TQM management style. Think about attitudes and approaches to the customer, the employee, and the production process. Consider areas such as customer-centeredness, loyalty, accountability, change, culture, leadership, service and improvement.

3.4 How Do I Go About Influencing the Culture?

Cultural change is a very complex business, which requires a lot of commitment, a lot of patience and a desire to succeed. However, without a thorough examination of the management style and the culture of the business, TQM is likely to be doomed to failure. The culture of an organization is all the interactions, which take place between people. It is about how people work together, their relationships and the feelings engendered by their behaviour. The ***culture of an organization*** includes:

- Management style
- Who makes decisions and how
- Communications -- one-way or two-way
- Who participates in decision-making
- Status
- Perceived power or powerlessness
- Whether people feel listened to
- How people react to new ideas -- constructively or destructively

- ❖ Opportunities for individual development and growth
- ❖ The degree of support, openness and trust
- ❖ The amount of feedback people give to each other
- ❖ How conflict is handled -- constructively or destructively
- ❖ Whether people compete with each other or work collaboratively
- ❖ How problems about gender, race and disability are handled
- ❖ The way feelings are handled
- ❖ Involvement
- ❖ Commitment
- ❖ Motivation.

Many organizational problems have to do with culture, how people behave and feel. Yet very few organizations really attempt to deal with these issues. This is probably because they are very difficult to quantify and impossible to control. But if you are seeking excellence in your business it is vital that you promote an organizational culture, which facilitates excellence. *Thus an essential component of TQM is the introduction of personal change programmes, which help everyone in the organization -- directors, managers and employees -- to work on elements of the culture which work against business success and the vision.*

3.5 Basic of an Academic Quality Culture

Before commenting briefly on the basics of a culture of academic quality assurance, it is worthwhile to reflect upon some of the assumptions guiding such development. It is true that unless the following assumptions are shared by colleagues, then the process will be flawed to a major degree; indeed, the quality system will very likely be an imposition from above - that is, from a "top-down" rather than a "bottom-up" perspective. The

ideal situation is a balance of both perspectives, in order that the quality system has solid senior management support as well as a dynamism, which keeps the system running. Such dynamism can only result from the voluntary efforts of staff committed to excellence in all their academic quality culture, therefore include: the application of appropriate standards:

- a focus on continuous improvement;
- primary role of the university, namely: integrating, communicating and applying knowledge resulting from the research process;
- the presence of a system, which is sensitive to the special nature of the teaching and learning environment, as well as to the organizational climate.
- an approach whereby quality assurance processes provide a stimulus to staff development;
- the availability of expert staff who are able to work confidentially with individuals and groups on the improvement of teaching and learning quality;
- the likelihood that new approaches build upon existing practices, where possible and remedied deficiencies in system documentation and observable processes take place, e.g. validation recommendation for course and teaching process improvement;
- the adoption of an ongoing programme of external advise to assure maintenance of standards and programme improvement;

3.6 Informal Processes Which Facilitate A 'Quality' Culture

It is the informal processes which complement the formal committee system and also promote a climate of collegiality amongst academic staff,

and perhaps even more so between staff and students. A university could pay a special attention, to engendering in the learning community, the desire to communicate better and more frequently in ways, which support the more formal channels. In this context, the following are some informal processes:

- ❖ Student opinion surveys of the extent to which, for example, the General Education programme provides an enriching and contrasting perspective from which to examine personal, professional and social issues;
- ❖ Informal staff working groups which review individual parts of a course to assist colleagues to become more fully involved in discussion and policy formulation;
- ❖ 'Off the record' contacts with members of the wider community, but including employers and alumni, to seek useful ideas and suggestions to supplement the more structured consultation that occurs during regular internal review of validation exercises;
- ❖ Requests for former graduates and staff in sister institutions to critique our syllabi and teaching methodologies, to ensure that currency and appropriateness are maintained;
- ❖ Close and amicable relationship between teaching and support staff across the College because of the role this informal network plays in providing better-coordinated and targeted learning services for students;
- ❖ 'Open agenda' student-staff forums on issues that have arisen and might not have been discussed in consultative committees, or at the department level;
- ❖ Peer consultation and review in the form of:
  - informally-organized workshops to evaluate the experience of

conducting a particular subject and especially to consider the views of colleagues responsible for the subject in the past, or those preparing to do so on individual or team basis;

- classroom observations and feedback organized by staff teaching the same course, on a reciprocal, voluntary and informal basis. Feedback is oral or written and structured in the sense that it focuses on learning objectives, teaching methodology, learning tasks and classroom interactions.

CHAPTER 4

THE QUALITY CONCEPT IN HIGHER EDUCATION

In designing a quality management system, the college or university must investigate the prevailing systems currently operating in industry since they have become the norm against which other approaches will be judged. But this investigation reveals that a number of questions will be raised to which there are no adequate answers when such systems are applied to academia.

Should higher education be assessed by the same standards and practices as industry, using the ISO 9000 program or Baldrige criteria? That is, should academia require an effective operation of a periodic internal audit with regular management review or measure its operation against the seven Baldrige criteria with special emphasis on the customer? If so, who is the customer higher education must please? Is the employer the customer? If so, why does this customer not pay for the education? How can the employer be the customer if the employer does not directly receive the service provided by the institution? Is the student the customer?

How can a student, who comes to the college/university to acquire knowledge he/she does not possess, be a customer in the commercial sense? How can this customer determine what the content of the degree program should be? If the student is the customer, why does the student not only pay for the service but take on the burden of working to receive the service for which he/she pays? How do you apply industry standards to a service that does not have the same basis of measurement? How does one compare quality among institutions whose student populations differ in

admission standards, whose faculty are employed to accomplish different tasks, whose resources vary widely in value and number? How does one establish equivalencies among institutions whose tuition rates vary from zero to $25,000.00 per year, or whose endowments in some cases exceed billions versus those who have none?

None of the above questions has been answered conclusively, nor is the list of questions all inclusive of what quality is in higher education. However, the above "questions without answers" do illustrate how elusive is the issue of quality determination in higher education.

4.1 The Main Forces

Many pursuing the issue of quality in higher education are driven by internal or external political concerns that have little to do with quality.

For example, financial aid default rates or the perceived imposition of "diversity" on institutions of learning have become the subject of quality

The other main forces affecting higher education are the industry, the economic situation (recessions and shrinking resources) as well as the accreditation associations (which have engaged in discussions that resulted in more prescriptive "standards").

In Higher Education in a Learning Society, it is noted that "...colleges and universities ought to be of service to their communities in ways that range from assisting with economic development to providing educational programs to better preparing local elected officials for their jobs".

According to this report, the following trends are emerging:

(1) The occurrence of structural changes;

(2) The appearance of alternative educational providers;

(3) A blurring of boundaries between what is academic and what is

business;

(4) A blurring of traditional distinctions between teaching, research, and outreach/extension;

(5) The adoption of a variety of change strategies;

(6) The development of new approaches to teaching and learning;

(7) The use of creative financing;

(8)The development of special programs for specific populations

4.2 The Industry

In USA as early as 1985, academicians had joined with industry leaders to help determine criteria, structure, funding, and processing for a National Quality Award. This group based its award structures on those standards and processes utilized by the Total Quality Management system. As a result, the emphasis on customer satisfaction became paramount. Indeed, in the original criteria published for the Baldrige Award, the customer satisfaction category carried a total of 300 points, twice the amount for any other criterion[8]. Industry saw itself as a customer of higher education and began to actively engage itself in curriculum matters. Educators, influenced in part by its need to maintain adult markets, sought out industry's aid by forming Business Advisory Boards within schools of business. It accepted the fact that industry was in reality the customer.

The entrance of industry into the content base of degree programs focused on industry's perceived needs, in addition to non-degree and certificate programs created especially to respond to business and industry requests. Such actions opened the door to industry's investment in quality control and management. As educators researched and studied the totality of the

[8] DeCarlo, Neal J. and Sterett, W. Kent. (1995). Histoty of the Malcom Baldrige National Quality Award, p.87.

quality movement as it was affecting industry, they found that practitioners and academicians had to know about a multitude of national and international issues related to quality: ISO 9000 series which gained prominence in the latter half of the '80s, the International Quality Movement which represents more than 80 nations accepting quality standards; the Baldrige Awards criteria concurrence on international standards regarding the environment and the use of technology; the need for common definitions and language, and the possibility of international accreditation[9]. Many efforts have been made to introduce elements of these quality concerns into the USA schools and to a much lesser extent into higher education[10].

4.3 Entering Quality

It is clear from the research done to date that the characteristics of total quality management that are standard in industry are not easily adaptable to the college/university system. It seems possible to adapt much of what total quality management attempts to achieve in the administrative functioning areas of a university, but it seems just as evident that it is extremely difficult to adapt these characteristics to the academic side of the house.

Total Quality Management presumes that business and industry respond to the customer's specifications and expectations in developing a product. In academia the customer also is, in a very real sense, the product. That is to say, it is the transformation of the student from the point of entry to the degree program to the point of completion that reflects the totality of the college/university experience, that constitutes the "service" provided by the

[9] Richards, Dale O. (March 1995). ASQC/ Education Division and Needed School Changes.
[10] Burke, Timothy. (March 1995). A competitive Public Education System; Olian, Jody Y. (1995). Total Quality and the Academy: Problems and Opportunities in Quality in Higher Education.

institution. This entry into the entire college atmosphere with all of its component elements - degree major, general education courses, academic club activities, advising, counseling, intramural and intercollegiate sports, laboratory experience, field experience, study abroad -- transforms the student. The transformation is not only difficult to define, but difficult to describe. Existing assessment instruments can measure certain aspects of it, but nothing exists to define or describe the totality of the college experience. As a consequence, the process as it currently functions is a gate-keeping process and not necessarily one that can be used to determine quality achievement.

It is also not clear in academia whether there is one product or multiple products. If the student is a product because the student goes through a transformation as a result of the service provided by the degree program and/or the college, it is also clear that the degree program itself, the credential, the certificate, or even the intramural sports program is, in its own way, a product. It is even possible to understand individual courses that compose any programs as a product in their own right. Since students take varying courses in arriving at a point where each receives a bachelor's degree, the composite elements or ingredients that make up the product are not the same and consequently, the probability that the student is transformed in the same manner cannot be an expected outcome.

It is also clear in academia that the mission of the institution is of prime importance. Its service to its constituents, indeed the very fact that it has constituents, depends in good measure on what its mission is. A Baptist College, for example, will be attractive to students and supporters of the Baptist religion. An institution geared toward technology and engineering is not going to attract students who are interested in the liberal arts. It is

obvious, therefore, that the institution's mission drives the kinds of products or degree programs it offers. Customer satisfaction is dependent upon their attraction to and acceptance of the mission of the institution. Students come predisposed to the product.

4.4 Continuous Improvement

Characteristics of TQM such as continuous improvement have been a hallmark of higher education since its inception. Built into most institution is not only an on-going accreditation review, which occurs every four to eight or ten years, but program reviews occur every four to five years. In addition, new courses needed to incorporate change in discipline-based subject matter are added periodically. Professional programs can be affected on a regular basis by changes within the area of study whether that be business, public administration, health services management or the law. In addition, scholarship and research add new dimensions to the content areas of disciplines every day. The result is a continuous need for on-going research that will incorporate the new learning into the product being provided. Taking these various aspects of TQM into account, it's clear that higher education, in terms of its academic delivery program, (which is the essential ingredient that distinguishes higher education from other functions), is not readily adaptable to the TQM formatting. As Brent Ruben notes: "But, unfortunately, the shift to a wholly customer-driven approach to curriculum development and delivery simply trades one set of problems for another. To what extent can we rely on the expectations and requirements of students-as-customers as indicator of quality? Will students...require, expect, or 'delight' in courses that probe their thinking beyond familiar limits...? Will students, parents, potential employees be

able to determine if a course or the instructor is effectively preparing them for subsequent courses? … for the workplace? etc...."[11]

4.5 Perceptive Of Quality

Ruben's observations make clear the dilemma faced by institutions attempting to address quality in higher education. Each institution must face the issue from two reference points: how quality is understood at the institution and how it is perceived more universally in higher education as represented through the accreditation associations.

Therefore, it is more important for us to investigate other approaches than to try to force this slipper onto the foot of higher education. Determining quality in degree programs and in the delivery of degree programs requires responsiveness then to two stakeholders: a) the institution (embracing all of its constituents) offering the degree as it reflects the mission or purpose of the institution; and the external agency(s) that serves as overseer of generally or universally accepted standards applicable to the degree. The reality of this statement arises from two distinct facts: a) quality cannot be achieved if the program offered does not fall within the purview of the institution's mission or purpose; and, b) the mutually agreed upon standards accepted by member institutions of an accrediting association will determine whether the program and institution remain in good standing.

Arguments for (a) above will be presented in the ensuing pages describing the Heuristic Quality System[12]. The argument for (b) is both practical and qualitative. It is practical because of the consequences of not responding to standards set by an association established for the purpose of institutional review. If an institution wishes to be recognized as meeting the standards of

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[11] Ruben, Brent D. (1995b). Defining and Accessing Quality in Higher Education: Beyond TQM.
[12] "Heuriskein" is a Greek word, which means, "to find out".

other higher education institutions, then it must conform to those standards. Qualitatively, it makes sense because more than a hundred institutions have concurred on what constitutes a bachelor's degree or graduate degrees. They have also concurred on what constitutes appropriate academic support for degree programs. In short, the industry experts have arrived at a mutually acceptable description of how quality can be assessed. While these may be minimal standards, they determine that all members have met accepted levels of quality recognition. One might compare these standards to those established in industry in the ISO 9000 program in which expert representatives of industry grapple with and come to consensus on a series of criteria to be used to determine quality.

CHAPTER 5

THE HEURISTIC QUALITY SYSTEM

The next topic that I will be dealing with, describes a quality management system that achieves both of the above described, goals in that it responds to both stakeholders. It is a system designed to provide quality determination throughout an academic institution by suffusion, specifically in the academic division where degree programs are housed.

The opening section presents the philosophical premises on which the system was built. It incorporates many of the elements fostered by TQM but avoids the conflicts of that system where it runs counter to the realities of program delivery in an institution.

In the Heuristic Quality System the emphasis is on placing responsibility for the degree program in the hands of those knowledgeable enough to design it using input from a variety of stakeholders. Academia customers, as is true of those in medicine and law, depend on the experts to determine what they should learn. They do not come to the service provided with predetermined understanding of the product. Secondly, the system utilizes teams to achieve its goals, both those related to design and those related to delivery. Third, it assumes a totally effective process of implementation that can be assessed, resulting in data that, in turn, can be used to continually improve the product and its delivery. Therefore, while not embracing the consumer determined focus of the industrial model, this total quality system does achieve an effective management of continuous quality improvement.

The Greek word "heuriskein" means, "to find out." It is used here to reflect the mental attitude that is investigative in nature. Since quality literally cannot be defined[13], it is necessary to seek out what distinguishes quality in a thing. The essence of a thing determines its quality; that which characterizes it, that which distinguishes it from something else.

To establish standards of quality determination, it is necessary to understand the means by which quality is achieved. Achieving quality depends on:

(a) quality conceptualization and (b) process effectiveness

Each of these steps can be applied to the delivery of academic programs/services at colleges and universities. Each can be documented so that it is possible for others to appreciate the quality of the program being delivered.

At this point, it's important to introduce how an understanding of these steps, the basis of the Heuristic Quality System, reflects the spirit of the quality standards contained in the accreditation handbook published by the Western Association of Schools and Colleges. Two points need to be made here.

First, this Handbook reflects the concerted deliberations of over 140 institutions as they set base standards for quality determination of degrees and programs that would apply at all institutions.

This means that they reflect a level of general acceptance in the industry. Second, the WASC Handbook, while unique to the Western regional district, contains standards that have been generally accepted by all accreditation regions in USA. In short, the base understanding of quality reflected in all accreditation areas is comparable.

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[13] The dictionary tells us is not quantifiable.

The areas that must be addressed to achieve quality in the delivery of degree programs, on and off-campus, contain the means by which the standards required for accreditation can be met. "Quality Conceptualization" will ensure that the standards described in the WASC Handbook as "2.A" and "4.E" are achieved.[14]

2.A "The institution is guided by clearly stated purposes that define its character, are appropriate for higher education, and are consistent with commission standards." (Institutional Effectiveness)

4.E "All off-campus and other special programs providing academic credit are integral parts of the institution and maintain the same academic standards as regular campus programs. Their functions, goals, and objectives are consonant with those of the institution and maintain the same academic standards as regular campus programs. Their functions, goals, and objectives are consonant with those of the institution and lead to academic accomplishments at least equal to those attained by traditional practices. The institution maintains direct quality and fiscal control on all aspects of all programs and provides adequate resources to maintain this quality."

