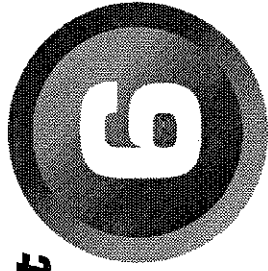


can comply—how they can move toward insider knowledge of life in the metal sculpture foundry.

Whether your class requires use of computer networks, map rooms, free exercise weights, preserved animal specimens, microscopes, observation rooms, language tapes, or collaborative groups, your syllabus should spell out the terms of student participation and the procedures through which appropriate participation can be achieved. As noted, these procedures are frequently dictated by others, and your syllabus will simply attach institutionally generated procedural statements. In other instances, you should write your own procedures or add to institutional boilerplate procedures to make them less mean spirited, less gratuitously authoritarian in tone. In either case, keep in mind that while the initial—perhaps even primary—impulse in writing procedures might be to protect institutional property or to reduce institutional liability, the final test is whether your statement of procedures achieves its institutional goal at the same time that it discloses to the students the terms of their own success in your course.

It would be foolish to ascribe to the syllabus for your course more significance than it deserves. A badly taught course with a great syllabus is still a badly taught course. A too-busy student who knows clearly and supportively what is required of her still lives in a world where there's always too much to do. Nonetheless, the syllabus sends a clear—albeit partial, albeit preliminary—message to our students and colleagues about our professional values and about our attitudes toward the students we teach. As a public document, it does indeed serve as a significant figure of our approach to our work.

Student Management Teams—The Heretic's Path to Teaching Success



Edward B. Nuhfer

Ed Nuhfer became interested in management teams before he began teaching. While serving as a research supervisor at the West Virginia Geological Survey he learned the value of informal discussions among everyone involved on a project: technicians and student workers through senior managers. When he began teaching geology he tried to incorporate the principles he learned, eventually incorporating the ideas of Tom Peters (*In Search of Excellence: Lessons from America's Best Run Companies*), William Glasser (*The Quality School*), and Edwards Deming (*Out of the Crisis* and other works). At the University of Wisconsin-Platteville he established a faculty development center. The center's first project was developing the idea of student management teams and assessing its efficacy.

Ed currently is Director of Teaching Effectiveness at the University of Colorado at Denver. He also teaches courses in geology—using student management teams—and does research in environmental geology and geology education. He is the only geologist in the nation to have received three presidential certificates of merit from the American Institute of Professional Geologists; he has also received the AIPG John T. Galey, Sr., Public Service Award for his work in university education. His E-mail address is <enuhfer@carbon.cudenver.edu>.

■ Successful Teaching and Successful Management

Teaching success is not insured by mastery of our content area; doing that extra research paper probably will not translate into better teaching—heresy! Our teaching success is not insured by a knowledge of pedagogical theory—more heresy! Subject mastery is essential and knowledge of pedagogy is of great value, but sorry, folks—we can have lots of both and still get eaten alive in the classroom. If the key to becoming an outstanding teacher really were mastering a content area and passing graduate-level courses in educational psychology, learning theory and teaching methodology, then the student ratings of faculty in the education colleges at every university would consistently excel those of faculty in other colleges, but such is not the case—heresy and blasphemy!

If you have already found a statement to hate in this chapter, let me provide comfort in a promise to behave myself—after this paragraph. My heretical tendencies on the issue of teaching improvement began when I noted academia's fascination with a form of distance management (otherwise known as losing touch). I suspected that bizarre behavior, such as a small town college chancellor's eight year commitment to locking the administration building at 4:00 P.M. and never being seen in a local grocery store or restaurant, arose from a cult perception of the mystique of leadership. The perception seems to be this: the less I interact with the people I am supposed to manage, the more I will enhance my image as their leader. Chancellors like this can survive best where their own boards of trustees or regents also practice distance management.

