

# Using TQM for Retention Enhancement

Roger Baur and George Kreps

## ABSTRACT

"Using TQM for Retention Enhancement", reviews the use of Total Quality Management (TQM) in higher education. It lists TQM techniques used at Oregon State University to implement quality improvement. It then describes the application of these techniques to the study of student retention at Ohio State University Agricultural Technical Institute. After listing recommendations to improve retention, the authors share their observations on the process.

## INTRODUCTION

Education faces challenges similar to those in manufacturing, retail, and service industries. The business pages of our newspapers remind us of these challenges. There are articles about downsizing, restructuring, early retirements, just-in-time, quality circles and Total Quality Management (TQM).

The demographic changes reflected in the age, marital status, and races of people attending colleges today are persuading higher education to provide more and varied services. Changes in the types of jobs and the need for more post high school training place increased demands on the colleges, while public funding is at static or decreased levels. Collectively, these changes compel colleges to find more efficient ways to serve people with a given resource base.

Two-year colleges have been in the vanguard in adapting to changes in society and TQM can be an effective tool to meet these challenges. Total Quality Management offers both a process and a system to produce dynamic changes in the organization and operations of two-year colleges in academics, service, and administration.

## REVIEW OF TQM IN EDUCATION

William E. Hull (1992: 225-240) gives this description of the situation facing colleges and a method to successfully meet these changes. "Academic life in America today exists in a world

with too many schools and too few students, too many fixed costs and too few discretionary dollars, too many competitors and too few supporters. In such a world, survival does belong to the fittest, which will be those institutions imbued with a passion for quality that extends to every member of the community, faculty included. Some may prefer a more sedate, less demanding academic lifestyle, but this will not longer fill our buildings, and pay our salaries. Accepting a quality quest means, first and foremost, a willingness - yea, an eagerness! - to be truly competitive in the educational arena." TQM is a way for our colleges to continue their quest for quality service in spite of increased demands for service and static funding sources.

Jablonski (1992:21) defines Total Quality Management as "a cooperative form of doing business that relies on the talents and capabilities of both labor and management to continually improve quality and productivity using teams."

Edwin Coate (1992:27-28) says that Total Quality Management is a combination of quality control theory, systems, tools, and organizational models developed over the last twenty years both in the United States and Japan by W. Edwards Deming, J.M. Juran, Phillip Crosby, and others. TQM is a structured system for creating organization-wide participation in planning and implementing a continuous improvement process. That process should produce results that exceed the expectations of the customer. TQM is built on the assumption that 90 percent of problems are process problems, not employee problems.

TQM is an empowerment process where ideas of all members of the campus community are valued; teams of affected individuals address problems, propose solutions; and decision-making is delegated to those most clearly associated with everyday processes. TQM guarantees that an organization will listen to its customers, identify customer needs, and incorporate those needs into every phase of its operations.

## TQM TECHNIQUES

Coate (1991: 27-39) divides the Total Quality Management process into two parts. First is a seven-step TQM Strategic Planning phase, and the second is the TQM Team Process. Phase Two is a ten-step process used by each team as it studies problems and implements solutions.

TQM Strategic Planning Process

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Baur and Kreps are Associate Professors, Arts, Science and Business Division, Agricultural Tech Institute, 1328 Dover Rd. Wooster OH 44691.

E-mail; baur.1@osu.edu or kreps.1@osu.edu

- \* Review strategic plan.
- \* Review unit, division, department mission, goals, etc.
- \* Identify all customers ( surveys, etc.).
- \* Identify unit vision and breakthrough items (or super goals).
- \* Identify critical processes for unit, division, department, and discuss evaluation criteria.
- \* Train team leaders, facilitators.
- \* Form teams around each critical process.

#### TQM Team Process

- \* Interview customers.
- \* Select and develop performance measures.
- \* Diagram the process.
- \* Diagram causes & effects.
- \* Collect and analyze data on causes.
- \* Develop solutions.
- \* Benchmark
- \* Select and carry out solutions. (Plan - Act - Do - Check.)
- \* Measure results and refine measures.
- \* Team selects the next issue.

