TQM in the Classroom

A Socialogical Examination of Three Techniques for Improving Classroom Effectiveness in a Two-year Agricultural Institute

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Abstract

The purpose of this article is to examine three TQM techniques for increasing classroom teaching effectiveness.

Charles S. Green describes "good pedagogy" in teaching sociology in his article, "Hubris in Teaching Sociology," *Changes, The Magazine of Higher Learning*, November - December 1993, pp. 36-37. "What is good pedagogy? Good pedagogy means getting students involved in active and preferably collaborative efforts with one another and with the instructor to 1) analyze data of various kinds to learn how sociological concepts are created inductively and 2) use sociological concepts to analyze various social issues and problems. Of course such a pedagogy is easier to describe in the abstract than in the classroom."

The author's results suggest that total quality management techniques can be used in the classroom by faculty to improve communication between the instructor and the students. Three techniques currently being used in OSU/ATI classrooms will be examined. These TQM techniques are lecture evaluation forms, student journals, and the use of student teams to assist the instructor.

What is TQM in higher education? Daniel Seymour suggests nine hurdles in the implementation of quality management practices in higher education in *Total Quality Management in Higher Education: Clearing the Hurdles* (1993). Three of these hurdles focus on the problems of using TQM in the classroom.

The first hurdle is "People are already so overloaded that they cannot contemplate taking on additional time commitment and responsibilities of quality management." Seymour's survey indicates that this hurdle can be overcome by admitting that quality management procedures do take time to learn but that specific results can show that the investment of time will show good results.

The second hurdle is "This whole approach continues to be seen by many as something that may work for janitorial and housing staffs, but the academic applications are limited—professors just don't buy it." Seymour's surveys of 21 colleges indicates that an effective strategy to this hurdle is to concentrate on finding ways to apply quality management in classrooms . . . with research projects being devised to evaluate and improve classroom teaching.

The third hurdle is "It has been difficult to overcome many people's perception that this is just another fad that will dry up and blow away." He indicates that one effective strategy has been to select projects that can produce hard data so that results can be monitored and communicated. The initial project proposals should be weighed based upon the probability that they will generate successful results.

Seymour's study of the hurdles and the responses generated to them from his study at 21 higher education institutions suggest that the use of total quality methods in the classroom will enable faculty to apply quality practices at their own initiative and to observe the results in their classrooms. This approach will help faculty evaluate the effectiveness of TQM on their own and apply its practices directly to their teaching.

Total quality management has been utilized by some colleges and universities. While they are three to four years behind the TQM movement in hospitals, colleges and universities are beginning to attempt its implementation. Sherr and Teeter, *Total Quality Management in Higher Education*, (1991:95) list 25 institutions. Lewis and Smith, *Total Quality in Higher Education*, (1994) list over 200 institutions of higher education involved in total quality which suggest rapid increasing activity.

Bateman and Roberts (October 1992) indicate more colleges are considering TQM due in part to the efforts of companies like IBM, Milliken, Motorola, Procter and Gamble, and Xerox. Many colleges are moving to apply TQM not only to college governance, but to central academic functions with special emphasis on teaching and research particularly in schools of Engineering and Business.

William Hull in *Quality Quest in the Academic Process* makes this case for the use of total quality management in higher education. "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

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the community, faculty included. Some may prefer a more sedate, less demanding academic lifestyle, but this will no longer fill our classrooms, build 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" (1992:227).

He says that total quality management is becoming an effective paradigm change for the administration of institutions of higher education as they continue their quest for quality service in the last decade of the twentieth century.

To provide focus for this discussion, Lewis and Smith's (1994) definition of total quality management is used tp define TQM. **"Total quality management is the application of quality principles for the integration of all functions and processes of the organization. The ultimate goal is customer satisfaction. The way to achieve it is through continuous improvement."**

Bateman and Roberts, "TQM for Professors and Students" (1992), give this working assumption of TQM in that continual organizational improvement, small and large, is always possible and is necessary for long-term survival. Opportunities for improvement are recognized primarily by continuing reexamination of all existing constraints on the way that work is done. This reexamination is focused on all university organizational processes, and it is guided by three basic ideas.

1. Orient all efforts towards delighting the customers and removing waste in internal processes.
2. Stress team effort at all levels inside and outside the organization, including cooperative efforts with suppliers and customers.
3. Use data and scientific reasoning to guide and evaluate improvement efforts and to hold the gains from past improvements.

However, no matter how effective total quality management may prove to higher education to balance the budget, repair and improve buildings, and streamline operations, faculty still need to be convinced that it will be useful to them in the classroom.