In contrast, teaching by any means, even teaching through television, carries admonishments that we maximize interaction with our students. But when the issue of *teaching improvement* arises, we're back to distance management as usual, with endless creativity for devising ways to avoid students. We are taught to go to our chair's office, to our dean's office, to the faculty development center, to lock ourselves in our own offices with self-help books, to view teleconferences and videotapes of how others succeed, and even to fly across the country to attend workshops to help us improve. In short, we are told to try to consult with virtually everyone about our teaching except our own students!

The heresy I propose is to break with such nonsense. First, work directly in a structured way with your students to improve your teaching. Discover the solutions to problems together and experience the changes that working with students can produce. Second, look to external sources for new ideas, inspiration, and answers to problems that you cannot resolve by working with your students in a structured way.

Individuals who are recognized as consistently outstanding teachers by peers and by students can be found in any discipline. These teachers achieved their status through continuous focus on practice rather than through a study of theory. Practice eventually enabled them to become expert managers—not simply experts at managing classrooms but, more precisely, experts at managing people engaged in the enterprise of learning. Physician and author William Glasser (1990) refers to teaching as the hardest of all management jobs. Management cornerstones include achieving excellent communication, mastering the art of listening, conveying caring for others, inspiring confidence, and promoting enthusiasm. These traits are as important to teaching as to any management enterprise.

Many professors who make incredible effort still find themselves receiving poor teaching evaluations from both students and peers. Successful teaching is not, unfortunately, the guaranteed outcome of dedication and hard work, but rather comes from focusing our efforts on areas that will produce the needed changes and yield reasonable returns. There is a considerable amount of research to show that most of us, particularly at the beginning stages of our teaching, are not good at determining, by ourselves, where our own efforts should be focused. We evaluate ourselves by our intentions, whereas others evaluate us by our actions. Therefore consultation with instructional experts about our teaching does help us to focus on our actions. Without this focus, we can enter into a cycle of trying harder that translates into working longer hours without rewards or much success, and this only leads to cynicism and burnout.

Recent experiences show that regular, structured discussion about teaching with our students can also provide the needed focus. We may be tempted to dismiss students' suggestions out of hand on the basis of their traditional status in the hierarchy of colleges and universities. Although we place great stock in the authority of expertise, consider: What chairperson, mentor or faculty developer has the

first-hand, in-depth experience with our teaching that can compare with that of the students enrolled in our own courses? Learning to tap the human resources present in our classes to help us to improve our teaching is not an issue of content knowledge or pedagogical knowledge, but is indeed an issue of applied management.

— **A Worst-Case Scenario** —

Consider a case in which a student gives his/her best efforts toward a difficult class. The professor ignores the student all semester, never suggests how to improve, and gives the student a bad grade on the last day along with a few insulting and very personal remarks. Few of us would consider that as helpful practice for creating better scholars, but this hypothetical student's situation is parallel to that in which many universities place professors. To wit: you may have devoted nights and weekends to your class preparation, delivered what you judged to be impeccable lectures, maintained high standards, kept all your office hours, even achieved the standard grade distribution championed by your dean, and felt that you really had done your best. Then you discover that about a third of your students have roasted you on their final evaluations—making degrading comments that ran the gamut from 'not caring,' 'not being available for help,' 'being disorganized and unclear'—maybe even for exhibiting poor taste in clothing! This is devastating, but it occurs when there is a serious disparity between what the students and the professor perceive is actually going on inside a class.

Who is at fault in the scenario? Could it be the university's fault? It might at least have provided a program of mid-term formative evaluations. But some universities have washed their hands of any development of their own faculty. Could it be the students' fault? By not expressing their difficulties and dissatisfaction to you, they concealed their needs so that you could not meet them. And could it be your fault? If you relied only on your own labor, your own perceptions, and your own values, and you ran the course on your own schedule and desires from syllabus to final period, then you may never have actually managed the people in your course. In this age of scapegoating and victim-defining, we could assign blame endlessly to everyone involved, but the message of this chapter is to deal with dis-

appointments by doing something effective rather than by blaming or initiating a flurry of wasted effort. If we were caught haplessly in such a scenario, and we were to ask ourselves what we really want to happen next, few of us would list assigning blame or increasing our labor in penance as our heart's desire. Most of us would want success and a way to assure that the scenario never happens to us again.