### APPLICATION OF TQM TECHNIQUES TO STUDENT RETENTION

The Ohio State University Agricultural Technical Institute (OSU/ATI) formed a team using TQM techniques to examine student retention and make recommendations to improve it. The team adapted a ten step approach from Oregon State University and Goodyear to study the problem and prepared a report for OSU/ATI's Director. The ten steps are:

#### 1. Select Project

OSU/ATI's Director selected the project with the goal of improving retention. The team was asked to submit a report in nine months.

#### 2. Form Team

The Retention Team was selected from a group of faculty and staff who expressed a willingness to serve. The Director appointed the team.

#### 3. Develop Purpose Statement

The objectives were:

Define how to measure retention, evaluate OSU/ATI's current retention, and identify ways to improve retention.

Create faculty and staff ownership of critical retention activities so they will be willing to actively participate in them.

Use total quality management techniques as a process to achieve these goals.

#### 4. Assess Current situation

Focus groups, interviews, and surveys were used to assess the current situation.

#### Focus Groups

##### Current Student Focus Groups

Ms. Kreps (wife of one of the authors) conducted two focus groups (a group interview technique) with 20 current students as a part of an ongoing project. Several questions were asked about retention. The information received from these focus groups collaborated information received from other sources.

##### Non-Graduate Focus Groups

One hundred twenty-three non-graduates in the Autumn 1991 cohort living within 30 miles of Wooster were invited to a focus group. Only three students attended so the data was not used.

#### Faculty/Staff Interviews

Interviews were conducted with seventy-one (71) ATI faculty/staff. The questions centered on three themes: (1) Is there a retention problem at ATI? (2) What efforts are being made to increase retention?; and (3) What additional efforts should be made to elevate retention?. Responses were categorized and tabulated.

#### Surveys

A survey instrument was developed by the ATI Retention Team. The survey had three major sections: (1) Why students leave ATI without graduation; (2) Evaluation of services provided by the Institute; and (3) Several open-ended questions asking for recommendations. The first two

sections had frequency and ranking components.

The frequency component of section one asked the respondents to check any of the 31 reasons that students might leave college without graduating. More than one reason could be checked. These reasons were categorized into three areas: (1) academic; (2) financial; and (3) other. This component was analyzed by counting the number of respondents who checked a particular reason. Counts were arrayed in descending order by using the sort function of a spreadsheet program.

The ranking component asked the respondents to indicate which of the 31 reasons was the most important for students leaving without graduating, which was second most important, and which was the third most important. A weighted, composite score was calculated by accumulatively multiplying the number of respondents indicating a reason was most important by a weight of three, the second most important by a factor of two, and the third most important by a factor of one. The composite scores were then ranked in descending order using the sort function of a spreadsheet program.

The second section of the survey dealt with services. The frequency component asked the respondents to indicate for each service listed whether they:

1. Did not know about the service?
2. Knew about the service but did not use it.
3. Used the service and were satisfied with it.
4. Used the service and were not satisfied

The number of respondents checking each choice was tabulated using the count function of a spreadsheet program.

The ranking component of section two asked the respondents to indicate which service they were most satisfied with, and which service they were most dissatisfied with (least satisfied). Using the sort function of a spreadsheet program, the services were ranked in descending order based on the number of people who indicated the service with which they were most dissatisfied.

#### Faculty/Staff Survey

One hundred and two faculty/staff members were asked to answer the section of the survey dealing with reasons students leave before graduating. Thirty-four (33%) faculty/staff returned the survey.

#### Graduate Survey

The survey was given to 50 graduating students during graduation practice (100%).

#### Non-Graduate Survey

Surveys were mailed to 559 non-graduates from 1987 to 1992 cohorts. Sixty-one of the former students returned the survey. The low response rate (11%) was due in part to an out-of-date mailing list.

#### 5. Analyze Data

### Reasons Students Leave Without Graduating

#### Faculty/Staff Interviews

The following table gives the number of faculty/staff (out of 71) who said during an interview that these were reasons students left college before graduating:

<u>Reason</u>	<u>Number</u>	<u>Percent</u>
Personal	48	68
Financial	42	59
Academic Performance	26	44
Academic Preparation	24	34
Racial and Gender Issues	22	31
Jobs	17	24
Programmatic (Majors)	13	18
Transitional Issues	12	17
Family	10	14
Advising	4	6
Scheduling/Registration	3	6
Housing	2	3

#### Faculty/Staff Surveys

The top five reasons faculty/staff gave for student not graduating are given in Table 1. There is a clear top (lack of money), a middle pair (personal problems and academic performance), and bottom pair (academically under prepared and program/courses do not meet expectations).