5.1 Quality Conceptualization

"Quality Conceptualization" must take place in two phases:

1.As the product or service to be created is one with the purpose and/or mission of the business /industry /agency/ institution providing it; and
2.As the individual(s) responsible for creating the product conceptualize(s) the function and form of the product or service.

[14] Western Association of Schools and Colleges, 1998

No educational institution should decide to offer a product or service that is not compatible and consistent with the purpose or mission of the enterprise. This is an essential point. It has been obvious since the mid-80's that the issue of "who's in charge" in determining what an institution offers is very germane to the effectiveness of the product (the program being offered). This is particularly true of continuing education divisions where some institutions have permitted independence of operation. According to WASC handbook it's clear that the faculty must determine the content of the degrees offered, not administrators. It is also clear that institutional integrity depends on the control it asserts over its operations. Appropriateness of degree program to *Mission is, therefore, of central concern*. It is not possible to understand and judge "quality" in a product or service if it is not an appropriate product or service of the provider.

Is the degree, for example, an appropriate one for this institution to provide, or is it totally out of character with the institution? If it is out of character, then it cannot be "of the essence of the thing"; it is not part of what "distinguishes" that thing from others. Hence it does not meet the criteria of quality.

Phase two of the "Quality Conceptualization" process moves to the conceptualization of the construction of the product. Once the organization has decided on the value of the product as it is consistent with the mission of the organization, then it must identify who is to "construct" the product. Obviously, faculty will be the individuals responsible for "constructing" the courses or degree programs to be offered by an academic institution. The accreditation associations require that faculty be in charge of this process.

The individuals identified to construct the degree program must determine conceptually what constitutes the quality of the product to be

designed. They become the "Program Team" empowered by the department to design the product. This step follows whether the product is a course, program of study like General Education, a degree, a credential, or a service to be offered by the institution. The criteria used to determine the quality will differ depending on the nature of the product. What will be used to determine quality in a course will not be the same as that used to determine quality in a degree, yet the basis of that criteria remains the same: *a subjective understanding of the product as it is a functioning "thing" composed of ingredients that, as a consequence of a production process, results in a recognized whole, the form of the product.*

Once a degree program has been developed, it becomes part of the Quality Management System. As a consequence, the full time faculty responsible for developing the degree oversee five areas of academic administration in its implementation and delivery;

(a) Approval of all faculty teaching in the program;

(b) Collegial review of all faculty teaching the program;

(c) Orientation of all faculty teaching in the program;

(d) Design of all course outlines and review of all syllabi;

(e) Program review.

Each of these areas requires that a process be established to achieve these goals. Each must be documented and monitored. The responsibility for the monitoring begins in the Vice President for Academic Affair's office through the respective Deans. Data collection on the areas is monitored in the office of Quality Assurance.

5.1.1 The Quality Management Systems-Implementation

How does an institution implement the heuristic quality system? The

following discussion will illustrate one institution's model as it addressed the necessary steps to achieve quality. The faculty and administrators involved recognized that they were implementing the spirit and intent of the Western Association of Schools and College's standards as described in its Handbook.

The process began in the Spring term of 1987 becoming fully operational by 1993. It was assessed in process in 1991 and again when fully operational in February and March of 1995.

As it was noted by the experts who studied the process, step one in the Heuristic Quality System requires that the degree to be achieved is one congruent with the purpose of the mission of the institution, and, secondly, that the individuals responsible for developing it conceptualize the function and form of the degree.

To address phase one of "Quality Conceptualization", the University of La Verne (which is the university that applied the heuristic quality system), created a "Quality Management Manual" that described the university's understanding of quality as it related to the mission of the institution. That manual also contained all policies and procedures that guide the system as well as copies of the necessary forms to document compliance. The Manual guides all academic programs at the university, both on and off campus. This document accomplishes a number of things:

1.The University has implemented a guide, based on its mission statement, which has been accepted by all personnel. This ensures a relationship between product/degree and mission.

2.All degree programs fall under the guidelines itemized in the manual and ensure a consistency of product delivery.

3.No new degrees, nor the delivery of campus-based degrees, can be

implemented without following regulations stipulated in the manual. This requirement ensures compliance with institutional purpose.

5.2 QC—Control

Phase two of the "Quality Conceptualization" step requires control of the conceptualization, development, and implementation of the degree by full-time faculty (Program Teams) in the department from which the degree originates. This precludes creation and implementation of degrees by administrators or by part-time faculty without the supervision of full-time faculty. It also ensures compliance with the accreditation standards that require control of the degree programs by full-time faculty.

Given the complexity of a multi-schools university and the ensuing potential for uncontrolled delivery of off-campus programs, management and supervision of the academic affairs of a university emanates from the office of the Vice President for Academic Affairs. Overall supervision of the policies and procedures related to quality assurance is maintained through that office. While the supervision should be at this level, the control of the academic programs remains solidly in the hands of the full-time faculty members. Each Dean of the respective departments is responsible for general supervision of the degree programs that function out of his/her respective department. Management for the delivery of these degree programs to off-campus sites is the responsibility of the Dean of the School of Continuing Education. The Deans of Arts and Sciences, Business and Economics and Organizational Management work cooperatively with the Dean of Continuing Education to coordinate academic responsibility at the sites. All policies and procedures related to quality are documented in the "Quality Management Manual" issued by the Vice President for

Academic Affairs and monitored in the office of Quality Assurance, following implementation and coordination by the appropriate Deans.

All quality controls affect all academic programs both on and off-campus. The "Quality Management Manual" describes in detail the principal policies and procedures to be followed in maintaining the quality of academic programs delivered by the university. Adopting such procedures ensures that the standards stipulated by the Western Association of Schools and Colleges and other accrediting bodies concerning quality programming and faculty involvement in the delivery of educational programs is maintained.

The goal of the accreditation standards as they relate to off-campus programs, as expressed by the Western Association, states that degree programs delivered at off- campus sites should "lead to academic attainments at least equal to those attained by traditional practices." This goal of consistency in quality both on and off-campus is the central issue, the spirit of which must be the measure against which all other issues and interpretations of standards are evaluated.

The faculty and administration at the University of La Verne have interpreted the intent and spirit of the standard as it pertains to off-campus programs. This has provided them with the flexibility to focus attention on alternative ways of ensuring consistency of quality in off-campus programs rather than meeting an arbitrary quantitative ratio of full to part-time instructors or a "core" of library books.

Having had many years of experience with part-time instructors in professional programs, the University is convinced that the concern with part-time instructors in professional programs is not intrinsically teaching effectiveness. As the Western Association standards have emphasized, it is

rather whether they are properly oriented to the university's mission and to the program's philosophy, goals, and objectives. It is also imperative that the university maintain consistent monitoring and evaluation of course content and student outcomes. The emphasis on orienting, integrating, and evaluating part-time faculty is leading to a striking change in the role of the full-time faculty in departments.

In the remaining of this chapter I will explain how this system of faculty empowerment provides the requisite quality procedures and monitoring to ensure compliance with accreditation standards.

5.3 QC--Faculty Empowerment

In the effort to design specific procedural recommendations for meeting standards for off-campus programs contained in the Handbook of Accreditation and the University's "Quality Management Manual" new roles emerged that are fundamentally different from previous ones. The following list reflects current practice:

1. The number of full-time faculty members was expanded particularly in graduate professional programs delivered off-campus;
2. Whenever possible full-time faculty members are assigned to teach courses on a regularly scheduled basis at off-campus centers;
3. Full-time faculty approve the appointment of part-time faculty in their discipline and establish a collegial, mentor type relationship with them by visiting them each year. In these visits, the full-time faculty discuss program and course objectives, update the part-time faculty member on current literature, discuss teaching problems, evaluate in-class performance, and in general integrate the part-time faculty member into the department

and the University;

4. Part-time faculty mail a copy of their class syllabus to their mentor prior to the beginning of the class for review and input;

5. Part-time faculty attend at least one faculty meeting each year where full time faculty are present. Most part-time faculty meet with full-time faculty for about 7 hours per term;

6. Faculty development workshops for part-time faculty on teaching strategies for adults, literature updates in specific fields, and other faculty identified needs are conducted annually;

7. Selected part-time faculty, whose longevity in the program and academic credentials qualify them, are designated as "Senior Lecturers and Department Associates". This title expands their roles to include interviewing prospective faculty, orienting new faculty, conducting faculty meetings at the satellite centers, working with faculty concerns, maintaining focus and continuity in the Bachelor's or Master's programs, and providing special counseling resources to students;

8. The "Senior Lecturers" are invited to campus at least once each year to meet with the full-time faculty at a time when program goals and curriculum are being reviewed by the department;

9. At distant military bases and Centers, some full-time faculty positions have been created and these faculties have been given responsibility for integrating part-time faculty into the program and for representing the department's philosophy and program objectives to other faculty;

10. Outcome assessment strategies for selected degree programs for the purpose of monitoring the quality and consistency of these programs at each of the off-campus sites have been developed. The outcomes include such measures as comprehensive exams, culminating projects or papers,

standardized final exams in core courses, etc.;

11. Various technologies to facilitate the contacts by full-time faculty with part-time faculty in the field are employed including, FAX machines, e-mail, telephone, and most recently compressed video;

12. Departments with degree programs at off-campus sites are required to review these programs on a predetermined schedule and include them in their prescribed "program reviews" when scheduled for evaluation;

13. "Curriculum Books" for each professional degree program offered at off-campus sites have been designed and issued to ensure greater continuity of programs.

In the ways described above the University of La Verne believes that the quality and consistency of off-campus programs has been maintained in a manner equivalent to that of the on-campus programs.

The departments have taken full responsibility for the academic oversight of the programs that emanate from their department or school. Consequently, full-time faculty work in consort with part-time faculty in the delivery of degree programs to ensure maximum quality, comparability, consistency and coherence wherever the degree program is offered. This diffusion of responsibility and in collaboration among faculty and Center personnel results in a "Delivery Team.".

To achieve this level of control, the university has invested significant amounts of money in the development and support of resources on and off-campus. It has provided and is continuing to provide the necessary personnel to achieve this kind of management control.

These responsibilities are incorporated either into the regular workload by replacing teaching assignments, by extending contracts to 12 months, or by a stipend payment determined by the size of the program.

5.4 Policy On Communications Between Academic Departments And Off-Campus Programs

University of La Verne encourages the closest possible working relations between academic department/program chairs and departments on the one hand and off-campus program/center directors. Special Assignment Faculty, Department Associates, and Faculty Liaisons assigned to off-campus centers and programs join with on-campus regular contracted faculty to provide regular and continuous communication between academic departments and off-campus programs.

In addition, selected School of Continuing Education directors attend on-campus department meetings, and all faculty committees include SCE representatives.

SCE administrators, like other administrators at the University, are encouraged to teach part-time, if they have the appropriate credentials. This helps them keep current in the fields of their programs and brings them into more contact with on-campus faculty.

The Office of Quality Management provides an official, documented avenue of contact between academic departments and off-campus programs, but the many routine undocumented contacts which exist between on-campus and off-campus are at least as important, if not more so. The offices of the SCE Associate Dean, Assistant Dean, and Director of Academic and Student Services all provide especially important links between off-campus centers/programs and on-campus departments and committees.

5.5 Procedures For Communications Between Academic Departments And Off-Campus Programs

1. Off-campus program directors should meet with on-campus departments and program chairs on a regular basis and call or call upon them whenever they wish to discuss academic issues. On-campus program and department chairs should encourage this and make themselves available to assist off-campus directors on academic program issues.

2. The deans and Vice President for Academic Affairs are collectively responsible for seeing that sufficient Special Assignment Faculty, Faculty Liaisons, and Department Associates are appointed to provide direct academic support for all off-campus centers and programs.

3. Special Assignment Faculty, Faculty Liaisons, and Department Associates should develop close working relationships with the center/program director and faculty of the center/program of their appointment.

4.Academic departments should welcome off-campus program directors and faculty to their meetings, especially those dealing with issues directly affecting off-campus programs, such as curriculum building, schedule planning, etc.

5. Off-campus directors should sit on committees and task forces when asked, and seek to acquaint on-campus faculty with off-campus needs as well as to acquaint themselves with on-campus concerns.

6. Off-campus program directors are expected to provide any and all

information requested by the academic department/program chairs and departments about their programs.

7. Academic department/program chairs are expected to visit off-campus classrooms and sites on a regular, on-going basis to ensure that off-campus programs are being correctly delivered. In doing this they may enlist the assistance of Special Assignment Faculty Liaisons, and Department Associates.

5.5.1 Policy On Program Reviews

All programs offered by ULV are to be thoroughly and systematically reviewed at least once every five years following the outline provided in the "Program Review and Planning Process" document. Reviews are performed under the guidance of the academic deans in accordance with a prearranged schedule. When a program is reviewed, all aspects of its operation, off campus as well as on campus, are carefully examined. A final review of all program reviews is made by the Vice President for Academic Affairs.

5.5.2 Procedures For Program Reviews

1. It is the responsibility of the Dean's Council to develop and maintain a schedule for program reviews.

2. It is the responsibility of each dean to see that program reviews are begun and completed on schedule. It is the responsibility of the Dean of SCE to see that off-campus program directors cooperate with all scheduled program reviews.

3. Program reviews, which generally take a full academic year to complete, are fully described in the "Program Review and Planning Process" document. They examine courses, staffing, administration, budgets,

equipment, facilities, library resources, and all other aspects of the program as it is run on campus and off campus.

5.5.3 Policy On Program Evaluation

Complementary to the five-year program review is continuous program evaluation. Faculty teaching culminating activities, such as senior seminars and graduate seminars, meet annually with the program chair to review student performance and program quality. Program chairs review feedback from culminating activities, student evaluations, and collegial reviews each term and make a formal report annually to the department and dean. Using these evaluations and reports as a basis, program chairs, departments, and deans regularly make improvements to existing programs.

5.5.4 Procedures For Program Evaluation

1. Program chairs are responsible for convening all faculty teaching culminating activities each year to review student performance and program quality. Reports are made to the department and dean as appropriate.

2.Program chairs review student evaluations and collegial reviews each term and report to the department and dean as appropriate.

3.Once a year program chairs review feedback from culminating activities, student evaluations, collegial reviews, faculty specialists, site reviews, and other data to evaluate the state of the program. Program chairs are expected to report their findings to their department and involved off-campus directors.

5.6 Evaluation Of System

Evaluation of the ULV management system has been on going since

1991. The Western Association has sent a total of 21 evaluators to the University to view this system. These evaluators have visited virtually every site including Alaska and Athens. The final report following the February 1995 visit by 5 evaluators made these observations:

1. "Quality Management System, formerly known as Quality Assurance. Affecting virtually every aspect of the administration of the University of La Verne, the quality management guidelines are extensive, complex and still in progress. Taken as a whole, there is widespread acknowledgment throughout the university of the importance of quality management, and the team observed a uniformity of commitment to the quality guidelines. In its 1991 letter, the Commission referred to the University's opportunity to become a model of excellence in University education for adults at extended sites. The University is now very close to being that model."

2. "The doctoral programs at ULV are well-designed and capably implemented. They are models of collaboration and teamwork among both faculty and students. Through the teaming of full-time faculty and expert practitioners in the clusters, as well as a program of activities that combines individual work with team-based learning, the program has created a framework that brings people together periodically for learning and support, yet honors the need of adult professionals for flexible scheduling. As one student put it, 'here is commitment by the whole to the success of each part.' In sum, the doctoral programs at the University are model blends of theory and practice. They are carefully designed and competently delivered. Students are both supported and challenged. Faculty work in collaborative ways that are quite unusual in higher education. Faculty resources are adequate for the number of students currently enrolled, largely due to the additional support of cluster administrators and the tight

structure of the program itself. The University of La Verne has reason to be proud of these programs."

3. "The University has embraced the notion advanced in the 1991 team report of the full-time faculty member as off-campus mentor to part-time faculty. The results appear to be very positive. With the addition of faculty who are charged with supporting the part-time faculty in the off-campus programs, the number of collegial reviews had increased from a low of 24 in 1992 to a high of 116 in 1994. Full-time faculty approve the syllabi of part-time faculty. Faculty handbooks and course outlines have been prepared by full-time faculty in main campus departments as guides for the development of syllabi by off-campus faculty. Syllabi are carefully monitored to ensure that faculty members have met the standards set by the departments, divisions and schools.

The re-definition of faculty roles has also resulted in a 'new sense of ownership' as selected faculty members have been given increased responsibility for the oversight of academic programs. This new attitude has also served to break down the lines of demarcation between the off-campus programs and the main campus that was evident in 1991. This sense of responsibility has resulted in an apparent increase in the active concern of faculty about the quality of the work that is done under their direction."