— **How Edward Deming Achieved Success from Worst-Cases** —

Management, like teaching, has had its own history of theories, recommended practices, methods and techniques. I like the model proposed by Edwards Deming because it has a track record of success and it is so applicable to managing the college classroom. The core tenet of Edwards Deming's participatory management (see Deming, 1986) is that the people closest to any problem/situation have the greatest incentive and potential to understand and solve or improve it. Deming's methods contrast greatly with those of the once traditional boss-managed corporations. Those corporations were strictly hierarchical and characterized by one-way, chain-of-command communication from supervisors (or hired experts) to workers. The workers were supposed to do as they were told passively and to leave their creativity at home.

Deming's opportunity came when he was engaged by Japanese corporations who badly needed to improve the quality of their products. He found that most factories were the typical boss-managed variety and relied on inspection of the product at the end of the assembly line to achieve quality. If flaws in widgets were found, the bosses tried to improve quality by scolding workers. Deming studied the outcomes and confirmed that more final inspection, more blaming and more scolding did nothing to improve the quality of widgets; in fact it made things worse. Deming sought alternative ways to get improvement; in the process he redistributed management so that it became everyone's responsibility.

He soon found that quality could be increased by promoting two-way oral communication and respect between bosses and workers. The workers, in fact, possessed valuable knowledge that went unrecognized and not utilized. Further, they wanted to exercise creativity to

make their workplace better, but the boss-managed structure discouraged this. Deming learned to tap this knowledge and creativity by having regular meetings where bosses and workers met as equals to listen respectfully to problems and to pool their knowledge to obtain solutions. He eventually called these meeting groups "quality control circles." Inspecting for flaws at the end was replaced by constant attention being given to every step of the manufacturing process.

As the suggestions given by the workers were implemented, flaws began to disappear from widgets. Managers also began to discover that they didn't have to come up with master plans in a lonely office and then force change down the throats of resistant workers. They began to build support through the team connections; when a plan was implemented, little forcing was required. The plan was understood because the workers themselves helped to create it.

Deming's overall approach was to create an encouraging environment built on regular, purposeful communication and a respect for the contributions made from all levels. Deming stressed the concepts of shared empowerment and ownership. *Empowerment* is the dynamic that increases participants' ability to make positive changes in their own work environment and in the ongoing enterprise. Empowerment enables responsibility; charging someone with responsibility without providing enabling empowerment is a way to bring frustration, not results. *Ownership* is a status conferred by empowerment. Ownership arises from the personal satisfaction and pride that comes from being able to share credit for success that results from involvement.

This summary in no way implies that good management began with Edwards Deming or that he invented effective teamwork. Effective teamwork dates back through prehistoric times and accounts for the very survival of the human species. Principles of quality circles also have long been used by academics in their collaborations, and small group discussions were respected for the results they produced in research centers for years before they became a basis for a formal system of management. In teaching, close parallels exist between Deming's participatory management and cooperative learning in the classroom as espoused for nearly 30 years by David and Roger Johnson at the University of Minnesota¹.

¹ and by others—see chapters 9 & 10 of this book

While both Deming and the Johnsons built on earlier work and experience, there is good reason that they are recognized as authorities almost synonymous with their areas of study. They approached their topics in a scientific manner, amassed considerable data, formulated testable hypotheses, and eventually produced resources based upon coherent sets of principles that could be taught to others (Deming, 1986; Johnson, Johnson and Smith, 1991). While the use of learning teams still remains a less common practice than lecturing in college classrooms, the Johnsons and their colleagues must be given major credit for the awareness that now permeates all disciplines within higher education—that the power of group dynamics can be used as a viable, and often superior, alternative to the lecture. In a similar manner, Deming's published principles (summarized below) now enable nearly all prospective managers, including professors, to enact proven ways to use effectively the power of structured groups. We can use this power not only to produce higher-level learning through cooperative learning, but also to help us achieve better success in teaching.