Bateman and Roberts in "*TQM For Professors and Students*" (1992) provide specific examples on the advantages and rewards to faculty of using quality procedures in the classroom. Their examples are used in making the case for adoption of total quality practices in the classroom. They quote Bob Galvin, former CEO of Motorola, as he challenged professors at the Xerox Quality Forum of 1989 to include TQM in their classroom and in their research.

"What do you give up? I wonder if it's fair to ask of you, as we in industry have been obliged to ask ourselves, 'How efficient are you?' Why can't you teach 50 percent more in a year than you're now teaching? Not one percent. It's this big step—function phenomenon. Why can't you in two or three years change your curricula? You've got to do this right now, not in the time your children become teachers. Decide that you're going to do all these things in two or three years, and do it. That is what we in industry are having to do to serve our customers. For example, suppose that we have a factory of a certain size. We may be getting three or four times the output from this factory today than we were getting seven years ago. Seven years ago, we had 100 people, now we have 70. I think that's got to happen in education. Educators, the agents of change, can't be content to pump out the same syllabus this year that they pumped out in 1942. How do you do it? I don't know. That's not my business. But I do know that for our business, we have to accept the challenge. You have to have the mind set that it can be accomplished. Once you start looking for the solution, you'll come close. Maybe you'll only improve it 40 percent instead of 50, but you can put out a lot more information."

Bateman and Roberts highlight four key points in sustaining their thesis that faculty can successfully use TQM efforts in the classroom.

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 we shall contend that in some important respects, students play the role of customers.
4. The TQM movement has already led some professors to begin to think of students as customers.

They continue by saying that view of the student as a customer needs careful

qualification . . . The traditional paternalistic view has often encouraged the belief that whatever is being taught is best for the students, even if they don't recognize it at the time. When some students perform poorly, professors tend to blame it on the students' lack of interest or preparation or both.

By contrast, they say, the idea of student as customer tends to cause the professor to take more of the responsibility for success of teaching and to become more interested in methods to improve teaching. They testify from personal experience that teaching looks very differently when one thinks of students as customers. Professors begin to try to figure out *why* students perform poorly or react badly, and *what* can be done about it. They began to think about getting relevant data (1992:7).

In March 1991, on the suggestion of an MBA student, they developed the Chicago "laboratory course" format to help faculty members to apply TQM tools to improve their teaching, curriculum development and research. In its original format it was a new product laboratory in which teams of students worked with client companies to develop and implement ideas for new products. The format has been extended to other kinds of applications, *such as implementation of TQM in the classroom.*

This was the background to the formation of *Business 712, the Laboratory to Achieve Organizational Excellence: Improvement of Teaching, Curriculum, and Research* (Teaching Lab for short). In the Teaching Lab, the clients are faculty members. Here are some of the Lab's activities after six quarters of operations.

- Eleven faculty members have worked with lab course students or student teams on the improvement of ongoing courses.
- A team of five students worked with the Behavioral Science Group as a unit on the design of a new required course in behavioral science.
- One student in the Lab has bench marked the performance of two of the school's most outstanding case teachers.
- Two Lab students have explored the feasibility and desirability of making entrepreneurship a field of study in the school and have made positive recommendations to the dean.
- Ten additional faculty members have indicated a desire to use the Lab. The Lab provides a feedback mechanism that tells the instructor continually and quickly what is *not* working so that appropriate adjustments can be made.

Three Techniques Examined

Feedback questionnaires in the classroom

It is described by Bateman and Roberts at the University of Chicago, by Edwin Coate at Oregon State University (1992), by Susanna Staas at Delaware County Community College (1992) and by the author at Ohio State's Wooster Campus (1993-1994).

The feedback questionnaire used by Bateman and Roberts is simple to use and provides fast feedback. Questions can vary depending on the instructor's particular interest. The author has used the Bateman and Roberts questions and found that students respond well. These questions include:

- Overall, how much did you get out of today's class?
  ___ Little or Nothing
  ___ A Fair Amount
  ___ A Great Deal
- What was the most important thing you learned?
- What was the muddiest point?
- What single change by the instructor would have most improved this class?
- Please comment briefly on the helpfulness of the advance reading assignments for today's class.
- Your preparation for today's class:
- Overall how much did you get out of your preparation for today's class?
  ___ Little or Nothing
  ___ A Fair Amount
  ___ A Great Deal
- What one thing can *the instructor do* to help you to improve your future class preparations?

The questions are limited to one side of a page and the students are given five minutes at the end of the class session to complete the questionnaire. Students are asked not to put their names on the questionnaire in order to encourage more open responses. The instructor collects them, reads them, and provides feedback at the beginning of the next class session. The author has found that students take a great deal of interest in this feedback from the instructor. It enables the instructor to review points that were "muddy," to clear up questions on assignments, and to go into more depth on certain key points.