4. "Part-time faculty are incorporated into campus life in many ways. They are invited regularly to faculty meetings and special events on campus, and many of them attend. Each of them has a faculty specialist assigned to him or her for mentoring purposes. Special sessions have been designed to bring together part-time and full-time faculty for the purpose of professional development and to promote collegiality. These sessions include bi-annual

department meetings, orientation sessions, workshops, task force meetings, and other occasions where full-time, on-campus faculty members meet with off-campus faculty. The subject matter considered at these meetings focuses upon aspects of pedagogy, including course development and assessment. The team believes that the University understands the significance of having full-time faculty control the curricula, while providing appropriate support to the part-time faculty. The improvements in this area have been substantial."

5. "Library usage by the University's off-campus student body has increased dramatically since the 1991. Library resources and staff have been increased. The testimony of faculty and students at the off-campus sites indicated a high degree of satisfaction with the services provided by the continuing education and library staff in this regard. Book and article requests are answered quickly, often within twenty-four hours. Library staff often got to the centers to discuss the use of the library and the options available with students. Each center has a CD ROM of the University's Wilson collection that is regularly updated. The "800" number received many favorable comments for the help students received in bibliographic searches and the general responsiveness of the library personnel. All off-campus faculties have been instructed to require library research in their course assignments. A survey of syllabi and discussions with faculty and students indicates that this requirement has been met in spirit and practice by most of the instructors, with some exceptions. The system employed by the University is technologically advanced for programs like this, and it appears to be working well as a distance learning resource. The bibliographic work of the graduate level students seems to be of quality. There is a clear level of improvement in the use of library resources. Once

again, the major addition to the Wilson Library now under construction will result in a doubling of library capacity and will, presumably, add to the resources presently available to the off-campus student."

6. "The five members of the visiting team have visited, studied at, and worked at two dozen different universities, and none of the team members has ever seen such a professional, responsive, complete delivery system as they saw at the University of La Verne. There are many reasons for the University to be proud. The University's management system is an excellent infrastructure, an excellent delivery system with lots of individual attention and responsiveness to individual students. The University's mission in the longer term could be fulfilled not with an on-campus plus an off-campus program, but with a single continuum of services that offers something to students of all ages, in a variety of formats, at a variety of sites, matching different needs at different points in the life cycle of the students. If the faculty are master teachers, if the University is an expert at assessment, and if the University can continue its delivery system to students of all ages, it will have something that few institutions will have. The University will not only be unique -- it will be important; it will be an example for many other institutions."

PART II

THE ADOPTION OF CONTINUOUS IMPROVEMENT MODELS IN HIGHER EDUCATION.

CHAPTER 6

THE FRAME FOR THE ADAPTION OF TQM IN ACADEMIA

6.1 Introduction.

Lately, there have been high pressures on higher education institutions on their accountability, assessment and institutional effectiveness. At the same time as mention previously, Total Quality Management (TQM) or as known by the Japanese, Continuous Quality Improvement (CQI) is applied to business and industry processes for quality improvement. Some universities and college apply TQM in areas similar in business or for a very specific purpose. Nevertheless, TQM should be applied to the most important part of the system –the heart-of it, the teaching and learning process, to improve the most crucial element of the learning environment. If the essence of education is teaching and learning, improvement efforts on other aspects as administrative and support functions will only superficially affect what happens in the classroom.

White[15] explains the need for TQM in Higher Education through an analogy to business: How long would a firm stay in business if it rejected its input (raw materials) at rate of 35%? How long would it stay in business if it missed its delivery dates by 25%? How long would it stay in business

[15] White, 1993

if 50% of its customers were unhappy with the product it was producing? The answer, of course, is "not too long". Yet, responding complaints about flaws in colleges and universities, some assume a defensive posture and ask, "How the response is to blame others, and to claim that we are different, or that TQM principles cannot be applied to us? "[16].

Carol Twigg[17] argues that higher education must reengineer in order to improve productivity and to serve new and broader constituencies. However, she does not broach the issues of reengineering teaching and learning; rather, she argues that, just as IBM achieved savings and efficiencies using technology to reengineer training, higher education can use technology to make teaching and learning more effective and efficient.

In the highly volatile politics of higher education finances (in USA) and goals, universities have reshaped their administrative and bureaucratic routines as they have redefined their purposes. A Los Angeles Times articles titled "Industry Becoming the Big Partner on U.S. Campuses … Colleges Put Themselves Up For 'Adoption' in the Private Sector", details some of the rewiring of academic priorities over the last ten years:

"The role of the universities in the 21st century is to transfer technology or ideas out of our labs into the commercial world," says Michael Hooker, the president of the University of Massachusetts…

"Intel is supporting the University of Arizona as if it were a group within Intel", says Ken Smith, dean of the College of Business … we're operating in a more constrained resource environment for higher education."

"IBM, Xerox, Procter & Gamble, Intel, Motorola, Milliken, and Martin Marietta have formed partnerships with universities to promote the use of TQM …

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[16] Lee, S. M. (1993).

[17] Carol Twigg "Improving Productivity in Higher Education – The Need for a Paradigm Shift" CAUSE/EFFECT, Summer 1992, 39-45.

6.2 Implications In Academia Settings.

The emergence of TQM in academia has led to a reassessment of existing practices. For example, in its original form, TQM aims to increase customer satisfaction and keep costs low. In the academic setting, TQM places greater emphasis on quality teaching than on low costs. Other issues include the following,

- **Customer Satisfaction – Students**.

Review courses for relevance, content and usefulness. Student's academic needs must be met.

- **Customer Satisfaction – Others.**

Employers hiring graduates must be satisfied with them. In addition, the government and parents also expect certain standards to be met.

- **Customer Satisfaction – Staff.**

  The needs of internal customers (e.g. co-workers and colleagues) should also be considered. In this instance, TQM deals more with interpersonal dynamics like team spirit synergy.

- **Quality Teaching.**

  This is difficult to define, measure and quantify. Standards, teaching methods, research output and other academic activities cannot be sufficiently graded to arrive at a working definition of "quality". At best, long-term studies of results and monitoring can help establish some means of measurement.

- **Cost.**

  Expenditure is another consideration. Current practices should be assessed to increase effectiveness and lower costs.

6.3 Essentials of TQM for Higher Education.

In spite of the caution concerning overly quick and indiscriminate of a "package" TQM plan for use in universities, there is much to be said for sensible well-considered TQM approach. There is no single way to structure or manage an institution of higher education in order to bring about excellence. There are multiple ways of achieving these objectives and the ways chosen must take into account the cultural setting in which the institution is found. It would be much easier if there were a single "gold standard" to be adopted, which could assure quality. Instead, there are different ways for different institutions in different cultural settings that have to thoughtfully be identified.

A Total Quality approach to running a university is necessary for the following reasons:

1. We live in an extremely dynamic world with depleting resources. Since universities have to equip learners to function to their fullest potential in such an environment, then the universities themselves must be dynamic and flexible.

2. The expectations of students, industry, parents and the public in general vis-à-vis educational priorities, costs, accessibility, programs, and relevancy, make it imperative for universities to undergo continual assessment and improvement.

3. Economic conditions have created greater concern about economic well - being and career flexibility. Universities have to respond to this real fear of career obsolescence and career inadequacy.

4. Funding resources for education are diminishing at a rapid rate. Universities have to find ways of cutting costs without cutting quality. There is a false notion that quality is expensive. Quite the contrary, quality

programs are very cost-efficient.

6.4 Education Criteria Purposes

The Criteria are the basis for organizational self-assessments for making Awards, and for giving feedback to applicants. In addition, the Criteria have three important roles: to help improve organizational performance practices, capabilities, and results to facilitate communication and sharing of best practices information among organizations of all types, to serve as a working tool for understanding and improving performance and for guiding planning and opportunities for learning.

6.4.1 Ed[18]ucation Criteria for Performance Excellence Goals

The Criteria are designed to help organizations use an aligned approach to organizational performance management that results in delivery of ever-improving value to students and stakeholders, contributing to improved education quality improvement of overall organizational effectiveness and capabilities organizational and personal learning

Core Values and Concepts

The Criteria are built upon a set of interrelated Core Values and Concepts. These values and concepts, given below, are embedded beliefs and behaviors found in high-performing organizations. They are the foundation for integrating key requirements within a results-oriented framework that creates a basis for action and feedback.

[18] 2001 Education Criteria: Core Values, Concepts and Framework. The Malcom Baldrige National Award Program

Visionary Leadership

An organization's senior leaders should set directions and create a student-focused, learning-oriented climate; clear and visible values; and high expectations. The directions, values, and expectations should balance the needs of all your stakeholders. Your leaders should ensure the creation of strategies, systems, and methods for achieving excellence, stimulating innovation, and building knowledge and capabilities. The values and strategies should help guide all activities and decisions of your organization. Senior leaders should inspire and motivate all faculty and staff, encouraging them to contribute, to develop and learn, to be innovative, and to be creative.

Your senior leaders should serve as role models through their ethical behavior and their personal involvement in planning, communications, coaching, development of future leaders, review of organizational performance, and faculty and staff recognition. As role models, they can reinforce values and expectations while building leadership, commitment, and initiative throughout your organization.

In addition to their important role within the organization, senior leaders have other avenues to strengthen education.

Reinforcing the learning environment in the organization might require building community support and aligning community and business leaders and community services with this aim.

Learning-Centered Education

In order to develop the fullest potential of all students, education organizations need to afford them opportunities to pursue a variety of avenues to success. Learning-centered education supports this goal by

placing the focus of education on learning and the real needs of students. Such needs derive from market and citizenship requirements.

A learning-centered organization needs to fully understand these requirements and translate them into appropriate curricula and developmental experiences. For example, changes in technology and in the national and world economies are creating increasing demands on employees to become knowledge workers and problem solvers, keeping pace with the rapid market changes. Most analysts conclude that, to prepare students for this work environment, education organizations of all types need to focus more on student's active learning and on the development of problem-solving skills. Educational offerings also need to be built around effective learning, and effective teaching needs to stress promotion of learning and achievement.

Learning-centered education is a strategic concept that demands constant sensitivity to changing and emerging student, stakeholder, and market requirements and to the factors that drive student learning, satisfaction, and persistence. It demands anticipating changes in the education environment, as well as rapid and flexible responses to student, stakeholder, and market requirements.

Key characteristics of learning-centered education include the following:

High developmental expectations and standards are set for all students.

Faculty understands that students may learn in different ways and at different rates. Student learning rates and styles may differ over time and may vary depending on subject matter. Learning may be influenced by support, guidance, and climate factors, including factors that contribute to or impede learning. Thus, the learning-centered organization needs to maintain a constant search for alternative ways to enhance learning. Also,

the organization needs to develop actionable information on individual students that bears upon their learning.

6.5 Comparison of Registration Awards.

Table 6.1.

Quality Systems and Important Issues Facing Higher Education

System	Focus	Important Issues for Higher Education
Baldrige Award	Customer Satisfaction	Customer Satisfaction and Retention (i.e., Students, Employees, Parents, Alumni, Taxpayers)
Deming Prize	Statistical Methods	Institutional Research and Assessment (i.e., Enrollment Patterns, Student Progress, Faculty Performance, Drop-out Rates, Recruitment Activities)
ISO 9000	Documentation	Accreditation and Evaluation (i.e., Curriculum Analysis, Program Requirements, Facilities Analysis)

6.5.1 The Baldrige Award

Corporate concerns regarding quality and challenges of the global markets fostered the Malcolm Baldrige National Quality Award Improvement Act of 1987. The purposes of the Baldrige Award program are (a) to promote awareness and understanding of the importance of quality improvement to the nation's economy, (b) to recognize companies for exceptional quality management and achievement, and (c) to share information on successful quality strategies and benefits derived from implementation of these strategies[19]. An important part of this award is the willingness of the award winners to share and publish information about their successful quality strategies with other U.S. organizations. Only American companies are

[19] Lee, S. M. & Schniederjans, M. J. (1994). Operations management.

eligible. The criteria help employers to assess both short and long-term strategic improvements, develop or enhance planning for continuous improvement, and increase customer satisfaction.

The core values and concepts of the Baldrige Award consist of seven categories: 1) leadership, 2) information analysis, 3) strategic quality planning, 4) human resource development and management, 5) management of process quality, 6) quality and operational results, and 7) customer focus and satisfaction[20]

The Baldrige Award criteria are a blueprint for quality improvement in any organization, including educational institutions[21]. The goals of the Baldrige Award are customer satisfaction, customer retention, and market share gain, which parallel student satisfaction, student retention, and student recruitment in academia[22].

6.5.2 The Deming Prize

In 1951, the Deming Prize was established in Japan in honor of Dr. W. Edwards Deming. It is an avenue for disseminating knowledge of successful methods for improvement. Its purpose is to award companies that continually apply Company- Wide Quality Control (CWQC) based on statistical quality control and are likely to continue doing so.

Organizations do not necessarily compete for the Deming Prize annually. Instead, attainment of the award signifies that an organization has reached a certain quality standard.

Similar to the Baldrige Award and ISO 9000, to qualify for the Deming Prize, top management must demonstrate commitment by applying. The application process is called "challenging". The process takes three to five

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[20] Fisher, D. C. (1994). Measuring up to the Baldrige.
[21] Kendrick, J. J. (1993a January). Five Baldrige Awards in year five, p 24-31.
[22] Heizer, J. & Render, B. (1996). Producing nad operations management (4th edition).

years and managers must convince the Deming Prize Committee that they are prepared for an on-site examination.

The judging criteria consist of ten major categories: 1) policy and objectives, 2) organization and its operation, 3) education and dissemination, 4) assembly and disseminating information, 5) analysis, 6) standardization, 7) control, 8) quality assurance, 9) results, and 10) future plans[23].

6.5.3 ISO 9000 Registration

Another quality system that has helped corporations toward continuous improvement is ISO 9000 Registration. The International Organization for Standardization created the ISO 9000 series of quality standards in 1987. Companies that meet these standards are listed in a registry by the auditing party, as ISO 9000 companies. ISO's objective is to promote development of standards worldwide to improve operating efficiency and productivity and reduce costs[24]

The focus is on basic process control of products and services in regard to quality. The standards are not intended to certify quality of a product or service or whether one is better than another[25]; the standards relate to an organization's quality system.

A company that has achieved ISO 9000 registration can attest that it has a *documented* quality system that is fully deployed and consistently followed. With a documented quality system, all the knowledge of how and why work is performed will be part of the system. Documentation is kept up-to-date to reflect the dynamic nature of work procedure changes to meet evolving customer demand. The same will be true in education; if quality

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[23] Evans, J. R. & Lindsay, W. M. (1993). The Management and Control of Quality (2nd edition).
[24] Hutchens, S. (1991). Facing ISO 9000 challenge.
[25] Lampercht, J. I. (1992). ISO 9000, preparing for registration.

curriculum, course objectives, and administrative procedures are well documented, change can have a positive effect on the entire institution. The ISO 9000 standards tell companies what to do, but not how to do it.

According to the 1994-revised standard, ISO 9001 is a model for quality assurance in design, development, production, installation, and servicing. ISO 9001 is the most comprehensive standard, with 20 elements or functional clauses that organizations must implement to achieve registration. It includes all elements listed in ISO 9002 and ISO 9003 and also addresses design, development, and servicing capabilities. It may be applied to manufacturing as well as services such as construction or professional services.

6.5.4 A Comparison Between the Awards.

Table 6.2. *Comparisons of Baldrige Award, Deming Prize, and ISO 9000 Characteristics*

	Baldrige Award	**Deming Prize**	**ISO 9000**
Purpose	Encourage sharing of competitiveness learning and drive this learning, nationally.	Award companies that continually apply company-wide quality control based on *statistical quality control*	Provide common basis for assuring buyers that specific practices, including documentation conform with provider's stated quality systems.
Focus	*Customer satisfaction* prevention of quality problems	*Statistical methods* prevention of quality problems	*Conformity to practices* specified in the registrant's own quality system.

Eligibility	Limited to U.S. companies only.	Individuals, factories and divisions or small companies worldwide	Companies, divisions and facilities around the world
Time Frame	1 year cycles; renew after 5 years	2 to 5 years; preparation with JUSE; apply when ready	Takes 6 to 12 months depending on starting point and urgency
Information Sharing	Winners required to share non-proprietary information on quality strategies with other U.S. organizations	Dissemination of information is voluntary and minimal	Registrants have no obligations to share information with others
Award Recipients	Maximum of two awards per category per year.	Those who meet the standards receive The award. For those that do not qualify, the exam process is extended up to 2 times over 3 years.	Companies involved in international trade that wish to be acceptable as vendors to trade with members of EC.
Assessment	Not a conformity assessment. Application reviewed by 5-15 board members. Site visits for final contenders. Improvement evidence must be in place.	One page of guidelines (brief, broad, subjective) Exam conducted by select panel of senior members of JUSE.	Evaluate quality manual and working documents, site audit by select staff of registration agency ensures conformation to stated practices and periodic re-audits after registration.

