Foundation Coalition at Texas A&M University: Utilizing TQM and OD to Manage Curricula Change

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Abstract

The Foundation Coalition is developing and implementing significant changes in how first and second year college engineering, mathematics, science and English courses are taught. These efforts incorporate strategies which have been explored at many institutions, such as: integrating content across course boundaries, delivering instruction in active and cooperative environments, and utilizing technology more effectively as a teaching tool.

In the early 1980's U.S. Industrial Forces realized that in order to maintain, and in some cases regain, a competitive edge in the marketplace, changes would have to be made in the way business was conducted. A number of companies introduced these changes through the principles of Total Quality Management (TQM).

TQM is an approach to improve broad-based quality processes in an organization by total customer focus and continuous process improvement. Some would argue that while TQM has been beneficial in improving quality and increasing productivity, it has not been as effective in facilitating changes in individual philosophies or major corporate philosophies. Therefore, many academic institutions have developed a level of frustration in attempting to depend on TQM as the sole tool for driving broad changes.

Organizational Development (OD) is another strategy used by industries in transition. It is focused on changing the climate and culture of an organization. OD places strong emphasis on team development through collaborative problem solving, openness in expressing emotional as well as task oriented needs, developing a tolerance for conflict, and asks that individuals conduct periodic self-assessment.

This paper examines the fundamentals of TQM and OD and compare similarities and differences of each principle. TQM principles are particularly useful in assessing the effectiveness of curriculum innovation at a research university. OD principles are important in facilitating paradigm shifts in the attitudes of faculty, staff and students from a traditional curriculum to an innovative integrated curriculum.

Total Quality Management

In defining the concept "Total Quality Management" some define each term. *Quality* is defined as an offering (product or service) that meets or exceeds customer requirements. *Quality management* can be defined as developing and operating work processes that are capable of consistently designing, producing, and delivering quality offerings. Central to this definition is the focus on process (versus functional) management as a primary means of continuous improvement. Thus *Total Quality Management* can be defined as creating and implementing organizational architectures that motivate, support, and enable quality management in all the activities of the enterprise.[1]

Four elements form the foundation of TQM: people, continuous improvement, process, and the customer. Each element is described briefly below.

People: The objective within TQM is to empower people, so that optimal results can be accomplished through teamwork. Empowerment begins with training in the areas of communication skills, interactive skills, and effective meeting skills. Training is an ongoing process.

Continuous Improvement: Continuous improvement embodies the Deming cycle of Plan, Do, Check, Action cycle (PDCA). The cycle promotes the never-ending pursuit of excellence.

Process: Several tools are used in evaluating the process. The tools are used to analyze a problem, choose solutions, develop an action plan, evaluate implementation results and focus on the customer and customer requirements.

Customer: The primary focus of TQM is the customer and customer satisfaction. There are five perceptions of quality (called quality elements) that correlate to customer satisfaction. Of the five, three are of particular importance: *expected quality, satisfying* quality, and *delightful quality.*

TQM is a general philosophy of management. It can be tailored for a particular environment and there are as many ways to implement TQM as there are organizations adopting it. TQM is a system that comprises a set of integrated philosophies, tools, and processes used to

accomplish objectives by creating satisfied customers and motivated employees.

TQM is a management system, not a series of programs. Many of the tools promoted as part of TQM can be successfully applied within any organization, but the full benefits cannot be obtained without changing the attitudes and priorities of day-to-day operations. For TQM to be successful, it must be adopted throughout the organization and it requires a long-term commitment from the top down.

Many see TQM as a remedy/quick-fix for all organizational ills. It is not the single answer to all questions. In fact, this viewpoint is not only incorrect but dangerous. Total quality management is a fundamental change in how an organization functions. It has an impact on almost everything that goes on in the organization.

Organizational Development

There are many definitions for the term "Organization development", some are narrow in scope, while others are broad. A very inclusive one follows:

Organizational development (OD) is a long-range effort to improve an organization's problem-solving and renewal process, particularly through a more effective and collaborative management of organization culture with special emphasis on the culture of formal work teams with the assistance of a change agent, or catalyst, and the use of the theory and technology of applied behavioral science, including action research. [2]

In order to fully understand this definition it is important to define the terms used in the definition.