■ **Application of Deming's Principles to Academia** ■

Academia has its own equivalent to reliance on final inspection and scolding through its use of end-of-course student evaluations for purposes both of improving teaching and for rewarding or punishing faculty on the basis of merit pay, tenure or rank. Mixing the two purposes is known to be bad practice, but still remains common. If evaluation is done just at the end of the course, then it only provides information after all opportunity for improvement is gone. In many institutions, giving the summative evaluation is still the chosen means through which to improve faculty, even though both educational research and management experience consistently indicate that such a choice promises disappointment.

Deming developed fourteen principles of management over nearly fifty years of diagnosing and curing management problems. (Condensed from Walton, 1986.)

1. Create constancy of purpose.
2. Adopt a new philosophy of quality.

3. Cease dependence on final inspection.
4. Consider total cost, not just initial price.
5. Find problems; improve constantly.
6. Institute on-the-job training.
7. Institute leadership across the organization.
8. Drive out fear.
9. Break down communication barriers between units.
10. Eliminate slogans, targets, and exhortations for workers.
11. Eliminate numerical goals.
12. Encourage pride of workmanship.
13. Encourage education and self-improvement.
14. Take actions needed to make transformations.

In higher education, we can use these principles as guidelines to help students work together in ways that are productive and satisfying.

When faculty are not taught how to improve through every day of the year, but are only taught to improve by being evaluated, then principles 3, 5, 14, 4, 6, 1, 2, and 10 are being violated, in that order of severity. When informal communication about teaching is not actively fostered between us and our students, principles 9, 7, 8, 1, and 2 are violated. When students feel they have no control over what happens to them in the classroom, principles 7, 8, 12, and 13 are violated. If our teaching environment puts excessive emphasis on grades (in the case of students) or student credit hours (in the case of administrators) and not on quality teaching and learning, then all the principles are prone to being violated wholesale, 11 and 12 most obviously.

It is sobering to note that Deming's principles were established at a price. These principles were verbalized only after violation of each brought its own set of serious consequences.

Student management teams draw heavily from the experience of participatory management as developed by Deming, expressed in the fourteen principles listed above. For purposes of this chapter these fourteen principles can be reduced to six key concepts:

1. Students should be enlisted as colleagues in improving the teaching and learning enterprise.
2. Good management practice can lead to good teaching practices.
3. Teaching skill is not conferred at birth, but is learned through focused effort and experience.
4. The ability to teach well is maintained by continuous effort to improve and will atrophy unless so maintained.
5. Communication problems are the most common obstacles to successful teaching.
6. Improving teaching is easier to do with the help of others than alone.

All six of these concepts have foundations in practice and research.

Can Our Students Help Us to Improve Our Teaching? —

Historically, student helper roles have ranged from single observers (Fink, 1973) to teams of observers (Sorenson, 1994; also summarized in Rhem, 1993), who were actually trained student employees of faculty development centers. The latest reports show good results from these student helpers. But the distinction of whether one uses students from inside or outside one's own class is not trivial. As soon as one composes the team from outside the class, the students are placed in the role of monitors, observers, and consultants, but in no sense are they operating under Deming's principles of participatory management. Improving classes through outside interveners or through a student management team are as different in concept as managing a company by an external consulting firm or by its own employees.

The results from over 100 student management teams affirms that our students in a participatory management structure can indeed be suitable colleagues in bringing about significant improvements in our teaching. The teams have a very high success rate in producing specific improvements. About 85% of teams produce notable improvement during their ongoing semester. If teams that formulate major improvements that can only be enacted the follow-

ing term are added to the 85%, then about 98% of teams are successful in generating notable improvements (data from Nuhfer and others, 1990-96).