6.6 Features of a Quality-Oriented University.

The philosophy underlying TQM is profound. Its implementation requires a cultural change in most organizations. An institution such as a university should consider the following features as they underlie the success of a TQM program.

Such an institution: [26]

1. Is committed to the need for continuous improvement forever. People are always thinking about how to get better.
2. Identifies whom it wishes to serve and what these potential clients want and need--students, recipients of research and service, community.
3. Addresses the needs of the clients in its mission statement.
4. Identifies the values that guide its actions.
5. Develops a vision of what it would like to be in the future.
6. Has strong leadership that communicates continuously to faculty, staff, and students the mission and goals, values, and vision.
7. Identifies its critical processes--teaching, research, and service.
8. Aligns the implementation of its activities with its mission and values.
9. Provides continuing educational opportunities for all employees, both in-group process and in job-related skills.
10. Uses cross-functional teams to improve processes. Works with its suppliers, builds quality into each process, and ceases dependence on inspection to achieve quality.
11. Pushes decision-making to the lowest appropriate level, creating an attitude of interdependence and trust throughout the institution.
12. Bases decisions about the allocation of resources on data.

Uses quantitative thinking, along with competence in group problem-solving skills and relevant statistical procedures. These should be in widespread use throughout the institution.

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[26] TQM in Higher Education, Sep. 1993 Edition

13. Views itself as a learning organization, one that:
    - ❖ Promotes student learning, research, and service.
    - ❖ Studies, monitors, and evaluates the processes that produce the products.
    - ❖ Makes active collaborators in the improvement process of all concerned, including faculty, staff, students, parents, suppliers, employers, and community members.
14. Recognizes and rewards those who work hard to improve quality.

CHAPTER 7

COMMITING AND PLANNING STRATEGICALLY FOR QUALITY

Institutions embarking on a major quality initiative would do well if they would follow Covey's advice by "beginning with an end in mind", that is, by articulating a statement of purpose or mission. This chapter deals with that. At this point TQM should be well integrated with the strategic planning of that institution.

7.1 The Five Key Elements of Continuous Improvement Applied In Academia.

The five key ingredients for continuous process improvement are honesty, shared vision, patience, commitment, and TQM theory. Only the TQM theory can be taught and learned. The remaining ingredients require a different type of personal and organizational commitment.

Honesty. Solving a problem requires admitting that it exists. Thus, improving a process requires first acknowledging that there is room for improvement. For example, the popular media in U.S broadcasts many examples of problems in contemporary higher education, among them the poor academic preparation of entering students, racism, sexism, cheating, poor advising, the poor quality of student life, the excessive expansion of administrative and support services personnel, and costs that are escalating at a rate far exceeding inflation. When higher education itself contributes to one of these problems-and especially when it is solely responsible--then it

can and must do something. After acknowledging the problem, the critical next step is to determine who has the power to improve the situation. Almost always, it is management.

Shared Vision. Continuous process improvement requires the participation of everyone involved. Support for total quality requires a shared vision that processes can be improved and that, in turn, similar improvements will be realized in design, output, and costs.

Patience. Raising the quality of the services through continuous process improvement takes study and time--a great deal of time. If a significant portion of an organization's resources is being used unwisely, targets for budget reduction or reallocation usually cannot be identified in a day. Hasty budget cutting often leads to lower-quality output. It is better to develop a budget process that uses the resources effectively in the first place so that budget cuts are less likely. There is no magic wand that can create such a process in an instant; patience is required.

Commitment. Equally important is commitment, for without it frustration is likely to overcome efforts at improvement in those moments when patience wanes. This commitment must come from all levels, including the president, other administrators, faculty, staff, students, and board members, if institution-wide process improvements are to be realized. However, no one office has to wait for the entire institution to "buy in" before beginning to implement TQM concepts or tools, just as one college of a university might benefit from the use of an effective strategic planning process even if the entire university has not implemented it, so too an individual college or office can benefit from embracing TQM.

7.2 University Commitment to Continuous Improvement Models

Many colleges and universities across the United States have adopted or are adopting the philosophy of continuous improvement in portions of their operations. For example in Michigan, these include the University of Michigan, Wayne State University, and Western Michigan University. All have made major commitments and are beginning to see improvements in processes across their campuses.

In these institutions, virtually all of the TQM/CQI activities are taking place in areas within "business" types of processes. Activities such as parking services, financial aid, registration, telecommunications operations, and dining services are typical initial process improvement targets. In all of these, clearly the student is the primary external customer, and the fundamental aim of the quality improvement process is to improve the quality of service and product to the primary customer.

Of course many other processes are being improved as well, such as administrative payroll or staff parking. Focusing on processes such as these only indirectly impact the student. However, improvements in these areas affect the general quality of life on the campus, the morale of the staff, the culture of the university, and consequently the attitudes of the people in the organization toward their student customers.

These organizations have made a conscious and public decision to get better and better at what they do and how they treat people. They have made a decision to change from their existing cultures to a culture in which people are valued. Change has become a way of life, processes are analyzed and reengineered, process performance is measured regularly, and the resulting quality gains are celebrated. The public celebration of the

quality gains made is an important ingredient in moving the university culture toward one that embraces the continuous improvement philosophy.

The quality improvement gains documented in many of these early attempts at process improvement in these universities are in some cases extremely large. When one talks to the process improvement teams, they are genuinely excited about what they have accomplished and are eager to share their experiences with others. The excitement generated in many of these organizations is contagious and becomes a major factor in improving the culture.

Given both the commitment of many universities to continuous improvement and their stated missions focusing on teaching and learning, one would expect that organized attempts to improve the teaching/learning process would abound. Unfortunately, this does not appear to be true. Only a very small proportion of articles in the TQM/CQI literature in higher education are concerned with the application of continuous improvement models to the teaching/learning process.

7.2.1 Using The Awards Criteria as a Benchmark.

One of the steps toward becoming committed to quality improvement is clearly underlying the major issues and steps involved in the process. One way to achieve this is by using the awards as a benchmark. One of the awards that I personally favour is the British Standard For Industry (BS 5750) re-written for universities, which is as follows:

1. The university must produce a statement of its policy for quality in teaching and learning and ensure that it is understood by all employees of the University, including, but not only, academic staff.
2. The university must identify those responsible for key elements in the

assurance of quality in teaching, the range of their authority and their interrelationship

3. The university must decide how its quality standards will be described and how their accomplishment will be verified and by whom, bearing in mind that there should be some involvement of people independent of the particular output being verified.
4. The university must identify a particular senior person and associated committee responsible for its quality assurance operations.
5. The university must regularly review its management of quality in teaching and learning.
6. The university must set out in details its system to assure quality in teaching and learning, including its organization and plan for a specified period. The policy, organization, system and plan should be set out in a quality manual or manuals
7. The university should determine the nature of the contracts that will be established in general and particular with its students. The specific contract at course level should cover the expectations that teacher and students have of each other's contribution to the student's learning.
8. The university must identify the procedure that will be followed for the planning of courses and the validation of these plans against agreed standards. *Inter alias*, attention should be given to the consumer contribution to design, the precise responsibilities of individuals and groups in planning and validation, the relation between design and implementation and the status of plans at each stage of the process of planning and validation.
9. The university should specify the documentation required for the assurance of quality with a view to brevity and direct relevance.

10. The university should be set and monitor standards for suppliers and subcontractors associated with their teaching service, including both external and internal suppliers.
11. The university should ensure that the key elements in teaching and their primary causes are identified in such way that problems may be traced back to their roots and appropriate action taken.
12. The university should address in detail the process that characterizes teaching and learning and the process that supports teaching in order that those features affecting quality can be controlled, standards can be set and monitored and problems can be identified and solved.
13. The university should devise reliable and valid measures that might be used to test and verify key elements in teaching, planning for teaching, and student response to teaching.
14. The university should identify external inputs that will be necessary to verify the validity of internal quality assurance.
15. The university should devise procedures for identifying teaching that is sub-standard and take steps to remedy sub-standards elements.
16. The university should have established procedures with designated responsibilities to take short-term and long-term corrective action in response to complaints from students.
17. The university should keep such records as will allow objective assessment of the quality assurance system.
18. The university should devise a planned and documented system for internal quality audits of key features of the quality system, including, for example, course validation, staff training and educational services in support of teaching
19. The university should identify the skills required of teachers to deliver

teaching to agreed quality standards and ensure that all staff receives appropriate training.

20. The university should identify the contribution made by its various non-academic staff and associated resources to the meeting of standards in teaching, identify the standards necessary for those services and the skills necessary for personnel involved, and ensure that all the staff receives appropriate training.
21. The university should offer training to all staff to encourage positive attitudes towards a comprehensible quality system.
22. The university should ensure that there is a follow-up to all it's teaching to assess its acceptability and effectiveness to students, and that appropriate follow-up action is taken when teaching has not achieved its objectives.
23. The university should systematically gather data relevant to its quality objectives and subject this to appropriate statistical analysis, the results of which then play a part in its review and planning.

7.3 Determine the Organizational Profile

The organization profile is a snapshot of your organization, the key influences on how you operate, and the key challenges you face. Below is a version of Baldrige's Excellence in Higher Education (EHE) developed at Rutgers University in the USA.

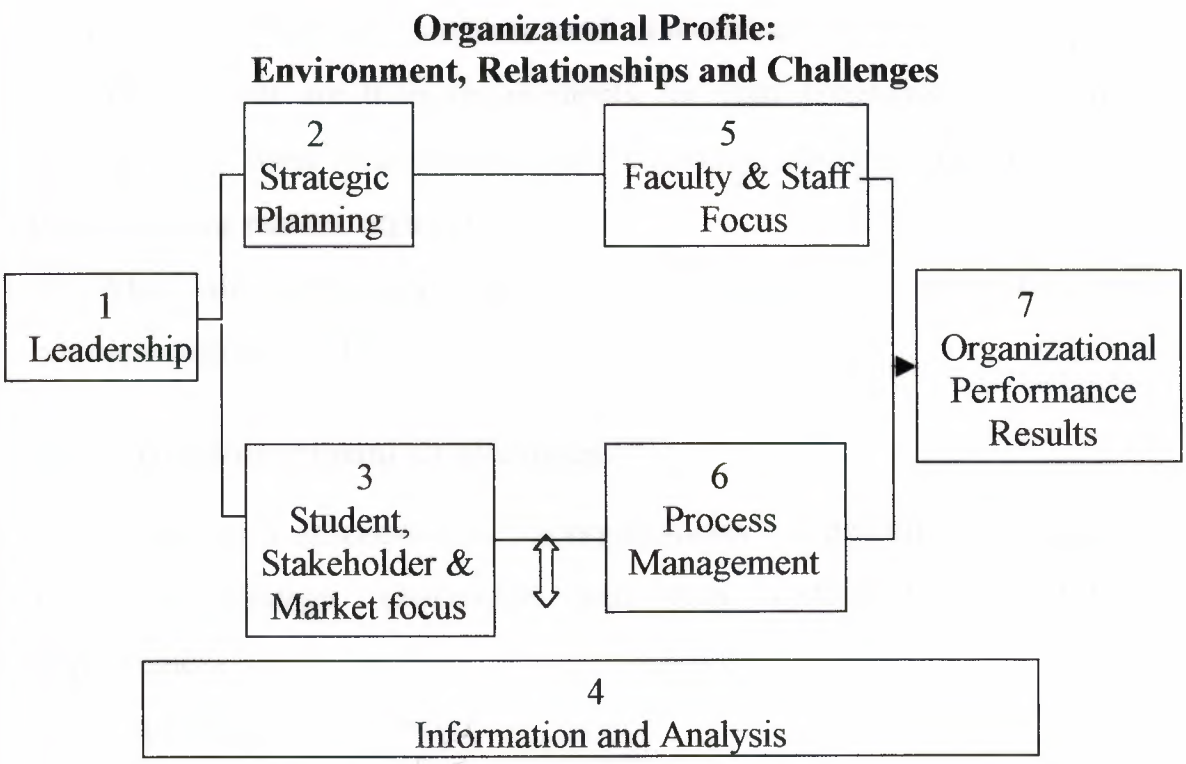

Figure 7.1. Organizational Environment.

7.3.1 Organizational Description

You could start by describing your organization's environment and your key relationships with students, stakeholders, suppliers, and other partners.

❖ *Organizational Environment:*

1. What are the organization's main educational programs and/or service?
2. What is the organizational context/culture? Include the purpose, vision, mission and values.
3. What is the legal/regulatory environment under which the organization operates? Include mandated standards, curricula, programs, and assessments; occupational health and safety regulations; accreditation requirements, and environmental and financing regulations.

❖ *Organizational Relationships.*

1. What are your key students and stakeholder groups and/or market segments? What are their requirements for your programs and services? Include how these requirements differ among students and stakeholder groups and/or market segments.
2. What are your key suppliers and partnering relationships and communications mechanisms?

7.3.2 Organizational Challenges.

This includes a description of the organization's competitive environment, your key strategic challenges, and your system for performance improvement.

❖ *Competitive Environment*

1. What is the organization's competitive position? Include relative size and growth in the education sector and the numbers and types of your competitors.
2. What are the principal factors that determine your success relative to the success of your competitors and other organizations delivering similar services? Include any challenges taking place that affect your competitive situation.

❖ *Strategic Challenges*

What are your key strategic challenges? Include education and learning, operational, human resources, and community challenges.

7.4 TQM Planning Initiatives at Western Michigan University.

Firstly, Western Michigan University identified a small number of major goals to guide them through the new developments. Its president, provost,

and vice presidents see TQM as an effective response to accountability demands from both internal and external constituencies.

For WMU's quality initiative, President Haenicke proposed a mid-range planning horizon of three to five years. As a first step, all major administrative and academic units were asked to prepare reports listing their accomplishments during the past year, their midrange goals, and any potential barriers to achieving those goals.

Three major ad hoc committees on academics, administrative support, and tuition and fees, reporting to a central planning committee, were created and charged with developing recommendations on institutional directions and priorities, with maximum input from their constituencies.

WMU's planning committee began with areas where TQM initiatives had already begun, as well as units that had shown interest in forming teams: for example; financial aid, computing, college of business advising, health center, and admissions.

WMU developed and shared campus wide, the basic tenets of their CQI initiatives. Here is WMU's statement:

1. CQI positions WMU as an institution, which delivers excellent service to diverse customers.
2. CQI strengthens the institution by developing the potential of individuals and supporting their achievements.
3. CQI is an intentional process, which requires strategic thinking by everyone to seek continuous improvement of services, programs, and facilities.
4. CQI is designed to make WMU more flexible and competitive with the effective use of resources compatible with the university's mission.

In 1990, WMU endorsed a mission statement with five major components:

- ❖ High quality instructional programs, whose outcomes can be assessed,
- ❖ Expanded research outcomes,
- ❖ Contributions to the economic development of the region and state, community service, and
- ❖ Increased diversity among students, faculty, and staff

In a major international address, Haenicke endorsed these goals, stating that, "accountability to the people we serve" must be the primary concern of higher education.

CHAPTER 8

A CUSTOMER FOCUSED APPLICATION OF TQM IN THE TEACHING AND LEARNING PROCESS.

Much of the controversy and theoretical debate about the TQM model revolves around defining what constitutes the product and who constitutes the producers and consumers in the education market. These definitions are much less clear-cut in a university context than is the case in industry applications. Most writers argue that clear role definitions are essential to ensure that quality improvements are sought and realised in higher education. An alternative model put forward by Ray, who identifies the student as the producer, society as the consumer and learning as the product, and this model is more likely to be accepted in Higher Education.

8.1 The Concept of the Customer in Higher Education.

Universities have a variety of customers. One definition is that of "a buyer of products or service". Students take classes, consume meals, sleep in residence halls, buy books and use many services for which they pay tuition and fees. The student certainly fits this definition of the word customer. The businesses and professions that employ the graduates are also customers, as is the general public.

Universities have an almost infinite variety of internal customers as well. For example, the payroll department is a customer of the computer center because without the computer and the computer center the payroll does not get produced. The dean's office need's timely, accurate financial information to make appropriate decisions.

Most frequently, external customers have the freedom to choose their supplier, and in fact, do so. This is, for the most part, not true for internal customers. They are stuck. They must use their service provider, because it is their only option. This lack of competition frequently breeds contempt for internal customers.

When one begins to treat a person or entity as an external customer, one's attitude toward that person or entity changes. So the customer is important. A customer is vital to the survival of the organization. The customer can choose another supplier if the quality of the service or the product is inferior or deteriorates.

One of the most important aspects of the TQM/CQI-focused organization is that departments begin to treat other departments as important customers by trying to meet the customer's needs and time schedules. This simple concept has an absolutely revolutionary effect on the relationships that exist within a traditional organization.