Problem-solving process refers to the way an organization faces the opportunities and challenges of its environment. *Renewal process* is defined as the process for initiating, creating, and confronting needed changes so as to make it possible for organizations to become or remain viable, to adapt to new conditions, to solve problems, to learn from experiences. *Culture* encompasses hidden and overt attitudes, values, beliefs, goals and structure within the organization enduring over time. *Collaborative management of the culture* refers to a shared kind of management, not traditional hierarchical structure. A *work team* is a group of employees reporting to a superior. A *change agent or catalyst* is a third party, usually external to the group initiating an OD effort. *Action research* is the basic method that is used in most OD efforts, and consists of exploration, data gathering, feedback, action planning, and action.

OD evolved from the contributions of a number of behavioral scientists and practitioners. Two separate but related developments are considered to be the roots of OD.

The first of these is laboratory training. A group of researchers conducted research and training for community leaders. They concluded that furnishing data about individual and group behavior stimulated greater interest and appeared to produce more insights and learning than did lectures and seminars. The second root is survey research and feedback, which refers to the use of attitude surveys and data feedback in workshop sessions.

The organization development approach to change involves systematic change that relies upon a deliberate assessment of where an organization is and where it wants to be. The gap that exists is where problems usually lie and change begins. A plan is then developed to close the gap. Simple knowledge of the gap does not make change happen; rather, change demands the participation of members of the organization in making things happen which meet the needs and goals of the organization and the individual.

All too often, change strategies and change strategists from inside and outside an organization offer the promise of quick solutions to complex problems. Changes made through an organization development approach normally require much more time because of the systemic fashion of the approach. OD takes into account both data and experience, emphasizes goal setting and planning, is implemented with a contingency approach, and focuses on intact work teams.

Change occurs in every organization. Most changes, especially in educational institutions, can best be described as *evolutionary*. Evolutionary change occurs when individuals are unwilling or unprepared to confront their disagreements. Evolutionary change comes in small adjustments in response to emerging problems with the status quo. Underlying these changes is the assumption that progress is possible if each problem is dealt with as it arises. This is also known as "problem-solving-as-you-go" development. Only problems which force themselves into the focus of attention are dealt with. Evolutionary processes are painfully slow.

A second less successful or planned approach to change is *revolutionary*. Revolutionary change is usually championed by those who are so deeply frustrated that their overwhelming desire is for a speedy change of any kind and the relief that accompanies it after a long period of suffering. Negative side effects usually result. This approach is rare in higher education.

TQM and OD

TQM and OD include many of the same values, assumptions, and processes. However, TQM differs from OD because it relies heavily on measurable results, focuses on quality and promotes product improvement. OD on the other hand is instrumental in initiating change and building organizational teams, while providing limited/no focus on measurable results, quality or product improvement.

TQM is a new way of managing while OD is more in line with traditional components of management. TQM is primarily a strategy/set of tools used by organizations concerned with customer satisfaction, and continuous improvement. Traditional management emphasizes planning, organizing, operating/directing and controlling. They are different but related.

Organization development is a much broader concept than traditional management development and TQM. OD is oriented towards nurturing the ability of the organization (or, some subunit) to grow and develop and is initiated when problems in the organization or some subsystem are detected.

Resistance

An important factor to consider in attempting to understand the change process is resistance. Resistance can be both on an individual and organizational. While organizational resistance is important, individual resistance should be consider first since organizations can not change without first getting individuals to change.

While most resistance can be attributed to fear; beliefs, feelings and values also contribute to resistance.[3] These factors determine mind-set and can be defined as follows:

Fears are objective realities that can be proven with evidence.

Beliefs are subjective assumptions, conclusions, and predictions.

Feelings are our emotions.

Values are our beliefs about what's important.

Considering an individual's state of mind yields the following causes of resistance.[3]

1. Individuals believe their needs are already being met.
2. Individuals believe change will make it harder for them to meet their needs.
3. Individuals believe that the risks of change outweigh the benefits.
4. Individuals see no need to avoid or escape a participation situation.
5. Individuals believe the organization is inappropriately handling the change process.
6. Individuals believe the change will fail.

Faculty resistance to change can be categorized into several broad areas. A study, conducted at Arizona State University, reported the following reasons faculty members resist changes in the classrooms [4]

1. New initiatives are threatening.
2. Desire to perpetuate the theory vs. application dichotomy.
3. Life as faculty members currently know it will change.
4. Autonomy decreases as integration/partnering with students increases.
5. Concerns about student self-assessment and faculty sponsorship.