There is an unchallenged assumption in the literature of faculty development that hints that progress can only be made with the aid of an expert consultant, but industry's successful quality circles are not composed of outside experts. They are made up of involved people who are empowered to continually improve their own work environment through pooling experience, insights gained through introspection, and creativity in a structured group environment. Teams of average people working together establish synergy that enables them to accomplish surprising results. Such teams have a habit of discovering, on their own, the solutions that an expert would provide. A single student cannot serve a faculty member as well as an expert consultant, but the presumption that a structured team composed of a committed faculty member and his/her own students cannot generate much improvement is reminiscent of the time when bosses pooh-pooed the concept that teams of workers could improve quality. Presumptions like these have been refuted repeatedly.

Some reasons that student management teams enable faculty to improve without experts are (1) the members meet regularly over a sustained period of time rather than for the customary single consultation with the expert; (2) the team members are committed to improvement and quality; (3) teams may acquire data through formative evaluations (Murray, 1984) and class room assessment techniques (Angelo and Cross, 1993), which is the same data available to expert consultants, and (4) the synergy of regular, purposeful group discussion produces insights that an individual would not likely achieve alone.

The Student Management Team — Using Deming's Principles for Ourselves

Student management teams are rough equivalents to Deming's quality control circles. The benefits of using these teams are to polish our own teaching practice so that our classrooms are more suitable places in which to teach and learn. Teams provide mutual empowerment, wherein both we and students give ourselves permis-

sion and structure to communicate about teaching in order to study, transform, and improve what is taking place in class. Teaching cannot be improved by guessing at what our students' needs may be. In order to learn our students' needs, our students must be assured respect so that they can safely communicate their needs. We must be assured respect so that we can work safely with those needs to formulate the best possible solutions. The formal structure of the team provides this safety. As improvements occur, all should be able to own the pride that comes with success. If failures occur, it is then no longer satisfactory to merely blame the professor. Instead, the failure is owned by the entire class and the appropriate response is not defined by unproductive evaluating or blaming, but instead by finding a remedy so that the failure cannot happen again.

Student management teams consist of the professor and several students. The students are selected from within a single class, and the team is convened for the specific purpose of improving the classroom teaching and learning environments. The teams are a means to vest students with more responsibility for the success and quality of their own education and to help build academic community through total involvement. They are also a way of stimulating in students an interest in teaching, beyond the self-serving experience of obtaining content or formal credit. Serving on a team is a step up from being a scholar to becoming a scholar-citizen with an increasing awareness of the importance of caring about students, about professors, about teaching and about learning.

Student management teams

- Consist of 3-4 students (usually) plus the professor; one student is chosen by the professor on the basis of energy, desire, leadership; other members are selected in a variety of ways, including election by class.
- Students are all from same class of the professor; an external facilitator is optional.
- Students have a managerial role and assume responsibility for the success of a class.
- Students meet weekly; the professor attends only every other week. Meetings generally last about one hour.

- Meetings are all held in a neutral area away from classroom and professor's office.
- A written log of suggestions, actions, and progress is maintained; the professor retains the log at the end of the term.
- The team is provided with its initial task by the professor; these tasks can relate to delivery methods or to the content of the course.
- Teams utilize the group dynamics approach of quality circles.

Small numbers of about four students plus the professor are ideal, but some teams are larger. Regular attendance at meetings is essential, as is maintenance of a written log which is retained by the professor at the end of the course. This log proves invaluable when rewriting the syllabus for the next course offering. The professor should consider the initial task proposed to the team as an opportunity to ask for help in a specific area. This area could arise from a present concern such as poor student attendance or lack of discussion; it might come from an area of concern defined from an evaluation tool such as a formative evaluation instrument or last term's student evaluations.

The operation of the team is based on a global charge of shared responsibility. The manual for the development of student management teams we use states: *Students, in conjunction with their instructor, are responsible for the success of any course. As student managers, your special responsibility is to monitor this course through your own experience, to receive comments from other students, to work as a team with your instructor on a regular basis, and to make recommendations to the instructor about how this course can be improved.* (Nuhfer and others 1990-96.)