The idea of the student being the customer of a professor is a concept that takes many faculty members a while to assimilate. Certainly the student/faculty relationship is obviously far more complex than that of a simple customer-supplier relationship. Yet, clearly one dimension of this relationship involves the student as customer. The student is buying the professor's course and has the unmistakeable right to expect certain things for his/her money: relevant course content, fairness, access, expertise and a reasonable learning situation. If a faculty member views the student as a customer, it is likely that the faculty member will become more tolerant, more interested in implementing ways to improve the leaning process, more accessible and more student-friendly.

Many faculty members say that the student is not the customer, but it is the

product. However, upon closer review, it becomes evident that the student is not the product; the product is the learning of the students.[27] Learning is a team effort between the professor and the student. Jointly, they produce a product – the learning of the student. Both parties are responsible participants in that process.

On the other hand, the concept of student as a customer conflicts with the paternalistic outlook that has traditionally prevailed: professors have sees themselves as the only ones capable to judging what is valuable knowledge for the students in the long run[28], and that students rarely know what they need.[29]

8.2 The Dilemma on Student's Role and its Implications.

Recalling that TQM begins with discovering customer's need, one dilemma comes up about identifying the student's role. Is the student the customer?

As I mentioned previously, if a faculty member views the student as the customers he will be more interested in implementing ways to improve the learning process.

Taking the parallel in the field of Management Information System, it is fundamental to understand the acquisition, manipulation and storage of information.[30] Students should become the focus, classroom effectiveness the concern, and assessment the means by which educators gain feedback about what works and what needs to be improved. Under continuous quality, a college or university seeks to improve the quality of what it uses,

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[27] Sytsma, 1996
[28] Chizmar, J. (1994). Total Quality Management (TQM) for Teaching and Learning, Journal of Economic Education, Volume 25, number 2.
[29] Wolverton, 1993
[30] Thompson, 1994

does and delivers. The ultimate goal is to enhance classroom effectiveness in order to improve student learning.[31]

Inspection of the finished product cannot prevent defects, which may already exist. The price of defects in education is irretrievable. The situation is similar to what existed in manufacturing in the pre-Shewhart days. Quality is obtained by inspection. Those who do well on tests are graded acceptable and are passed. Those who do not perform acceptably are rejected totally or are reworked. Society can no longer afford this wasteful model.[32] Accountability and assessment must shift from the finished product into the educational process. Data must be collected for accurate decision making by the people managing every process.

Continuous Assessment.

Cross & Angelo (1998) call the process of involving teacher's systematic study of teaching and learning as "Classroom Research". The classroom teachers can, through close observation, the collection of feedback on student learning, and the design of experiments, learn more about how students learn, and more specifically, how the students respond to particular teaching approaches. The basic premise of classroom research is feedback from students. Cross and Angelo present various techniques that focus on five criteria:

1. Will the assessment techniques provide information about what students are learning in individual classroom?
2. Does the techniques focus on "alterable variables" – aspects of teacher or learner behaviour that can be changed to promote better learning?
3. Will it give teachers and students information they can use to make mid course changes and corrections.

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[31] Chaffee, Ellen E. and Sherr, Lawrence (1992). A Quality: Transforming Postsecondary Education.; Deming, 1992

[32] Sytsma, 1996

4. Is the assessment technique relatively simple to prepare and use?

5. Are the results from the use of the techniques relatively quick and easy to analyse?

Traditional classroom feedback devices; exams, quizzes, paper, oral presentation; seldom meet the all five of these criteria. However it can be more "TQM-like" if they are managed according to quality principles.[33]

A principal finding of the Harvard Assessment Seminars, concerning the major characteristics of highly respected courses, illustrates *the key quality management principles of traditional feedback devices:*

1. Immediate and detailed feedback on both written and oral work.

2. High demands and standards placed upon students, but with plentiful opportunities to revise and improve their work before it receives a grade, thereby learning from their mistakes in the process.

3. Frequent checkpoints such as quizzes, tests, brief papers, or oral exams.

The key idea is that most students feel they learn best when they receive frequent evaluations, combined with the opportunity to revise their work and improve it over the time.[34]

Perhaps the purest example of a "classroom research" technique built on quality principles in the so-called "One Minute Paper".[35] In the final minute or two of class, the teacher asks students to respond to two questions:

1. What is the most important thing you learned today?
2. What is the muddiest point still remaining at the conclusions of today's class?

The first question is intended to focus students on the big pictures e.g., what is being learned. From the results it shows that some students focus on

[33] Chizmar J. (1994). Total Quality Management (TQM) of eaching and Learning, Juornal of Economic Education, Volume 25, number 2.

[34] Light, 1990.

[35] Bateman and Roberts, 1992; Chizmar 1994; Oblinger, 1996.

the big picture while the other on small parts or on specific issues.

The second question is to provide a fountain of specific responses and leads to very discrete and relevant statements of what the students want to know more about, that is, how well it is being learned.

Quality Circle

Another way of empowering students is to form quality teams or circles. After asking the students for permission to form a quality circle, the teacher creates a quality team of six to eight members chosen from a list of volunteers. The quality circle meets weekly with the teacher to discuss matters about course management and agree on a set of policies that will be used to manage the course.[36]

8.3 The Instructor's Role, ... Ray's Model.

In Ray's model, the role of the instructor is to define the product (content of the subject) and the production method (classroom procedures); to act as consultant and one of the inputs in the production process to assist students in their learning; and to be responsible for quality inspection (allocate grades). The faculty member is "a resource for learning", but "the control of the learning process is where it logically belongs, with the student"[37]. Part of the instructor's role is to "reduce the costs of learning" and to assist students "identify processes and systems that are most efficient". One practical suggestion made by Ray is a quality checklist for students, made available at different levels. A first level might include such basic items such as including "did you attend class?" "did you do the assigned readings?" moving on to questions about how students learn such as "have

[36] Cross and Angelo, 1988

[37] Ray M. (1996). Total Quality Management in Economic Education: Defining the Market, Journal of Economic Education, Volume 27, number 3, pp 276-283.

you tried the videotape, workbook or computer package?" If the student answers 'yes' to the more basic types of questions the instructor can go on to ask more detailed questions and suggest solutions regarding the student's personal situation.

Within Ray's model there are numerous roles for the instructor but the responsibility for learning rests squarely with the student. This does not take away the responsibility for a 'quality' role for the instructor. Quite the reverse happens, as there are many improvements that can be made in the three broad areas of responsibility (outlined above) of the instructor. Quality is defined in some senses differently to the traditional university view, where the instructor is deciding on the quality of the student's work and assigning a grade. Quality, in Ray's model, *means to implement better ways of doing things that are within the instructors role*, which includes assisting the student to take responsibility for their own learning and to improve the achievement of their aims.

Whilst appreciating and applying the general philosophy of TQM as interpreted in Ray's model, there is some concern with the narrowness, semantics and lack of emphasis on practical aspects of teaching and learning in the TQM framework. The TQM framework, and Ray's model in particular, is considered by the authors to be too narrow because it appears to be solely focused on the learning process of the student and assisting them to take control of their learning. The revised model *broadens* the teaching and learning process to include *all* aspects of the teaching and learning environment. Student success is not only a function of classroom processes and practices, but is also closely aligned with other aspects of their university experience, such as administrative arrangements, evaluation processes, technological developments, curriculum design and so on.

8.4 TQM for Professors and Students.

The following definition catches the essence of TQM:

"Continually serve customers better and more economically, use scientific methods and teamwork, and concentrate on removing all forms of waste".

Experts believe that a faculty can successfully adopt TQM efforts because:

1. Professors are relatively free to change the way they teach.
2. Professors want to be good teachers, and there are ways--even for college presidents, deans, and department heads--to encourage good teaching.
3. The key TQM idea is customer satisfaction and students play the role of customers.
4. The TQM movement has already led some faculty to begin thinking of students as customers.

The view of students as customers isn't universal; many faculties often resist or resent this view.

The traditional professorial paternalism can lead to complacency, stagnation, failure to check how much is really being learned and retained, and the working hypotheses that student's needs coincide with professor's interests. Worse, it can lead to accepting poor student performance.

George Bateman and Harry Roberts say in an article of "TQM in Higher Education":

" We can testify from personal experience that teaching looks very different when you think of students as customers. Professors begin to try to figure out why students perform poorly or challenge the relevance of the material. They begin to think about getting relevant data.

We believe that professors need more data than they usually get, and they

need it in a more timely fashion."

8.5. The Role of Course Evaluations in Improving Teaching

If an institution is to achieve a customer focus, some information about customer satisfaction is essential. Since the late 1960s, the Graduate School of Business at the University of Chicago has used student course evaluations based on questionnaires in all courses, with systematic public reporting of results. Other business schools--for example, Northwestern's Kellogg School--also have used public course evaluations.

Just as grading often makes students uncomfortable, course evaluations make professors uncomfortable. But, in spite of minor technical reservations, the Chicago faculty generally believe that course evaluations provide the best available information we can have about teaching effectiveness.

Although experts can't prove it, they believe that teaching at Chicago is much better than it would be in the absence of public course evaluations because evaluations encourage the faculty to treat students as customers, whether or not the word "customer" is used.

In promotion decisions, a summary of course evaluations is always included in reports and discussions of the Appointments Committee. This, and the fact that, both at Chicago and Northwestern, deans take these evaluations seriously, encourages good teaching.

Unfortunately, course evaluations have limitations:

- They're available only after the course has ended.
- They use general-purpose questions that apply to all courses.
- They can't include course-specific questions.

- The numerically scaled questions tell almost nothing about what worked and what didn't.

Some information can be gleaned from tabulating free response questions to see which themes occurred most frequently, but these highlight pervasive problems rather than specific difficulties.

8.5.1 The Fast-Feedback Questionnaire and its Results on Teaching and Learning

Here the focus is on what universities learned developing the fast-feedback questionnaire. Experts have reached several conclusions and promising hypotheses about ways of improving teaching through using fast-feedback questionnaires. Here they are:

1. It's essential for the students to be sold on the feedback questionnaire. Emphasizing at the start that responses will benefit the current class, not just future ones, is key.
2. Using feedback questionnaires can hurt the instructor's ego because sometimes there are very negative, even hostile student reactions, even when a course is going well. However, it's more helpful to learn about problems while one can address them rather than encounter them on the end-of-the course questionnaire.
3. Ordinarily, instructors must rely on subjective impressions as to what does and doesn't work. The lab experiences suggest that these impressions are often untrustworthy, and that they tell almost nothing about variations in individual student's or groups of student's reactions.
4. Often student feedback has suggested "obvious" problems that weren't obvious to the instructor. For example:

- In almost every class there were problems hearing or understanding the instructor, reading the writing on the board, or seeing the visuals.
- Almost always, students have wanted more examples and applications to illustrate concepts.
- Students were impatient with fellow students who try to dominate class discussions.
- It was very hard for the instructor to judge whether the pace of the class is too fast or too slow, and casual student comments weren't a reliable guide.

5. The feedback questionnaires can probe into deeper problems, such as student's understanding of basic ideas, motivation for course preparation, or reaction to outside readings. A common, student tendency was found: the tendency to skip readings that have no potential impact on the course grade.

6. Probing into these deeper problems, however, requires the instructor's intense involvement in the feedback process: she/he must provide reverse feedback. This can be oral, written, or both. It can take the form of course modifications, answers to specific questions, elaboration of obscure points, clarification of the grading system, fuller comments on student papers or cases, additional references, or outside speakers.

7. The processes of feedback and reverse feedback tend to draw students and instructors together to improve the learning experience. An instructor's written reverse feedback can explain points singled out by the fast-feedback questionnaires, and even answer specific questions asked on the questionnaires. Reverse feedback can require substantial time and effort of the instructor, but the payback in avoidance of rework is great.

8. Regarding reverse feedback: students want instructors to provide feedback, preferably fast, not only on the questionnaires, but on all work

they hand in. Students aren't happy with a grade on a written assignment that doesn't include comments.

9. Course ground rules should be made explicit: students should understand what's expected of them and what the instructor expects to provide. It's appropriate to discuss the ground rules, and possibly modify them with the aim of a mutual understanding a course "contract."

10. Instructors should devote some time to "marketing" their courses, including the outside readings, both in advance and during the course.

11. The fast-feedback questionnaire can discover how students are actually using their study time. Instructors can then use this data to help improve student's study efforts.

12. Another useful TQM aid for students may be the personal quality checklist, developed at AT&T. This simple tool applies TQM to personal work processes, and is adaptable to student work processes.

13. There should be some structured instruction, even in courses where faculty are primarily coaches and facilitators, such as laboratory courses.

8.5.2 Course Strategy

The usefulness of feedback tools stems from the fact that students know when they can't see or hear or are confused or unclear about content, and can tell the instructor when a particular topic seems irrelevant to their interests.

Ideas for *course strategy improvement*, by contrast, must come from the instructor--from an improved understanding of the subject matter and its connection with other topics. For example:

- Which topics are essential, which can be left out or de-emphasized?
- How can we better exploit what students already know?

- What new topics are needed to keep the course up-to-date?
- Are there simpler and better frameworks for understanding the subject matter? Can one general idea unify several specific ideas, which can then be seen as special cases of the general idea?
- Can process mapping and flowcharting be used to improve course strategy?

TQM can contribute to course strategy. For example, TQM's insistence on continual and substantial improvement is essential to combat the tendency toward simply accepting the slow evolution of textbooks and courses.

TQM encourages instructors to widen their horizons beyond minor issues, such as, "Should we teach the median before we teach the mean?" TQM tools such as benchmarking, brainstorming, and focus groups can bring out new opportunities in course strategy and in curriculum design.

8.6 A Method for Applying TQM in Teaching and Learning.

The University of South Australia, used an approach based on a group of staff members, known as Quality Improvement Project in Teaching and Learning (QIPTL) team in the Faculty of Business and Management to TQM issues, to attempt to apply TQM principles in an appropriate way to the overall teaching and learning environment. TQM principles were used in a broad sense to focus and develop the QIPTL program. However, the QIPTL team took a theoretical stance in some sense, as the overriding philosophy was to consider teaching and learning in a very practical and broad perspective. Thus, all aspects of the teaching and learning environment in the faculty were considered appropriate for this project, and a practical 'hands on' project oriented approach was developed. The

challenge was to prioritise the many and varied aspects of teaching and learning that lend themselves to scrutiny and quality improvement. Two academic staff members involved took a project management perspective and provided a faculty focus for teaching and learning issues that had never before been attempted in any systematic way in the faculty of Business and Management.

This project management perspective had the following underlying principles:

- To provide simple, workable solutions to everyday issues identified by stakeholders;
- To consult with and respond to important stakeholders such as academic and general staff and students;
- To work with various disparate groups (academic and general staff, student support services, staff developers) within the faculty towards common goals;
- To encourage ownership of TQM issues;
- To keep ahead of Senior Management priorities;
- To be proactive in promoting quality in teaching and learning and raising the profile of teaching and learning in the faculty;
- A 'bottom up' approach to issues (i.e. an approach suggested and sanctioned by classroom practitioners and other key stakeholders);
- To provide a faculty focus for teaching and learning issues;
- To work with a broad brief and perspective of what constitutes the teaching and learning environment (i.e. not just to concentrate on delivery in the classroom but to consider *all* issues that impinge on the general environment in which students learn); and
- To 'close the loop' (i.e. to investigate and reflect on problems and

find, initiate and follow up on solutions to those problems).

Three key agendas were evident in this project:

- A 'bottom-up' approach in response to concerns and issues expressed by key stakeholders;
- A 'top-down' approach to major initiatives of Senior Management; and
- To keep ahead of the game or to "see the writing on the wall", trying to anticipate changes in an increasingly hostile environment by planning and setting in motion activities before they are forced upon staff

Activities

One of the larger projects developed under the QIPTL umbrella involved the mainstreaming of generic study skills into the first year economics curriculum, with the view to extending this practice to other core business and management subjects. This project meant that academic staff worked closely with study skills advisers to integrate study skills into almost every aspect of the teaching of first year economics. In the process of mainstreaming study skills into first year economics attempts were also made to incorporate three other important elements into the subject:

- A more inclusive curriculum for all students regardless of background;
- A more international curriculum; and
- An increased awareness and appreciation of graduate qualities.

In this regard a 'horizontal' approach was taken as several of the key initiatives of Senior Management outlined above were incorporated into the subject, rather than tackling each one separately. The project was kept to a manageable size because of the considerable overlap in each of these four

areas. For example, one of the graduate qualities at the University of South Australia states that, "graduates will demonstrate an international perspective as professionals and citizens". There is an obvious overlap with developing a more international curriculum.

The following seven qualities have been identified and formally adopted by the University of South Australia.

A graduate of the University of South Australia;

- Operates effectively with and upon a body of knowledge to sufficient depth to begin professional practice;
- Is prepared for lifelong learning in pursuit of personal development and excellence in professional practice;
- Is an effective problem solver, capable of applying logical, critical and creative thinking to a range of problems
- Can work autonomously and collaboratively as a professional;
- Is committed to ethical action and social responsibility as a professional and as a citizen;
- Communicates effectively in professional practice and as a member of the community;
- Demonstrates an international perspective as a professional and as a citizen.

