

■ RICK HESSE, Feature Editor, Graziadio Graduate School of Business, Pepperdine University

People, Process and Projects: The Keys to Instructing Total Quality Management

Roger J. Gagnon and Janice Witt Smith,
Department of Business Administration, School of Business
and Economics, North Carolina A&T State University



Janice Witt Smith

is an assistant professor of business management in the Department of Business Administration, School of Business and Economics, at North Carolina A&T State University. Her primary research

interests are racialized and gendered work environments, differential work experiences of women and minorities, mentoring relationships, affective organizational commitment, institutional isolation and social isolation. Dr. Smith has published in the Strategic and Organizational Leadership Journal, Current Issues in Occupations, and Psychological Reports. She is a management consultant specializing in organizational development, team building, conflict resolution, and employee relations.

janices@nr.infi.net.



Roger Gagnon

is an associate professor of business management at the North Carolina A&T State University. He received his BS in engineering from Boston University, his MBA from Clark University, and his

Ph.D. in production/operations management from the University of Cincinnati. Prior to entering academia he worked for six years as plant industrial engineer in the steel industry. In 1985 he received the Instructional Innovation Award from the Decision Sciences Institute. His primary teaching and research interests lie in advanced technology assessment and justification, the strategy and design of productive systems, and the management of technology. His publications have appeared in Decision Sciences, The International Journal of Production Research, OMEGA, The European Journal of Operational Research, Computers & Industrial Engineering, and The International Journal of Technology Management, among others.

gagnonr@ncat.edu.

There is little doubt that business students should be well grounded in the concepts and benefits of Total Quality Management. However, this comprehensive philosophy has two faces—the technical side and the behavioral dimension. The *technical* portion includes process and job designs; the quality assessment of inputs, processes, and outputs; the statistical tools of TQM; benchmarking; and financial analysis of improvements. The *behavioral* side involves skills such as leadership; brainstorming; team and relationship building; the dynamics of change; employee selection, training, and appraisal; employee empowerment, involvement and participation; organizational design and restructuring; incentive system design; and effective communication. Too often only one side of TQM is instructed per course (e.g., operations, organizational behavior) without sufficiently considering its complementary element. To be effective leaders in the twenty-first century, students need comprehensive instruction in both the technical and behavioral TQM hemispheres and their necessary integration. Ideally, students should be taught both halves simultaneously in an integrative manner and should be exposed to a “real-world” quality management situation to cement the concepts. This may be done effectively in an elective Quality Management or Quality and Productivity course. But how best can business students comprehend these integrative concepts sufficiently for professional implementation when no such elective courses are available? Faced with this dilemma we explored another option.

The Cross-Course, Experiential TQM Project

We establish cross-course, student team projects in total quality management. Sections of our three-credit Production Management and Human Resource Management courses are paired by time offering and size. Two students from each course section form a TQM team. The students are “empowered” to choose their team members—*carefully*, since the project counts for 10% of their final grade in *each* course. To expedite this process each class is provided with rosters and telephone numbers of the students in its sister class. Each student team then chooses a productive process within the university to study. Examples of such processes include the operation of the university cafeteria, the student registration process and dormitory maintenance procedures. From the beginning of the semester students are given a total of two weeks to form their teams, three weeks to select their process for study (and obtain approval), four weeks to provide a preliminary report, and eight weeks (or one-half the semester) to prepare their final project report. Only half the semester is allowed to complete the project in order to encourage a quick start and continual work effort on the project.

The students are to determine the purpose(s) of their selected process, the process customers, their *real* needs, the outputs, the process resources, and inputs. The students must distinguish between what these elements currently *are* and what they *should be*. By measurement and/or customer survey the students determine the desired and actual quality levels of these (or additional) outputs, as well as the root causes for any discrepancies. The students

next analyze the process, its steps, and the responsibilities, decisions, and empowerment of its employees at each step. This leads to a list of improvements and alternative means for achieving them. After further analysis the students make specific recommendations for improvement—giving the changes needed, persons impacted, actions required, their estimated costs as well as the results predicted. Since implementation of process changes can be formidable, the students must provide their plan for implementation—listing the precedence order of actions to be taken, determination of which changes will be the most difficult to achieve, how changes are currently introduced into the system, and who the “change champions” will or could be. The students must also propose a continuous quality assessment and improvement system for their process. This is to teach students that the process must not undergo analysis and improvement only *once*, but must do so on an ongoing basis. Finally, each student team must complete a team introspection—a list of the activities completed by each student(s), the estimated time required, the team leaders, and what they have learned from this TQM project.

The two faculty members receive copies of the report which they first grade separately and then meet to discuss before determining a final grade.

Student Benefits

While the eight-week project is demanding of students' time, it provides students with lasting benefits:

- The student-selected project reinforces classroom instruction and student learning about both the technical and behavioral aspects of TQM by providing an integrative, experiential exercise—actually analyzing a real productive process.
- The project provides the students with the opportunity to study quality management from multiple levels—from the strategic mission analysis and planning level to the tactical measurement and implementation levels.
- The students gain experience with professional settings and a greater appreciation for the difficulties and time needed for planning and conducting real world activities.
- The students become more experienced in project management, brainstorming,

reengineering, and working in teams, so necessary for professional success.

- While there is some initial groping, students learn how to organize an open-ended, relatively unstructured assignment.
- The students obtain a deeper understanding and questioning of who the current process customers are, who they should be, and who they will be in the future; what customer quality is; its multidimensional nature, and how to measure it.
- The students practice process analysis by constructing flow process charts and block diagrams of a real productive process and decomposing it into its process steps.
- The students are challenged with not only developing ideas for process quality improvements but also the detailed plan to implement them.
- The students learn the need for and gain experience in developing a continuous monitoring and improvement process or system. This requires consideration of what should be measured, how, how often, by whom, to whom the results should be reported, the format, etc.

Students also learn about the realistic impediments to effective problem diagnosis, process improvement and project management. Forming cross-course student teams takes time and perseverance—more than they originally imagined. Effectively working in student teams requires scheduling and commitment. The teams realize that each member may not perceive or seek the same project quality or grade and this requires resolution. Process difficulties may have multiple sources or root causes. Agreement and cooperation by process employees towards process changes (even beneficial ones) are not automatic; they require careful planning, training, employee commitment, and rewards.

Faculty Challenges

Faculty are not without their own challenges in conducting this TQM project:

- Students enter our courses with different talents and different portfolios of prerequisite courses.
- Since at least 70% of the students hold full- or part-time jobs, this makes student and student/faculty meetings difficult.

- The morning classes typically consist of traditional students, while afternoon classes are heavily concentrated with non-traditional students.
- Faculty need to be accessible to students in *both* courses.
- Student withdrawals make it difficult to maintain the integrity of each student group.
- Some students try to reconfigure the cross-functional teams.
- Scheduling of the two courses to be compatible is necessary, but not within faculty control.

Future Improvements

Future enhancements we are considering for the TQM project concept include: requiring students to make class presentations of their projects at the halfway point and/or at its completion, allowing students to select projects off-campus, incorporating one member from the process under study to be a member or partner of the student team, and soliciting TQM projects from local companies for students to analyze.

Despite the challenges in implementing a cross-course, cross-functional TQM project, the students and faculty greatly benefited from its integrative approach encompassing both the technical and behavioral principles, and the practices and techniques of total quality management. ■

Dr. Rick Hesse

*Graziadio Graduate School of Business
Pepperdine University
email: rickhesse@aol.com*