It is obvious that such an arrangement empowers students. For most this will be their first experience with a formal structure that assigns high positive value to students' involvement in enhancing their own learning environment and enables them to see the suggestions they make successfully enacted in class. Students constitute the major population on any campus, and classes are the part of the campus in which students are most intimately connected. Academic community is promoted by a campus culture in which all members of the campus see themselves as important contributors. The act of

empowering students to work with faculty to improve their own classes is a major asset to the nurturing of academic community.

The structure also empowers faculty. It frees us from dependence on student input obtained at the end of a course. It provides us with an opportunity to discover specific ways in which to improve, to consider multiple alternative ways to present material, to make changes while the class is ongoing, and most important, to practice developing better classroom communication with our own students. No matter what kind of institution that we teach in, we can have support and improvement by setting a structure for it in our own classroom.

Some professors are at first apprehensive about sharing power with students, but they have not considered that the image of a professor's power in the classroom is like that of the boss within the older boss-managed corporations. Boss-managed arrangements rarely operated at their true potential because employees' available ideas, energy and creativity were scarcely used. Deming produced such strikingly effective results because he found a way to tap these unused human resources. A classroom structure that casts the professor as the boss who controls all power, all information, and assumes all responsibility for success of the class, also is likely to be operating far below its potential. The students' own human resources go unused and unappreciated, and there are few worse indictments of inept management than an inability to use available resources. Viewed in this light, it is small wonder that research shows that what is actually going on inside the classroom and what is important to successful teaching are usually perceived much differently by professors than by the students in the traditional classroom (Feldman, 1986). Remaining ignorant of students' perceptions is not empowering, so enhancing mutual discussion and reflection is a most reasonable step toward true empowerment.

Conjectures that student teams would try to dilute course content or turn adversarial have proven to be completely unsupported. Smith (1993) found that even seventh graders, in a structured environment, can enter responsibly into collaborative decisions about curriculum. The team is the management entity, not the individuals within it, so if one member should initiate a self-serving or counter-quality agenda, the power of the group acts as the safety to control against this. The name, 'student management team,' emphasizes a

managerial role for students, but it is important to realize that what is being managed is the teaching and learning environment; at no time is the professor being managed by students. It is the responsibility of the team to nurture the teaching and learning environment. Experience with over 200 teams shows that students can be trusted with this responsibility.

■ **Tips for Successful Operation of Student Management Teams** ■

Student management teams are not for every professor. Those who reject the premise that we can learn anything of value from our students should not form a team. For those open to the possibility that there is something very important that we can learn, anticipate success! Student management teams have produced success for professors who have actually lived the worst-case scenario mentioned previously, and they have further improved professors who have already held prestigious teaching awards.

Forming a Team. Although continuous improvement is always desirable, the creation of a team should occur only if the faculty member wants it. It must not be formed in anyone's class because of external mandate from deans, chairs, or other administrators. The actual time one spends meeting with a team is small, on the order of about two hours a month, but improvement occurs only through making changes. Implementing good suggestions with these changes can involve more time. For this reason, form only a single team per term. Pick the course/class which is causing you the most trouble in terms of your own satisfaction or that expressed by students. Experience shows that the benefits that accrue from that one class will soon spill over into the other classes we teach. This is because the better management skills we learn travel with us; they don't stay in just one class.

Selecting a Team. All prospective student members for a team must also be willing participants; no one must be drafted. The basis for choosing team members depends upon what the professor wishes to accomplish. If the goal is general course improvement, one would

ideally compose a generally representative group. If one wants to address a specific concern, such as low summative ratings in the area of treatment of women and minorities, then a team representative of the likely affected people could be formed to discover the reasons for such ratings and to suggest solutions. In all cases, one member of the team should be hand-picked by the professor on the basis of displayed enthusiasm, desire, and/or leadership; a spark plug is important to insure a productive team. Other members can be elected or chosen in a number of other ways. The concept of the teams and the opportunity to be on a team can be announced on the first day of class along with a standing call for volunteers, but team members should not be chosen until all have experienced the class for a few weeks.