#### Graduate Survey

A summary of the reasons that graduates gave for their classmates not graduating are given in column two of Table 1. It is seen that the composite score for the lack of money is about twice the score for the next most important item.

#### Non-Graduate Survey

Column three of Table 1 shows that the students who left without graduating also cite the lack of money as the most important reason for not completing their education.

Table 1. Three Survey Groups: Top Five Reasons for Student Attrition - Weighted Composite Score in Rank Order.

FACULTY & STAFF		GRADUATE		NON-GRADUATES	
Lack of Money	61	Lack of Money	43	Lack of Money	32
Personal Problems	28	Dissatisfied with Academic Performance	23	Personal Problems	27
Dissatisfied with Academic Performance	24	Transferred Out	22	Job/Military	24
Academically Under-Prepared	11	Job-Military	18	Dissatisfied with Academic Performance	23
Program/Courses Did Not Meet Expectations	10	Credits Will Not Transfer	16	Program/Courses Did Not Meet Expectations	21

**Summary**

All three survey groups cite the lack of money as the number one reason for students leaving without graduating, but those who actually left ranked it lower than the other two groups. Dissatisfaction with academic performance is the most consistent reason across the three groups.

**Evaluation of Services**

Table 2 shows that academic advising is the service that both graduate and non-graduates are most dissatisfied with, followed by other business related services.

**6. Develop Recommendations**

Based on the results, the OSU/ATI retention team suggested to the Director the following steps be followed to increase retention.

**Increased Financial Assistance**

- \* Commit annual operating budget dollars to offer need-based tuition grants to students.
- \* Seek outside funds for need-based grants.
- \* Create more on-campus jobs for students.

**Improve Academic Advising**

- \* The administration should stress the importance of advising and reward it appropriately.
- \* A comprehensive job description of the advising function should be developed and the advisor held accountable to it.
- \* Advisor training needs to be provided regularly.
- \* An advising manual needs to be developed.

**Become Customer Orientated**

- \* Continuously consult students to assess their satisfaction with services and receive suggestions for improvement.
- \* Periodically survey employers to determine their satisfaction with the skills of the graduates.

**Increase Institutional Pride**

Developing institutional pride encompasses all aspects and members of the college environment. It is

Table 2. Services Most Dissatisfied With. Ranked by Percent of All Respondents Indicating Dissatisfaction.

GRADUATES		NON-GRADUATES	
Academic Advising	34%	Academic Advising	26%
Bookstore	17%	Registration/Scheduling	14%
Registration/Scheduling	7%	Business Office/Fee payment	12%
Admissions	7%	Admissions	10%
Business Office/Fee Payment	7%	Financial Aid	7%

important that the “bonding” process between the student and institution begins with student recruitment and continue through graduation.

- \* Recruitment
  - a. Recruit “potential graduates” rather than “new students.”
  - b. Assess current recruitment activities and procedures for effectiveness.
  - c. Expand orientation activities throughout the quarter and/or academic year.
- \* Pre-Enrollment
  - Increase the number of contacts with the student between admission and the beginning of classes.
- \* Post-Enrollment
  - a. Initiate a peer-to-peer tutoring program to increase the bonding process with OSU/ATI.
  - b. Initiate a Parents’ Weekend at OSU/ATI.

#### **Increase Accessibility of Services**

- \* Assess the availability of needed services from a student perspective. Increase the visibility and availability of current services where needed.
- \* Increase faculty and staff awareness for early intervention and appropriate referral of students through campus workshops.

#### **Collect and Analyze Retention Data**

- \* Designate a person at OSU/ATI to collect and analyze retention data.

#### **Appoint an Implementation Team**

- \* An implementation team consisting of faculty and staff coordinated by a team leader.

#### **7. Summarize Results**

- \* Retention team activities made the faculty and staff aware of the importance of improving retention.
- \* The retention rate is increasing one to two percent per year.
- \* The retention effort has encouraged three other team efforts: The first is to improve academic advising; the second is to improve student related data collection, and the third is to organize a first-ever parents’ weekend on campus.