Each of these reasons fit into the one of four factors attributing to the individuals state of mind in the change process. In addition to these reasons remember teaching is only one of several activities that engage faculty time. They spend time in varying amounts, on student- and classroom-related activities, on research, on service to their institution, on national and regional professional service and on whatever they deem important. Enticing them to shift this paradigm will not be an easy task.

Overcoming resistance is not an easy task, nor will it happen overnight. Change requires considerable effort, resources and persistence. Since resistance is often person centered it is important to tailor the approach. The following four steps have been recommended as a starting point for overcoming resistance.[3]

1. Verify facts.
2. Challenge beliefs.
3. Acknowledge feeling.
4. Relate the change to people's values.

Within each of the six causes of resistance, efforts should be made to relate these steps to each cause.

Changing Curricula

The excellence of the U.S. higher education system in a great part is due to the academic freedom which faculty have in order to continuously revitalize their courses. The tremendous autonomy in what is done in the classroom and a deep loyalty and sense of responsibility to education are factors which make it hard to lead a large scale effort to change curricula. Many faculty will react negatively to too much 'buy in' from the top administrators at the institution. What they observe other professionals in their specific field doing will have more influence than what top administrators may suggest.

This combination leaves those who would be change agents in a very complicated situation. They need to have the leadership from the top completely support the efforts, but not be too visibly involved. They must convince numerous teams of faculty from fairly independent units that the changes are beneficial to the mission of each unit. They must convince every faculty member as a completely autonomous and independent unit, that the changes being asked for in courses and/ or curricula are desirable.

It is also important to recognize that in the very center of curricula change are the students. Many in higher education have discussed whether students are customers of the curricula or not. The difficulty lies in the experience that we often need to educate the student to understand what they should want. Put another way, higher education may be one of the few places where the customer originally wants to get the least amount of service possible, in view of the fact that the actual experience of education will take people out of comfort zones. Helms and Key [5] have pointed out that it may be more appropriate to consider students to be a level of employee, more than a customer in our model. This seems appropriate to us since the students must be involved in the education process for it to have any success.

There are many other potential customers to a curricula. The final one we will mention is the prospective employer of our graduates. These are the people who have supplied much of the motivation for why curricula should be changed. They call for change because their organizations have changed. They often cannot understand the slow rate of change in higher education. Therefore, they can quickly become an unsatisfied customer.

The Foundation Coalition Curricula Changes

This paper will not detail the curricula changes being developed by the Foundation Coalition, FC. There are seven institutions involved in the FC, and each has unique attributes to the course and curricula modification they are developing. On the other hand all of the institutions have four primary thrusts for change. The four thrusts for change are: 1) to integrate in cross-disciplinary ways the courses and material the students study, 2) to create more team skills in a cooperative learning, 3) to utilize high level technology in the learning, and 4) to invest in developing the tools and expertise so that faculty are better prepared to assess and evaluate the quality of the performance of the students and of their own course.

To facilitate these changes techniques and tools from both TQM and OD are utilized. This process is difficult to describe in detail, even with more time and space than this paper allows. The matrix shown below has entries which represent actions by the agent named to the far left upon or for the agent named at the top of the column. Each of these entries represents a place for both TQM and OD tools to be used.

The FC has utilized teaming approaches, which are found in both TQM and OD, in all levels of its development and management. These teams function across administrative levels, departments, colleges and universities. Every institution and team in the FC has participated in the development of an assessment and evaluation plan [6] which contains much of the philosophy and techniques found in TQM. The entire FC has also developed an institutionalization plan [7] which depends heavily upon techniques for managing change found in OD. We are convinced that it is in the combination of one set of tools for assessing and managing the quality of changes, and another set of tools to manage behavioral change, that we will be the most successful in achieving significant curricula changes.

References

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BY\TO	Students/Family	Faculty	Administration	Industry/Employers
Students/Family	A. Recruit & Mentor B. Acad. Excellence	A. Display skills B. Provide feedback	A. Illustrate leadership B. Provide feedback	A. Display Skills B. Job performance
Faculty	A. Explain skill value B. Validate performance	A. Costs & Materials B. Workshops C. Recognition	A. Resource costs B. Documentation C. Evaluation tools	A. Promote students B. Observe Classes
Administration	A. Smooth articulation B. Efficient programs	A.Tenure/Promotion B. Resources C. Recognition	A. Change management ideas and support	A. Information on educational process
Ind./Empl.	A. Intern/Coop/Jobs B. Scholarships C. Recognition	A. Recognition B. Training/Interns C. Class interaction	A.Financial support B. Public support	A. Information