A case study: Economic Environment

A core unit of the Business and Management degrees in first year economics called Economic Environment was used at the vehicle for main-streaming graduate qualities, inclusive curriculum, internationalisation and study skills in to the curriculum. This subject is a very large subject with over 1,200 students enrolled in first semester of each year. Students enrolled in Economic Environment study the subject in 32 different

degrees throughout the university. Students may be taking a major in law, accounting, management, marketing, information systems, property and finance to name but a few of the alternatives but are required to study Economic Environment as a core unit of their degree.

In first semester, 1997 around 45% of enrolled students failed to complete the course satisfactorily. This outcome provided the stimulus for the QIPTL team to investigate ways of improving the quality of the educational processes and practices involved in the delivery of Economic Environment. It was envisaged that an improved outcome in Economic Environment would assist other first year coordinators to adapt and improve learning processes in their own discipline areas as well as to assist students to proceed more successfully with study in the later years of their degree.

The major changes in the structure of Economic Environment in semester 1, 1998 are as follows:

- Traditional weekly tutorials were revamped as fortnightly Collaborative Learning Workshops (CLW), with a strong emphasis on group discussion and learning techniques that nevertheless required individual preparation and discussion, these CLW groups comprise classes of 30 students who then form into five sub-groups of six students;
- Alternative weeks were programmed as Study Groups (SG), where small student groups (normally six students) formed in the CLW would meet to discuss group-based activities, such as presentations and reports, these Study Groups were not staffed by facilitators as is the case with workshops, but students were provided with a specific set of tasks to be completed in these sessions;

- Students were provided with Independent Learning Activities (ILA), which comprised a range of activities *separate* from the Study Groups and Collaborative Learning Workshops, which were designed to supplement and complement the course work and improve their independent learning skills. Students were expected to complete these ILA independently in their non-contact time (about eight to nine hours per week) for the subject;
- Ground rules (e.g. expected hours of study, contact and non-contact time, intent of CLW's and SG's and assessment) were more clearly defined in the Subject Information Booklet and staff expectations of students were reinforced in an extra class held in week one when tutorials have not usually been conducted in the past;
- A twice weekly 'help desk' was established from week 3 onwards. The help desk, staffed by one of the lecturers in Economic Environment, provides extra support for students who are experiencing difficulty with the concepts of the subject;
- A Learning Support program (LSP) was introduced to provide extra support especially for international students. The LSP included sessions on graphing (assumed knowledge in the subject), library research for the major written report and language skills sessions called Eco-talk conducted by a study adviser; and
- Assessment requirements were revamped to give less weighting to exam and multiple choice testing and to increase weighting to participation, presentations and group projects to reflect the increased emphasis on graduate qualities.

The new structure incorporates the following innovations:

- Hint boxes for all questions set;

- Extensive advice on learning strategies especially in the SG's;
- More attention given to media literacy;
- Linking of activities with assessment exercises, for example the activities prepared in the study groups were assessed the following week in the CLW's;
- Increasingly heavy emphasis on group work and its outcomes;
- A limited open book exam which emphasises application of concepts rather than regurgitation of models and theories;
- More emphasis on applying concepts to real life issues and situations;
- A new text book with a more international flavour;
- Electronic allocation to lectures and tutorials;
- A staff induction session designed to improve staff awareness of the changes and develop quality teaching processes in the subject, especially designed for new part-time staff;
- Inclusion of model answers to various assessment exercises in the Subject Information Booklet; and
- A developmental approach to assessment which involves lots of practice building up to the large group report and the final examination

Results

As with many aspects of life, part of the success of the project involved elements of luck or "being in the right place at the right time" and part involved a lot of hard work and planning to get the various projects underway. Fortunately, the importance of teaching and learning at the university have experienced a revival recently following a period of heavy emphasis on research and other aspects of an academic's work

expectations. The reasons for this revival in interest can be attributed to changes in government policy and university concern regarding losing customers (students) in an environment where competition amongst universities for funding is fierce. Over the past few years, with increasing intensity in the last twelve months, universities appear to be recognising teaching more in promotion procedures, resource flows and academic staff appointments.

The results of the QIPTL work in the faculty of Business and Management that QIPTL has been very successful. Such evidence comprises:

- The dedication of further faculty funds to the project in times of fiscal restraint and cost cutting in the Higher Education sector;
- Approval of Heads of School and most faculty staff;
- Student feedback which indicates that students are beginning to benefit from the myriad of projects underway; and
- Feedback from others outside the faculty (other faculty members and outside organisations) who appreciate and support a faculty focus in Teaching and Learning.

With reference to the changes made to Economic Environment there has also been much positive feedback about this part of the project. Every fortnight, students and workshop facilitators are asked to complete an evaluation form which asks three questions about the previous fortnight's work in this subject. The facilitator is asked about the effectiveness of the week's workshop, to provide a summary of student feedback and to suggest improvements in the subject. They are also asked to rate the workshop on a Likert scale from 1(very effective) to 5 (unsatisfactory).

Evaluation forms received up to and including week eight (out of 13

weeks) of the teaching cycle indicated that the overall ratings given to the workshops are usually in the 'good' to 'very effective' range, with an occasional 'satisfactory' rating. None of the twelve staff involved in teaching of the subject have rated the effectiveness of the delivery of the subject in the 'poor' or 'unsatisfactory' categories. In general the feedback provided on the evaluation sheets revealed a high level of enthusiasm and engagement by students as evidenced by almost full attendance and willingness to participate in Study Groups, which are not staffed with a facilitator and for which no attendance records are kept. Written comments on the evaluation forms indicated a very positive attitude towards the innovations in the subject.

A student focus group was also developed as part of the evaluation process. The focus group, held fortnightly after lectures, is an informal discussion with a group of ten students. The focus group included two students who are repeating the subject. The response of repeating students was especially valued because of their ability to compare the subject with the last time it was run. The two students have consistently reported that all aspects of the subject are a considerable improvement over last year. The workshops are valued far more than the traditional tutorial because the group discussions provide a more useful and more supportive learning environment. One student commented that

" Initially my group didn't have a clue about the answer but by talking amongst the group they came up with the right answer 'out of the blue' ".

When asked to make some comment to summarise their feelings about their progress in the subject, students in the focus group have given the following types of responses "so far so good", "coming along", "interesting", "very effective" and "impressed".

CHAPTER 9

MODELS TO IMPROVE CLASSROOM TEACHING AND STUDENT LEARNING

Clearly, the teaching and learning that take place within a course is a process, albeit a complex one. The product of the process is the learning of the student.[38] Primary team members in the process are the professor and the student. Many other team members also exist in this complex system, including librarians, other faculty members, tutors, lab assistants, and other students. The businesses, industries, and professions served are also team members because they help to identify relevant course content. Maintenance and custodial personnel are team members because they have a direct effect on the quality of the learning environment. The professor, based on his/her experience and expertise, develops the plan for learning and a process that results in student mastery of the course material.

9.1 Alternatives to the Current Educational Practices.

When you apply modern SPC analysis to student performance data derived from a typical college course, you will find enormous variation compared to most manufacturing processes. The situation is similar to what existed in manufacturing in the pre-Shewhart days. Quality is obtained, like the pre-Shewhart days in manufacturing, by inspection. Those who do well on tests are graded acceptable and are passed. Those who do not perform acceptably are scrap--rejected totally, or are reworked. Society can no longer afford this wasteful model!

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[38] Tribus Myron. (undated). Total quality management in schools of business and engineering.

Professors must consider alternatives to many of current educational practices. For example, they could,

- Change the current grading practices to reflect the opportunity for improvement, such as retakes on tests, mastery learning, and outcomes-based evaluation.
- Adopt the philosophy that all students can learn and that our goal is to develop teaching/learning strategies that will lead us toward zero defects--no failures.[39]
- Believe that intelligence is the rate of learning and that natural variability exists in this --process like all others and can be accounted for in appropriate teaching/learning strategies.
- Consider published outcomes and guarantees in courses--for example, in a typing course if a student buys 35 words/minute and only achieves 25 words/minute, he/she can retake the course at no cost.
- Examine policies at the university that inhibit a CQI model (e.g., registration only three times per year, the need for streamlined methods to award incomplete (I) or in process (IP) grades, the need for variable credit, and course length alternatives to meet customer needs, et cetera).

For most faculty members today, the primary instructional process is based on the lecture. They learned the material this way, as did the person they learned it from, and likewise, the instructors before them… This process continues in spite of the fact that most faculty members know that the lecture is one of the least effective ways to deliver instruction, even when it is done extremely well.

Why haven't educators made more successful attempts to improve the teaching/learning process?

There are many reasons. Some faculty members

[39] Crosby P. (1984). Quality Without Tears: The Art of Hassle-Free Management.

- see few reasons to change; most feel they are doing just fine.
- are far better talking about change in others than about making changes in themselves.
- do not know how to change; they have been taught no credible alternatives to their old ways.
- fear giving up the power that they now feel they have.
- are by nature poorly conditioned to take risks.
- simply don't care.

Faculty members have been much more interested in learning new content than in learning to improve their teaching. This has a striking parallel to the differences between the United States and Japan in how research and development funds are expended. Historically in the United States, they have spent about 2/3 on new product research and 1/3 on new process research[40]. In Japan, those two figures are reversed. The result is that Japan can produce comparable product much more inexpensively than the United States can because of superior manufacturing technology. The point is that expenditures pay off.

In colleges and universities, most teaching faculty members are selected for their content expertise not their content delivery expertise. Most faculty research, faculty travel, and faculty consulting relates to content expertise, not to the effective sharing of that content with others. Most universities have not made significant investments in omnibus attempts to improve the teaching/learning process nor have their faculty invested their own time and effort to do it individually. Many faculty members have never even taken a course in how to teach; some scoff at the very idea.

It is time to rethink the traditional ideas of what teaching and learning are all about. It is time to apply what we know about process improvement to

[40] Thurow L. (1993). Head to Head: The Coming Battle Among Japan, Europe, and America.

the teaching/learning process. Process improvement theory and practice has stood the test of time. It is successfully used in process improvement worldwide. It can be used to improve the process of teaching and learning in the classroom as well.

It is easier to apply CQI philosophy in the classroom than it is to apply it in practically any other place on earth. This is because of the flexibility and control that professors have in configuring their courses. If professors want to use a CQI philosophy, they can just do it. They don't even need to ask permission. It can be an individual journey toward teaching excellence.

9.1.1 What attitudes are necessary to utilize this methodology to improve classroom instruction?

- An open mind
- A willingness to change
- A willingness to learn some new things--none of which are rocket science--about continuous improvement: SPC, CQI/TQM theory, process improvement tools, planning tools
- A willingness to take some minor risks and give up some control
- A willingness to carefully monitor/assess/evaluate the teaching/learning process
- A willingness to assume a new role--that of learning facilitator-- in the teaching/learning process
- A willingness to learn about some new instructional techniques and how to use them effectively
- A willingness to try new and innovative teaching/learning strategies; discarding those that prove to be ineffective and keeping and improving those that work

9.1.2 What will be the likely effect?

- A new spirit in the classroom
- A reduced emphasis on grades; an increased emphasis on learning and outcomes
- Higher expectations by students of what they can learn
- Students leaving the class wanting to continue to learn
- An increase in student performance with reduced variation
- Teams helping each other learn; teams helping the professor to continue to learn

9.1.3 How can one get started?

- Read some of the articles cited in the references at the conclusion of this paper. Research the topic for yourself. Be as concerned about the teaching/learning process as you are about your course content.
- Talk to faculty members who are trying different strategies of instruction. Discover the effect these strategies have had on these faculty member's classes. Educational research clearly shows that only a few instructional strategies will lead to large (greater than two standard deviations) increases in student learning. These include the use of a mastery-learning model with re-teaching and re-testing, instructor or peer tutoring, collaborative/participative learning (e.g., teams), and the uses of new technologies such as multimedia and the Internet.
- **Just do it.** Try a new method for teaching a course topic. You needn't do a whole course. Remember, improvement comes step by step. Apply the PDCA model. Measure the resulting student learning. If you feel it works and can be further refined, continue to do so. If it clearly doesn't work, try something else. Ask the students if something is working or

not and what they think might work. Use their ideas. After all, they are the customers.

9.1.4 Ways in Which a University can Support Individual Faculty Members in This Effort

One of the most wonderful things that could happen in a university would be for all professors to adopt a continuous improvement model--a very personal decision. Clearly, this is highly unlikely. If a university wants to support a high level of TQM/CQI in the classroom and increase the probability that individual faculty members choose to adopt a continuous improvement approach to teaching and learning, the university must change its behaviour. Climate, resources, and rewards are prerequisites to long-term success in this endeavour.

Climate

Many faculty members would be encouraged to pursue a TQM/CQI approach to teaching/learning if a continuous improvement model was being practiced consistently within the rest of the university. For a substantial cross-section of faculty members to adopt the new philosophy in the classroom, credible examples of success in other areas would increase the probability of acceptance. For this to happen, the institution must make a long-term commitment to the philosophy; otherwise, adoption would be but a small fraction of what could be possible.

For a TQM/CQI philosophy to be adopted by a professor requires some risk taking. For faculty members to take risk, a climate must exist in which risk-taking is encouraged. This means that faculty members must trust the leadership and that the leadership must exhibit a genuine interest in what is happening with individual faculty members. Faculty members must feel valued and must believe that what they are doing is important to the

college or university leadership.

Support Resources

For faculty to adopt a continuous improvement model in teaching/learning, education and training is essential. The following topics are prerequisite:

- Knowledge of continuous improvement theory and practice
- Using quality tools to improve teaching and learning
- Knowledge of which instructional techniques and strategies work in different instructional situations.
- Training on how to select the most appropriate technique for a particular topic and audience and how to effectively utilize that technique
- Measuring the performance of instructional processes

How can this be accomplished?

A teaching and learning center with the appropriate expertise, the right funding, and a mission centered on a continuous improvement model for teaching and learning can be the focal point for faculty members to change their learning/teaching paradigms and to successfully implement a continuous improvement model in their classroom.

For such a center to be successful, the following ingredients must be present:

- The mission of the teaching and learning center must be centered on the continuous improvement of teaching and learning, and focused on disseminating techniques that work with students.
- The university community must view the expertise in the center as expert.
- The center must be adequately funded so that faculty with needs outside the expertise of the center can have their needs met elsewhere with funding from the center.

- The center should rely on existing faculty expertise and organized support clusters comprised of faculty who are at various stages of the continuous improvement process to assist newcomers in learning what TQM/CQI is all about.
- The center should rely on existing faculty expertise and organized support clusters comprised of faculty who are using particular teaching techniques effectively to advise instructors who would like to use a new teaching technique.
- The center must have state-of-the-art facilities, including computer resources with ties to electronic instructional resources outside the university, and staffed with personnel who know how to access these resources to solve a particular problem.
- The center must be customer-focused and practice the TQM/CQI philosophy in its own management and operation.

Rewards

Probably the most important *reward* to a teacher is intrinsic--that of making a difference in the life of a student. And that, frankly, is what is going to motivate most faculty to get involved. If applying this methodology can improve learning, faculty are going to be more successful in what they do. Success is its own reward.

Public celebrations of successes are important too. This includes recognition of teams that have improved products, and recognition of faculty who have documented major gains in improvement in student learning, not just the best one or ones--all of them. It's the commitment to the process that's important. The more gains there are to celebrate, the further the institution has moved in a positive direction. The gains, and their celebration, are ultimately what change the culture and improve the

institution as a whole.

The question of prizes, stipends, or salary increases to reward people for continuous improvement is a complex topic with many ramifications. There is no published research that I have found that demonstrates that monetary rewards cause improved performance among professors. It seems obvious, however, that an organization that values continuous improvement should reward people for their attempts at implementing it. Organizations should not claim that continuous improvement is important and then reward their employees for something else.

9.2 Barriers to Applying TQM in the Classroom.

Applying the TQM principles of continuous improvement to teaching requires an understanding of faculty discomfort with and resistance to the business-oriented approach of the TQM model. Schauerman and Peachy (1994), and Chaffee and Sherr (1992) describe some of the barriers to translating TQM to the classroom, as follows:

- Faculty resistance to the notion of the student as customer or beneficiary;
- Faculty resistance to interference in their disciplinary and teaching expertise;
- Differences between faculty and TQM reward and recognition systems;
- Threats to academic freedom;
- Costs of TQM training, which take away from direct classroom support.

9.3 Some Concluding Thoughts

The main goal of educators, must be to change their teaching/learning process from one which is dependent on inspection to obtain quality to one

in which the teaching/learning process itself guarantees quality. Application of the TQM/CQI philosophy can move them toward that goal. Adoption of CQI/TQM in the classroom will occur on two levels—individual faculty adoptions and large-scale institutional adoptions.