#### **8. Standardize Procedures**

- \* Standard procedures for team selection, training, and operation have been developed and implemented.
- \* Retention news articles are included in the Director’s Notes regularly.
- \* Data collection procedures have been defined

#### **9. Discover Remaining Issues**

- \* Broaden faculty/staff support for increasing student retention.
- \* Secure additional budget support for starting projects to improve retention.

#### **10. Formulate Lessons Learned**

The authors make these observations:

- \* Do not impose strict deadlines on the process. The unrealistic deadline imposed on this team caused them to prematurely focus on the ends rather than the process.
- \* Place major weight on what the customer says. Faculty peers faulted the team for putting too much emphasis on results from the faculty and graduates and not enough on the opinions of non-graduates.
- \* TQM instruction should be better integrated into the team process. The lack of training time on TQM process (six hours actual vs. 21 hours recommended) left the training process incomplete.
- \* The retention of students is a complex and involved process that includes the various areas of admissions, financial aids, advising, instruction, and student services. Close cooperation between these units is important if the findings are to be successfully implemented over an extended time.

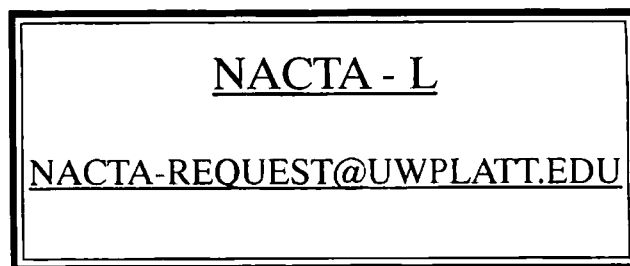
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## APPENDIX: TQM RESOURCES

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# Nursery Industry Perceptions of Horticultural Needs for Beginning Managers

Matt Baker and Peggy McLaughlin

## Abstract

As the costs associated with higher education continue to increase in a period of shrinking state budgets, and public universities and colleges experience the paradigm shift from being state supported to state assisted, the need to involve the public sector in curricular reform efforts will escalate. This study explored the perceptions of nursery industry representatives regarding basic knowledge areas necessary for beginning managerial employees. The findings of the study revealed that the industry expects beginning managers to be knowledgeable of a variety of horticulturally-related areas. The most essential knowledge areas included plant knowledge (identification, cultural requirements, soil/fertilizer relationships, and pesticide formulation). In addition, the industry anticipates that beginning managers be knowledgeable of local, state, and federal regulations and laws. As a result of this study, the researchers recommended that prior to curricular modification, other stakeholders, including students and faculty be studied in order to determine if similarities in stakeholders' perceptions exist.

## Introduction

As a result of a historic educational summit by the President and state governors held in Charlottesville, North Carolina in the Autumn of 1989, clear national performance goals were established (The Office of the President, 1990). These national educational goals were developed in an effort to make the U.S. more competitive in an international marketplace. This same report indicated that the initial step to improving the quality of higher education in the US

involves the establishment of a public-private partnership. Certainly such a partnership is not possible without substantial industry input into curricular decisions.

In a report by the National Research Council (1992), H.O. Kunkel of Texas A&M University stated the following regarding industry and academia:

Businesses are finding it increasingly difficult to employ, retain, and reward people to compete in a technology-driven world economy. Recruitment of students and continuing education are needed, and industry has a role and responsibility in both areas. Industry-academic linkages should be fostered and seen on campus. Colleges of Agriculture should give attention to the executive potential in students and graduates and should help them to obtain "combat" experience in business, such as through internships (p.5).

Prior to substantial curricular modifications in higher education, a divergent phase of data collection from stakeholders (students, industry, and faculty) is essential (Merritt & Hamm, 1994). Although higher education has been criticized for the absence of industry input in the decision making process (Long, Straquadine, & Campbell, 1992), such input is especially important in the horticultural sciences due to rapid advances being made in technology.

Determining what should be included in the higher education curriculum is extremely important in the nursery industry due to the immediate employment implications for students. Students enrolled in programs of higher education need reassurance that the skills and abilities they learn will be meaningful to their future employment goals. In addition, the nursery industry needs reassurance that what is taught in higher education is consistent with "real world" needs.

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Baker is an assistant professor in the Dept. of Agricultural Educ. & Communication, Univ. of Florida, Gainesville, FL 32611. McLaughlin is acting dean in the College of Agriculture, California State Polytechnic University, Pomona, CA 91768.