Delaware County Community College faculty report use of a similar feedback tool which indicates two additional benefits. One, is that student writing skills improve appreciably by the end of the course. Two, data is being compiled across sections of the same class and over time in the hope of establishing patterns of effectiveness.

The author has used this feedback tool in his classes during the past two years and has found them to be effective in improving the communication between the instructor and the students. Feedback has provided the means to use TQM techniques to illustrate sociological topics.

Student Journals as Feedback

Two colleagues, Allen Zimmerman and Linda Houston, faculty at the Wooster Campus of The Ohio State University, have been successful in using students journals to stimulate writing across the curriculum (NACTA 1993:29-32).

They describe "journal writing" in this context as expressive or free writing with the purpose of finding out what the writer thinks, feels and knows. As such it is characterized as informal, writer-based, exploratory, digressive, searching, speculative, resembling speech (talky) and uncorrected. It can be compared to a diary which is private and personal and a course notebook which is a record of public thoughts and presentations.

During the first class meeting, the instructor describes the purpose of the journal. Students are asked to divide their responses in two categories. One is to write about assigned topics given in class and the other is to write about out-of-class topics of their own choice. The in-class topics help the students to summarize and personalize the concepts and principals presented during the class. The out-of-class topics allow the students to individualize their journals according to their needs and interests.

The instructor reads the student journals after each class and returns them with comments at the next session. The journals can be graded or not depending on the instructor. Grades, when given, are based on the number of entries and the degree to which students have followed instructions. The instructor does not read the personal part of the students's journal as they are not required to share that with the instructor.

Zimmerman and Houston report three advantages to the use of journals. First, the level of written expression by the students increase significantly by the end of the course. Second, the students find they actually enjoy expressing their feelings and observations. Third, it gives the instructors an opportunity for immediate feedback about assignments, texts,

tests, and quizzes and they can make any necessary adjustments. It encourages students to continue to write after they have completed the courses.

Student Teams in the Classroom

Coate in "*Total Quality Management at Oregon State University*" (1992:22) reports on the use of a TQM Team Approach in the classroom. He reports that a professor asked students in one class to form a TQM team to help him improve his teaching. Six students with a student facilitator who had worked as a quality manager in industry, took on the challenge.

Increased student satisfaction and an increase in teacher effectiveness and efficiency in presenting data were observed. The team surveyed the class regularly, assessing student satisfaction with lectures, teaching materials, etc.. They had baseline data from evaluation sheets used in previous terms. During their weekly meetings, team members analyzed the data and developed solutions to problems the students identified.

The professor said, "The team process helps me understand the students and what they need. And it changes the classroom from an atmosphere of confrontation to one of teamwork . . . Even more important is the value to the students. His goal is that every engineering student coming out of OSU would have had hands-on experience with TQM."

Kathy Baugher of Samford University, Birmingham, Alabama, has developed a "*Student Quality Team Manual*" (1992). She calls her program "LEARN."

"LEARN" is the acronym for this specific teaching and learning improvement process. It stands for:

Locate an opportunity for improvement.

Establish a team to work on the process dy defining team roles and setting ground rules.

Assess the current process using checklist and surveys to determine the issues of this particular class.

Research causes of this issues by utilizing cause and effect diagrams.

Nominate and improvement and enter the PDSA cycle (Plan, Do, Study, Act).

Her mini-case study on improvements in an introductory statistics class illustrates how they used student quality teams to improve teaching and learning.

She indicates that student quality teams are an effective way to overcome the limitations of evaluations given at the end of each course. Under that system, students move on to the next course without receiving any benefit from their suggestions and faculty do not have an opportunity to respond to the specified problem areas. Using the LEARN program the students and the instructor were able to identify problems, included the class in the decision-making process, and as a result, fine-tuned the course to those concerns. The results of this specific application of the LEARN program to the statistics course were: (1) study sessions before the exams, (2) more take-home quizzes, (3) study outlines on the board, (4) no new material on the day before the exam, (5) warmer room temperature, (6) index card for final examination, and (7) faculty awareness problems with laboratory equipment and with the lab assistants.

The previous discussion suggests there are simple effective ways to increase the effectiveness of the instructor in the classroom. The lecture evaluation form enables the instructor to get feedback from each class session on the student's understanding and comprehension of the material, the quizzes, outside reading assignments and text material. The student journal enables the instructor to receive periodic feedback in the student's own words concerning lectures, assignments, readings, quizzes and projects. The use of teams provides the instructor with suggested solutions to improve communication in the class rather than waiting until the end of the course as is the case in using the standard evaluation form. These three techniques also serve to increase faculty awareness of usefulness of total quality management techniques to improve teaching effectiveness.