Individual Faculty Adoption

If a professor chooses to adopt the new philosophy, he/she can do it quickly. Learning about TQM/CQI is not difficult. Adopting new teaching strategies and monitoring them is well within the expertise of any faculty member. Every faculty member has the power to begin implementation in the classroom tomorrow. The toughest part is making the decision to change. **Just do it.**

Institutional Adoption

Obviously, a genuine institutional TQM/CQI adoption will provide the greatest gains. There are three reasons for this. First, more faculty will adopt the new philosophy and begin the continuous improvement journey. Second, the body of knowledge and expertise both in continuous improvement techniques and in effective teaching/strategies will be greater and consequently the gains will be greater and more rapid. Third, institutional adoption brings institutional resources to bear on the effort. This makes a systems approach to the effort possible, leading to synchronization and coordination of efforts and, therefore, greater gains. Because the knowledge and skills in basic courses are prerequisite to the learning that is possible in the more advanced courses (a true supplier/customer model), the potential gains possible from an integrated systems approach to teaching/learning are potentially very large.

If a university wishes to move its organization toward a culture that embraces positive change, the leadership of the university must lead the

way. Leaders, including members the governing board and senior administrators, must not only "talk the talk," but they must "walk the talk." They must not only talk quality, they must demonstrate it in their management style.[41] In addition, and perhaps most importantly, the university leadership must have the trust and respect of the university community.[42] Adopting a TQM/CQI model institutionally requires the courage to make the change, the commitment to see it through, the financial resources necessary to make it possible, and the willingness to lead by example.

[41] Glasser W. (1995). The Control Theory Manager, pp 63-64.
[42] Glasser W. The Control Theory Manager, pp 18-24.

CASE STUDY

TQM in Higher Education: The Babson College Journey.[43]

1. Introduction

In 1993 at Babson College, they begun dramatic changes in the following four areas:

1. Teaching Total Quality Management,
2. Curriculum as a whole,
3. Research in TQM, and
4. Using TQM as a way to run the institution.

Babson now applies TQM philosophy throughout its undergraduate and graduate curricula. Their new MBA curriculum was to be introduced in 1993-94. This new curriculum was going to be integrative by nature, and focuses heavily on teamwork and problem solving. They believe TQM will help them realize their vision of becoming an international leader in management education. In the beginning of their journey they realized that they had a long way to go, but believed that they had taken important steps.

2. Defining the Customers.

After the first Quality Forum hosted by Xerox Corporation in 1989, Babson received a curriculum development grant from Xerox. They began by taking stock of their constituencies, shown in the figure below.

[43] Susan West Engelkemeyer. *The Center for Quality of Management Journal,* Volume 2, number 1 Winter 1993, pp 28-33

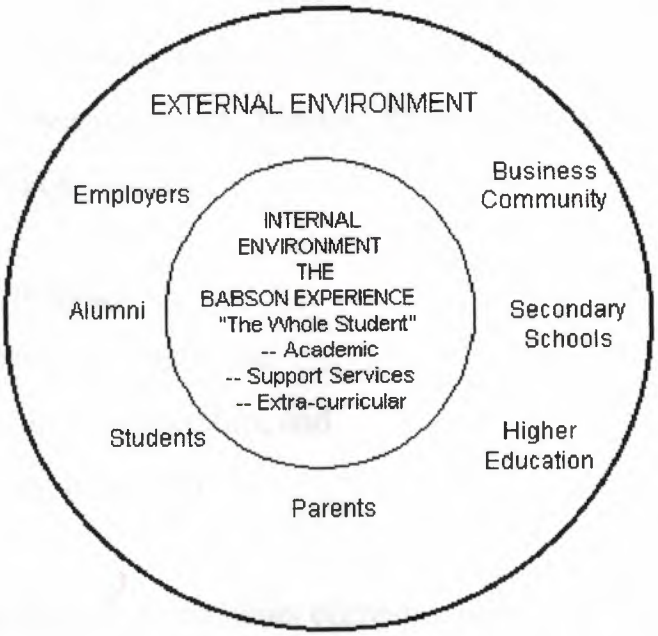


Figure: The environmental factors.

They realized that their students were their primary customers and that they had to respond to the "whole student," meeting academic, support and extracurricular needs. They say that, - "employers of our graduates were our primary external customers, but we also had to serve alumni, parents, and prospective students. Since secondary schools were our suppliers, we had to educate them about our needs as their customers. And we had to remember that society, as a whole was perhaps our ultimate customer. We need to give society socially responsible graduates. "

3. Introducing Total Quality Management into the Curriculum

In the 1990-91 school year, faculty sought the advice of numerous corporations about what to teach regarding Total Quality Management. Xerox, IBM, and Procter & Gamble played key roles in communicating corporate needs.

By fall 1991 they were ready to implement full-semester courses on TQM

at both the graduate (MBA) and undergraduate (BSBA) level. The undergraduate course emphasized basic Total Quality tools and followed the structure of Westinghouse Electric Corporation's four-element Total Quality Control (TQC) model:

1. Customer orientation,
2. Human resource excellence,
3. Product/process leadership, and
4. Management leadership.

They noted that these four elements corresponded to the basic areas that are the foundation for Hewlett-Packard's TQC model as well as the model for excellence proposed by Peters and Austin.

The graduate TQM course included more management tools, such as KJ or Affinity diagrams and Quality Function Deployment. It follows the Shiba model used by the Center for Quality Management. It stresses the three foundation elements:

- ❖ Customer focus,
- ❖ Total participation, and
- ❖ Continuous improvement.

Simulations and cases demonstrate that quality creates a competitive edge. While they were developing the TQM courses, they also integrated quality topics throughout the curriculum. Table 3 indicates the TQM-related percentage of the content of some courses, and lists one or more of the TQM topics covered in those courses.

In addition to introducing tools and techniques of Total Quality, courses

were designed to enhance communication skills (a long time thrust at Babson) and group interaction skills (an area that was always part of Babson's curriculum, but which was greatly strengthened in response to the voice of corporate customers). Class participation is a component of the course grade for all the classes listed in table 1, accounting for as much as 40 percent of the grade. A majority of Babson courses now require work in teams for case analysis and field projects. Babson also offers course credit for group work in the Management Consulting Field Experience (MCFE) program, which recommends solutions to business problems of sponsoring companies.

Graduate (Master of Business Administration)		
Course Title	**TQM Content**	**TQM Topic**
Managing Operations	30%	Quality management
Statistics	20%	Control charts
Topics in Statistical Analysis	20%	Seven basic toobls
Inventory Management	20%	Just-in-time
Management of Services	10%	Service quality
Managerial Accounting	15%	Activity-based costing
Managerial Cost Accounting	15%	Cost of quality
Marketing Systems	10%	Marketing research
Corporate Strategy	10%	Strategic processes

Quality in Babson College's Current Curriculum		
Undergraduate (Bachelor of Science in Business Administration):		
Course Title	**TQM Content**	**TQM Topic**
Operations Management	50%	Statistical process control/Just-in-time
Probability and Statistics	25%	Control charts
Managerial Accounting	15%	Cost of quality
Financial Planning/Cost Control	15%	Activity-based costing
Marketing Fundamentals	10%	Market research
Policy Formulation	10%	Strategic quality management

Teams of three to five undergraduate or MBA students, each team directed by a faculty adviser, have been consulting with Boston-area businesses since 1976. Recently MCFE teams have helped assess the extent of quality management within various divisions of a large global firm, establish an activity-based costing program for a local high-technology firm, and benchmark the processes of the finance division of an electronics company. In 1990 the MCFE office organized 22 graduate and 26 undergraduate projects in a wide variety of organizations, from Fortune 500 companies to non-profit organizations.

In addition, all the classes listed in table 1 require written case analyses or

group field projects, which range from 15 percent to 60 percent of the course grade.

4. Research in Total Quality Management

Academic research is often criticized for narrow focus and lack of applicability to real business. Most traditional universities consider research to consist primarily of studies published in peer-review journals read mainly by other academics.

Babson has a tradition of encouraging applied research of value to a crucially important customer--the business community that employees their graduates. At Babson, communications that influence managers have long been given equal status with articles in peer-review journals. The college also weighs professional competence as indicated by involvement in professional organization, speeches, and business and consulting activities. In the last several years Babson faculty have built on that tradition by doing significant explorations of TQM.

At least seven faculty did a TQM research, including studies of activity-based accounting, benchmarking, quality function deployment, six-sigma performance, culture change, ISO 9000, the Malcolm Baldridge National Quality Award, information systems to support TQM, and measurement of the extent of Total Quality Management practice within organizations. Faculty involved in TQM research come from the accounting, operations, service management, and marketing areas. In 1991 and 1992 these faculty produced 23 research articles and presentations on TQM.

Six faculty members involved with the graduate TQM course decided to create a TQM textbook. Each instructor is from a different discipline, a fact that underscores the cross-functional nature of TQM. The text will link

functions as diverse as marketing and accounting through a set of driving themes:

- Change as a corporate culture,
- Management by fact,
- Global strategy, and
- Social responsibility.

In all, over 20 percent of the full-time faculty at Babson (and about 40 percent of their faculty in business-related disciplines) are now actively learning, writing, and educating others about Total Quality Management.

Babson's New MBA Curriculum

At the initial Quality Forum in 1989, David A. Nadler of Delta Consulting Group presented a list of "Implications for Management Education" that included the following statement:

"Quality will require rethinking of the MBA curriculum – management as a total system and process, vs. function and disciplinary views."

Porter and McKibbin's landmark study "Management Education: Drift or Thrust into the Twenty-First Century?" also emphasized the need to deliver cross-disciplinary management education rather than simply teaching functional skills.

At the same time that Babson faculty members were listening to customers to develop a new TQM course and to add TQM- related topics to traditional courses, and a faculty curriculum committee led by Tom Moore, dean of Babson's graduate school were in the midst of a five-year effort to rework the MBA curriculum as a whole. That group also listened to Babson's

corporate customers and to current students. So they developed the new curriculum, in which:

Student's first year would be divided into five thematic modules under the overarching concept, "Entrepreneurial Management in a Changing Global Environment." The five themes are:

- Creativity/Critical Thinking: Enhancement of creative and problem-solving skills.
- Opportunity Assessment/Emerging Technologies: Assessment of the global environment.
- Designing the Delivery System: Design and management of an organization to deliver products and/or services. This module focuses on the integration of operations, accounting, financial, marketing, and organization systems to support a chosen strategy.
- Product Launch/Global Competitiveness: Global market structures and competitive constraints. This module discusses integration of constraints such as quality, labour, and working capital with external requirement such as trade policies in the launching of new products and services.
- Next Products/Sustaining Growth: Sustaining growth and development in a changing global environment. This module addresses the future of the organization through in-depth study of issues such as strategic alliances, mergers, and acquisitions, while ensuring that development plans are linked to the changing global environment.

Faculty from functional disciplines will teach "units" related to their specialties within the modules. Therefore, students will be exposed to accounting, finance, marketing, operations, organizational behaviour, and other traditional functional areas. But the areas will be integrated within modules to help students learn to address complex, interrelated problems.

The themes of Total Quality Management, leadership, and ethics will be woven into each of the modules.

In addition, the entering MBA class will be divided into teams, each with four to six students. A mentor from a corporation will involve each team in examining, understanding, and solving real problems challenging the mentor's organization. Teams will complete projects and assignments within their sponsoring firms; this experience will give students a chance to learn in situations similar to the work environment they will encounter after graduation: globally competitive businesses.

The second year of the new MB program will develop expertise in an elective area of concentration. All students will also take a full-year course on global strategy and will spend time outside the United States. The global strategy course includes a computer simulation game that parallels the course work.

To evaluate curriculum development and assess programs once implemented, they invited representatives from the corporate community to serve on a curriculum development team. They also intended to develop a standard measurement system for customer requirements and for student capabilities following graduation.

The influence of TQM in management of the college began with the development of the college's Strategic Plan 1991-95. Over 100 members of the Babson community, including faculty, administrators, students, alumni, and trustees, participated. After the basic principles underlying the plan were established at a high level, each division developed its own supporting strategies and objectives, with timetables and methods for evaluating results.

Babson's top management (the "President's Cabinet") participated in

TQM training in 1991. In fall 1992 the cabinet as a group undertook a comprehensive review of the college's goal- and objective-setting process utilizing TQM tools. The cabinet documented the current process by means of a flowchart. Then, looking at senior and midlevel managers as customers, cabinet members held interviews to confirm customer requirements. The cabinet then generated a problem statement, worked out revisions in the flow of the process, and developed ways to integrate it more fully with the budgeting and performance-appraisal processes.

President William F. Glavin established Babson's Office of Quality effective June 1992. It includes:

One full-time administrator responsible for training and TQM implementation in the administration of the college, and one faculty member, who was released from one-half of her teaching responsibilities to work with the faculty on TQM training and implementation in academic programs.

Both of these directors of quality attended the Center for Quality Management's 6-day course for senior executives during the summer of 1992. The Office of Quality is now developing a TQM infrastructure for Babson following the Shiba model.

Twelve "quality specialists" from Babson's faculty and administrative staff are being trained. They are delivering a three-day introductory workshop in TQM to all staff, serving as internal quality consultants, and forming the quality steering committee for administrative services. Some 40 percent of all staff has so far been trained in the three-day workshop, and the college intended to train everyone by October 1993. Three secondary workshops in specific quality tools have been developed.

As part of the initial training, all staff select a group project and then solve

a problem using quality tools. The graduate admissions office staff, for example, decided to seek ways to improve the enrollment process. They discovered that eight mailings were being sent to accepted students, and they used the 7-step problem-solving process to combine these mailings into one packet. The new packet eliminated 220 staff hours used in producing the mailings, plus additional time spent tracking missing forms. Results of a survey of new students indicate that the new acceptance packet significantly influenced 22 students to enroll at Babson.

Completed projects have also resulted in major changes to the freshman advisory program and to daily operations of the Information Technology Services Division. More than 40 quality improvement projects are now addressing such diverse issues as the student loan process and the assessment of how graduates' employers view their preparation at Babson.

In addition, the academic deans and chairs of the college recently completed a TQM retreat, where they used the KJ method to evaluate faculty load. And eighteen faculties have formed an ad hoc group called "The Quality Folk". It has met informally for two years, and it is now working closely with the academic director of quality to identify priority areas for academic quality initiatives. Last fall this group and the academic director of quality used a KJ diagram to identify the major academic quality issues and then formed teams for problem-solving cycles in each of the most important areas.

One topic the group decided to address was student evaluation of faculty. Babson currently administers an evaluation of each course near the end of the semester. However, faculty can benefit from more frequent feedback. One faculty member has sought feedback at every class over the past two semesters, asking for ideas on strengths, weaknesses, and possible

improvements. Thus, the professor can spend time at the beginning of each class to cover information that the feedback forms show not to have been covered in adequate detail in previous classes, or to provide other information students have requested. A faculty problem-solving effort will try to make this kind of methodology more widespread.

What Were the Problem Areas?

Since their TQM journey was still young, they continually encounter challenges;

Initially, they encouraged senior managers to undertake quality training but did not specify a common program. Ultimately they decided that common tools and language were necessary so the entire community could operate from a common base of knowledge.

Quality Improvement Teams lose motivation or stall in the problem-solving cycle. In general, they had not made a concerted effort to monitor progress of teams. They were then considering a database program that would track the status of projects and provide information on resources to assist teams.

They needed assistance in determining the best method to engage the faculty in TQM. So, they mobilized a core group of faculty to identify and initiate projects, and will rely on information from the academic deans and chairs as well. Problems in rolling out TQM seem common to many professional service providers--not only in higher education, but also health care and legal services. They began to air these problems and discuss solutions with other organizations.

They also needed to facilitate a paradigm shift so managers move from the role of "the one who has the answers" to "the one who asks the questions".

Initial Quality Improvement Teams consisted of people within a particular department or division. Training individuals in "family" groups encouraged

them to practice the tools in familiar territory. They had to then help groups think about larger problems than cross-divisional boundaries.

They had much too do, however, they had a clear vision of what they wanted to be--an international leader in management education. They had clear goals and objectives. They trained their employees to uses quality tools and listened to their customers and made revolutionary changes in their curriculum.

They were doing their best to help their students understand the complexity, challenge, and functional interrelationships of a Total Quality Management system. In addition, they embraced Total Quality as a way to manage their organization to improve what they were doing at the present, and to redesign their organization for the 21st century.

CONCLUSIONS

Adapted to higher education, quality programs offer tantalizing benefits as universities are being increasingly called to account by their various constituencies: students, parents, alumni, taxpayers, legislators, boards, business and industry, employers of graduates, foundations, and private and federal granting agencies.

This paper has attempted to show that the principles of TQM can and should be applied to the higher education sector. Consulting with stakeholders and working hard to provide students with clearly communicated and explicit guidelines for study are important aspects of the teaching and learning environment at tertiary level. The directions, values and expectations set by a university should match to the needs of all their stakeholders.

The TQM motto in education is learn what the students need and constantly improve the educational process to deliver it consistently.

The purpose of encouraging a culture of academic quality is to ensure that formal and informal processes are improved on a continuous basis. Such a commitment is only possible if there is a strong sense of individual responsibility for systematic evaluation of performance based on the dual criteria of improvement and accountability. Achieving such quality goals involves an internal system at two levels: Firstly, that in which mission, goals, strategy and educational outcomes are linked sequentially and interdependently by means of the twin focus on improvement and accountability; and secondly, the network of committees which comprise the formal Academic Quality System.

Dedicated academic staff is needed to focus and provide the stimulus for

quality improvement programs. These staff should be champions of teaching and learning with a strong desire for quality improvement in a broad range of aspects of the teaching and learning environment. Teaching and learning is back on the agenda and must be taken seriously if universities are to survive in the current competitive environment.

Furthermore, if a university wishes to move its organization toward a culture that embraces positive change, the leadership of the university must lead the way.

One very important point is that every program for quality in higher education institution should start with a discussion of what is meant by quality in higher education. This will make it possible to compare different perceptions and discuss the values behind them.

The difficulty arises, not in deciding whether or not these principles ought to be applied to higher education, but in deciding on the specifics and interpreting the how, where, when and what, of implementing TQM principles.

Many universities are applying the TQM principles in different processes within their campuses, mainly of business type, but the main focus should be on the improvement of the teaching and learning process for this is the one that will truly bring about excellence to the education system.

In order for professors to achieve this, the most effective way is through immediate and continuous feedback (the key quality improvement tool), which will give them a better understanding on student needs and learning abilities. Assessment is the mean through which professors gain feedback. Professors should try to improve their teaching methods and enhance classroom effectiveness in a way that it would benefit even more their students and in turn the society as a whole. They should consider

alternatives to many of the traditional or current practices and be open to change. Faculties should as well be opened to changes and encourage members to pursue a TQM approach to teaching and learning.

The university should as well continuously strive to promote student learning, research and service. Higher education institutions should be able to respond to the changing needs of the societies which they are a part and aid the economic development through research and development of new ideas.

One of the main limits or disadvantages of TQM in Higher Education is that the idea of the student as the customer. TQM's strong focus on customer satisfaction as the basis for defining quality is foreign, and often objectionable to the traditional academic way of thinking, where academic freedom and autonomy are stressed. This is difficult to be accepted by the professors and often is resented by them, so it brings about stagnation and failure to completely realise and check how much is being learned.

It has been suggested that the stronger the academic culture, the harder the resistance to TQM, and that since the academic culture is stronger in old universities than in newer institutions, the resistance will be harder in the former.

What one therefore can expect from a total quality approach to education is increased customer satisfaction, improved programs, improved student performance, increase teacher motivation, increased flexibility, improved cooperation between professors and administrators, greater parental and public involvement, etc.

Finally, I would recommend further study in the context of TQM in Higher Education to be conducted on how research and development can be restructured to help the society within which that university operates.

APPENDIX I

GLOSSARY OF CONTINUOUS QUALITY IMPROVEMENT TERMS

Common-Cause Variation: Any normal variation inherent in a work process. (See also *Special-Cause Variation*.)

Complexity: Unnecessary work; any activity that makes a work process more complicated without adding value to the resulting product or service.

Continuous Improvement Process: The ongoing enhancement of work processes for the benefit of the customer and the organization; activities devoted to maintaining and improving work process performance through small and gradual improvements as well as radical innovations.

Control Chart: A line graph that identifies the variation occurring in a work process over time; helps distinguish between common-cause variation and special-cause variation.

Cost of Quality: A term used by many organizations to quantify the costs associated with producing quality products. Typical factors taken into account are prevention costs (training, work process analyses, design reviews, customer surveys), appraisal costs (inspection and testing), and failure costs (rework, scrap, customer complaints, returns).

Cross Functional: Involving the cooperation of two or more departments within the organization (e.g., Marketing and Product Development).

Customer Expectations: The "needs" and "wants" of a customer that define "quality" in a specified product or service.

Deming Cycle (also known as ***Shewart's Wheel***): A model that describes the cyclical interaction of research, sales, design, and production as a continuous work flow, so that all functions are involved constantly in the

effort to provide products and services that satisfy customers and contribute to improved quality.

Department Improvement Team: Made up of all members of a department and usually chaired by the manager or supervisor, department improvement teams function as a vehicle for all employees to continuously participate in ongoing quality improvement activities.

Fitness-For-Use: Juran's definition of quality suggesting that products and services need to serve customer's needs, instead of meeting internal requirements only.

Juran Trilogy: The interrelationship of three basic managerial processes with which to manage quality, quality control, and quality improvement.

Just-In-Time (JIT): A method of production and inventory cost control based on delivery of parts and supplies at the precise time they are needed in a production process.

Kaizen: Japanese term meaning continuous improvement involving everyone-managers and employees alike.

Key Expectations: The requirements concerning a specified product or service that a customer holds to be most important.

Process Improvement Team: Includes experienced employees from different departments who solve problems and improve work processes that go across-functional lines.

Quality: a customer's perception of the value of a product or service; organizations, theorists, and dictionaries define it differently. Well-known definitions include:

"Conformance to requirements" (Crosby)

"The efficient production of the quality that the market expects" (Deming)

"The total composite product and service characteristics of marketing,

engineering, manufacturing, and maintenance through which the product and service in use will meet the expectations of the customer" (Felgenbaum) "Anything that can be improved" (Imal)

"Meeting or exceeding customer expectations at a cost that represents value to them" (Harrington)

"Does not impart loss to society" (Taguchi)

"The totality of features and characteristics of a product or service that bare on its ability to satisfy a given need" (American Society for Quality Control)

Quality Circle: A small group of employees organized to solve work-related problems; often voluntarily; usually not chaired by a department manager.

Quality Initiative: A formal effort by an organization to improve the quality of its products and services; usually involves top management development of a mission statement and long-term strategy.

Special-Cause Variation: Any violation arising from circumstances that are not a normal part of the work process.

Task Force: An ad hoc, cross-functional team formed to resolve a major problem as quickly as possible; usually includes subject matter experts temporarily relieved of their regular duties.

Work Partnership: A mutually beneficial work relationship between internal and external customers and suppliers.

Work Process: A series of work steps that produce a particular product or service for the customer.

Zero Defects: An approach to quality based on prevention of errors; often adopted as a standard for performance or a definition of quality (notably in Crosby Quality Training).

APPENDIX II

PARETO CHART

A Pareto Chart is a special form of a bar graph and is used to display the relative importance of problems or conditions.

A PARETO CHART IS USED FOR:

1. Focusing on critical issues by ranking them in terms of importance and frequency (example: Which course causes the most difficulty for students? which problem with Product X is most significant to our customers?)
2. Prioritizing problems or causes to efficiently initiate problem solving (example: Which discipline problems should be tackled first? or, What is the most frequent complaint by parents regarding the school? solution of what production problem will improve quality most?)
3. Analyzing problems or causes by different groupings of data (e.g., by program, by teacher, by school building; by machine, by team)
4. Analyzing the before and after impact of changes made in a process (example: What is the most common complaint of parents before and after the new principal was hired? has the initiation of a quality improvement program reduced the number of defectives?)

STEPS IN CONSTRUCTING A PARETO CHART WITH STEP-BY-STEP EXAMPLE:

1. Determine the categories of problems or causes to be compared. Begin by organizing the problems or causes into a narrowed down list of categories (usually 8 or less).

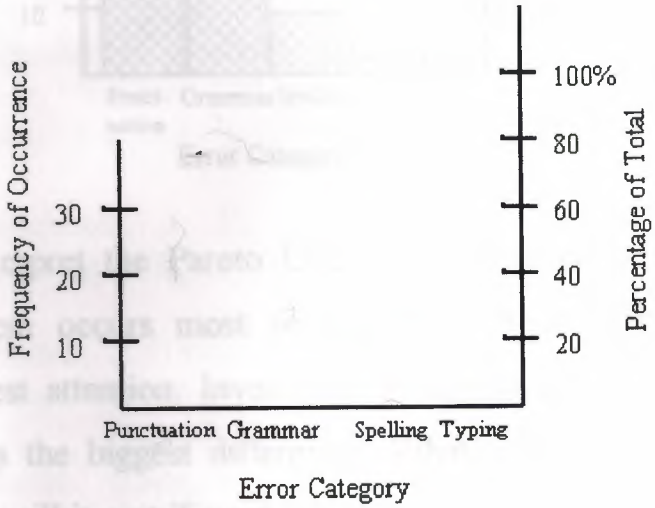
2. Select a Standard Unit of Measurement and the Time Period to be studied. It could be a measure of how often something occurs (defects, errors, tardiest, cost overruns, etc.); frequencies of reasons cited in surveys as the cause of a certain problem; or a specific measurement of volume or size. The time period to be studied should be a reasonable length of time to collect the data.

3. Collect and Summarize the Data. Create a three-column table with the headings of "error or problem category", "frequency", and "percent of total". In the "error or problem category" column list the categories of problems or causes previously identified. In the "frequency" column write in the totals for each of the categories over the designated period of time. In the "percent of total" column, divide each number in the "frequency" column by the total number of measurements. This will provide the percentage of the total.

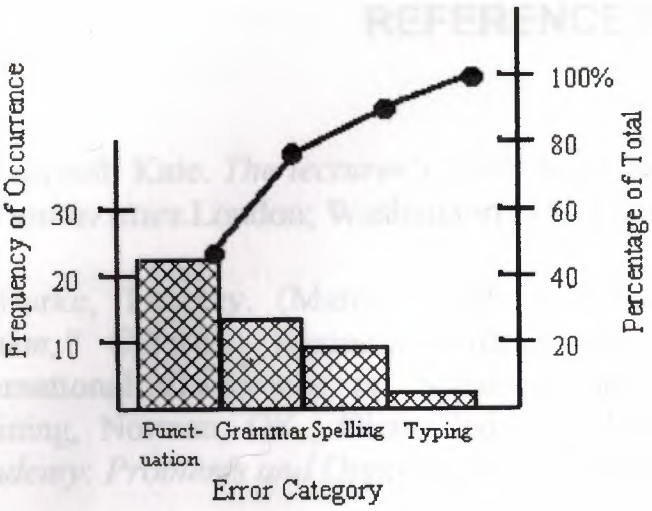
Error Category	Frequency	Percent of Total
Punctuation	22	44%
Grammar	15	30%
Spelling	10	20%
Typing	3	6%
TOTAL	50	100%

Create the framework for the horizontal and vertical axes of the Pareto Chart. The horizontal axis will be the categories of problems or causes in descending order with the most frequently occurring category on the far left (or at the beginning of the horizontal line). There will be two vertical axes, one on the far left and one on the far right. The vertical axis on the far left

point will indicate the frequency for each of the categories. Scale it so the value at the top of the axis is slightly higher than the highest frequency number. The vertical axis on the far right will represent the percentage scale and should be scaled so that the point for the number of occurrences on the left matches with the corresponding percentage on the right.



4. Plot the bars on the Pareto Chart. Using a bar graph format, draw the corresponding bars in decreasing height from left to right using the frequency scale on the left vertical axis. To plot the cumulative percentage line, place a dot above each bar at a height corresponding to the scale on the right vertical axis. Then connect these dots from left to right, ending with the 100% point at the top of the right vertical axis.



5. Interpret the Pareto Chart. Use common sense-just because a certain problem occurs most often doesn't necessarily mean it demands your greatest attention. Investigate all angles to help solve the problems-What makes the biggest difference? What will it cost to correct the problems? What will it cost if we don't correct this problem?

REFERENCES

1. Ashcroft, Kate. *The lecturer's guide to quality and standards in colleges and universities.*London; Washington D.C. Falmer Press, 1995

2. Burke, Timothy. (March 1995). " *A competitive Public Education System,"* Colorado Business Alliance for Youth, at the 3rd Annual International Conference on Standards and Quality in Education and Training, Norman, OK.; Olian, Jody Y. (1995). *"Total Quality and the Academy: Problems and Opportunities in Quality in Higher Education".*

3. Brockman, J. R. (1992). *"Just another management fad? The Implications of TQM for library and information services."*

4. Chizmar, J. (1994) *Total Quality management (TQM) of Teaching and Learning, Journal of Economic Education, volume 25, number 2.*

5. Chafee, Ellen, E and Sherr, Lawrence, A *Quality: Transforming Postsecondary Education.* ASHE-ERIC Higher Education Report No.3. Washington D.C.: Association for the Study of Higher Education, 1992.

6. Crosby, P. (1984). *Quality Without Tears: The Art of Hassle-Free Management.* New York: MacGraw-Hill.

7. Deming, W. Edwards (1986). *Out of the Crisis,* Cambridge MTI Center for Advanced Engineering Study

8. Deming, W. Edwards (1993). *The New Economics for Industry, Government, Education* Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study.

9. DeCarlo, Neal J. and Sterett, W. Kent. (1995). *"History of the Malcom Baldrige National Quality Award"*, Quality in Higher Education, Ed Brent D. Ruben, Transactions Publishers, New Brunswick p.87.

10. Evans, J. R., & Lindsay, W. M. (1993). *The Management and Control of quality* (2nd edition). St. Paul, MN: West.

11. Fisher, D. C. (1994). *Measuring up to the Baldrige.* New York: American Management Association.

12. Glasser, W. (1995). *The Control Theory Manager.* New York: HarperCollins Publishers.

13. Heizer, J., & Render, B. (1996). *Production and operations management* (4th edition) Upper Saddle River, NJ: Prentice-Hall.

14. Hutchens, S. (1991). *Facing the ISO 9000 challenge.* New York: Compliance Engineering.

15. Izadi, M., Kashef, A. E., & Stadt, R. W. (1996). *Quality in higher education: Lessons learned from the Baldrige award, Deming prize, and ISO 9000 registration.* Journal of Industrial Teacher Education, 33(2), 60-76

16. Kendrick, J. J. (1993a, January). Five Baldrige Awards in year five. *Quality, 24-31*

17. Lampercht, J.L. (1992). *ISO 9000, preparing for registration.* Milwaukee: ASQC.

18. Lee, S. M. & Schniederjans, M. J. (1994). *Operations management.* Boston: Houghton Mifflin.

19. Lindsay, A. (1994). Quality and management in universities *Journal of Higher Education Management, 9 (2), 57-70*

20. Ray, M (1996) *Total Quality Management in Economic Education: Defining the Market,* Journal of Economic Education, volume 27, number 3, pp276-283.

21. Richards, Dale O. (March 1995). *"ASQC\Education Division and Needed School Changes,"* Standards and Quality in Education Training Conference, Norman, Oklahoma

22. Ruben, Brent D. (1995a). *"The quality Approach in Higher Education: Context and Concepts for Change",* Quality in Higher Education, Ed Brent D. Ruben, Transaction Publishers, New Brunswick, p 21-24.

23. Shafer, B.S., & Coate, L.E. (1992). *Benchmarking in Higher Education: A Tool for Improving Quality and Reducing Cost.* Business Officer, 26(5), 28-35.

24. Thurow, L. (1993). *Head to Head: The Coming Battle Among Japan, Europe, and America*. New York: Warner.

25. Tribus, Myron (October, 1994). *New ideas come more easy to those accustomed to change*. TQM in Higher Education

26. Tribus, Myron (undated). *Total quality management in schools of business and engineering.*

Works Cited from the World Wide Web

http://www.west.asu.edu/tqteam/library/books.html

http://www.Auckland.ac.nz/cpd/HERDSA/HTML/workshop/FEAST.htm

http://www.systma.com/tqmpap.html

http://www.qub.ac.uk/mgt/cmk/franpubl.htm

http://deming.eng.clemson.edu/pub/tqmbbs/toolstechs/10reasons.txt

http://www.quality.org/tqmbbs/education/winthrp.txt

http://scholar.lib.vt.edu/ejournals/JITE/v33n2/izadi.html

http://www.umr.edu/~assess/tqm/tqmhed.html

http://www.adl.rutgers.edu/QHE_order.html

http://web.bham.ac.uk.mme3mso0/TQMHE.htm

http://www.shef.ac.uk/~is/publications/infres/paper56.html

http://www/nyu.edu/classes/jepsen/biblio.html

http://puslit.petra.ac.id/news/seminars/tqm/index.htm

http://edtech.cebs.wku.edu/~edleader/sa/courier.htm

http://www.eriche.org/trends/administration2000.html

http://ultibase.rmit.edu.au/Articles/oct98/ledic2.htm

http://www.au.af.mil/aul/bibs/tqm/educ.htm