Summary and Conclusions

1. These three techniques can increase the effectiveness of instruction in the classroom.
2. They do not require extensive use of new materials and procedures.
3. They increase the participation of the students in the assimilation of course material.
4. They provide opportunities for the instructor to use total quality tools such as: surveys, questionnaires, team building, and journal writing in the classroom.
5. They can be used to illustrate and provide useful student experiences about certain sociological concepts such as: primary groups, leadership styles, research design, and data analysis.
6. They suggest several ways to overcome three of Seymour's hurdles to implement total quality management in higher education by providing the instructor with specific tools.
7. They provide teaching opportunities for the instructor to demonstrate connections between sociological practices and total quality management practices in institutions.

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BOOK REVIEWS

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Gail L. Cramer and Clarence W. Jensen. *Agricultural Economics and Agribusiness*, sixth edition. John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158, 1994. 534 pp. Illustrated. Hardbound $62.95.

Basic micro- and macroeconomic principles are introduced to the student as they apply to the agricultural sector. This text takes a very traditional approach in presenting the material to the student, with economic theory being introduced as a way of simplifying real-world problems. The simplicity does not end with the approach taken by the authors. The sixth edition is merely a repackaging of earlier editions with only the minimum required changes being made. The greatest change, noted by this reviewer was a $2.00 reduction in price compared to the fifth edition.

As with the previous editions the book contains seventeen chapters, a list of reference books for the beginning student that has changed little since the first edition was published in 1979. This is followed by an expanded listing of basic sources of agricultural statistics, a standard glossary of economic terms, and an index. In addition to the main body of material in each chapter, there are a varying number of supporting divisions. These consist of a summary, chapter highlights that include of a series of one-sentence statements of facts and statistics, a listing of key terms and concepts the student should remember, review questions, and suggested readings. Closing out each chapter is a biographical profile of an economist who has made an outstanding contribution to the profession.

The first two chapters provide an excellent introduction and a discussion of economics as a social science and the structure and organization of the agricultural industry. Consumer behavior and demand are the subject of Chapter 3 where the concepts of utility and consumer choice are explored. Chapters 4 and 5 addresses producer decision making within the context of single and two-variable input functions as well as product-product relationships in enterprise selection.

Production costs identification, market supply, and price determination is presented in Chapter 6. Marketing is further explored in Chapters 7 and 8 where the market classifications from pure competition to monopoly are examined. These chapters also discuss the role played by government in regulating these markets as well as the attempts by agricultural producers to gain market power through various bargaining associations.

Chapter 9 introduces macroeconomics and the linkages this division of economics has to agriculture. The authors, while focusing on the Keynesian school of thought, do briefly mention alternate view points. Agricultural finance is the subject of Chapter 10. The various credit and banking systems are contemplated within the context of their role and impact upon the agricultural sector. Policies related to agricultural prices and income programs are evaluated in Chapter 11. The development of policy to solve farm problems is explored through time and across countries. The marketing of agricultural commodities is presented in Chapter 12 where efficiency, marketing margins, and the futures market are among the subjects studied.

Problems and issues associated with the use and conservation of natural resources are presented in Chapter 13. Rural-urban disparities are examined and the expanded role played by rural development in offering solutions to the problems facing rural communities is the topic of Chapter 14. Agricultural systems in Russia and China are compared to the U. S. in Chapter 15. International economics, especially foreign trade and the effect of tariffs and quotas on the balance of trade are presented in Chapter 16. It is within these last two chapters that recent changes in U. S. policy and trade relations with other countries are updated over previous editions. Even these updates are not adequate to keeping pace with the dynamic nature of recent developments in this area. The final chapter (17) explores world population food needs and the supply of food. Potential production increases from traditional and alternate sources are examined from various view points, including the Malthusian.

The text does a better job than most books on this subject at explaining graphs to the uninitiated. However, instructors familiar with the fifth edition may notice that the graphs and tables are a little less clear due to changes in font intensity. Since the changes in the sixth edition over the fifth edition are minor, current users of the text should find the text still compatible with their course. New instructors who feel more comfortable with the traditional approach to agricultural economics will find this text quite adequate. Instructors searching for a text that is more organized, progressive, or stylized in its approach may find this text uninspiring.

This reviewer feels that a tutorial software package would make future editions of this text more attractive to students as well as instructors. Additional support materials available from the publisher include a Student's Study Guide and an Instructor's Manual. Although no computerized test bank is provided, the manual for the instructor does provide 15 true-false and 15 multiple-choice questions for each chapter.

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