Committing to the Project. The most common reason that quality circles fail is unresponsive management (Deming, 1986). As faculty, we continue to retain our academic freedom and with it the right to reject the team's suggestions. However, if we form a team, we must commit to meet regularly with it, to be open to enacting change, and to courteously explain to team members our reasons for rejecting their suggestions.

■ **Principles for Student Management Teams** ■

1. **The quality of a class seldom improves as a result of final inspection through student evaluations.** Improvement requires continuous attention by all participants through every step of the class.
2. **The primary purpose of the team is to improve the quality of the teaching and learning environment.** The team does not boss the professor. In a broader sense, the team works for all present & future occupants of the university.
3. **Good two-way communication must not be assumed.** Communication must be purposely built by students and the professor. The professor may need to help student members of the team to learn to work together.

4. Responsibility and leadership are not reserved for the few. Everyone should contribute to and receive credit for their contributions. The team must not be seen as elitist. It should be kept visible to the class by being introduced when formed, by having meeting times announced to which members of the class have an open invitation to attend, and by giving the team time to poll the class with a survey or classroom assessment at the start or end of some class meetings.

5. Getting input from the entire class and the professor is a good way to set an agenda for improvement. Brief, written summaries of results from whole-class formative surveys and classroom assessments are a basis from which to locate critical opportunities for improvement.

6. Spirit is more than a warm, fuzzy ideal—its presence distinguishes the merely good class from the exceptional one that provides life-long inspiration. Once you commit to a team give your best effort to producing an effective environment that is effective and supportive for all. Spirit is largely the responsibility of students. It cannot be created by the faculty member alone, nor by deans, faculty developers, *etc.*

7. When an issue for improvement has been identified, action must follow and the results of these actions should be tracked. The team goes beyond mere surveys and classroom assessment techniques to recommend suitable changes, to help when feasible in their implementation, and to evaluate the results. A written record of these activities must be maintained.

8. Any compensation for team members must be completely separated from grades and credit. Grades are measures of content mastery, not compensation. The two must not be confused.

Formal training in participatory management is not required in order to obtain benefits from a student management team, although some training from experienced faculty or development staff will help a team get off to an earlier start. The handbook of Nuhfer and others (1990-1996) was written to permit teams to achieve success

without additional training. Any student management team composed of people who (a) recognize the need for courtesy and (b) can commit to action for a beneficial purpose will produce worthwhile results.

Start with a simple task like gaining some basic awareness. What are the fears or expectations about the team that students are bringing into it? Ask! Did your team members have any particular prejudices before they entered the class? Ask! Ask members to list the most difficult or exasperating part of the class they've experienced to date and get them to discuss what made the experience(s) difficult. Could the room's seating arrangement be better? What is the view and sound like at the back of the classroom? Get a team member or two to go back there and let you know. These are all simple tasks that can produce immediate and visible changes.

A final word of advice: ask your students for their help. Like the frustrated workers who were told to leave their creativity at home, students really do want to contribute to better teaching, to improve their learning environment, and to be part of a true learning community. Colleges and universities rarely provide the structure to allow them to do so. Asking students to fill out an evaluation form is not a legitimate substitute for participatory management. Instead, it can be an excuse to disempower the parties involved.

Sample Experiences with Student Management Teams

An engineering professor who wished to know about the attrition of women from the engineering program drafted a team consisting of four undergraduate women from differing engineering areas. He soon learned that the women students felt the college atmosphere was "cold." Providing more encouragement and positive recognition were proposed solutions.

A professor in business for whom English was a second language had low class ratings because of his thick accent. He asked his team to help him with communication. The team helped with pronunciation, encouraged use of overhead transparencies and handouts of lecture outlines, and called attention during class to terms that were difficult to understand so that they could be written on the chalk-

board. His evaluations improved greatly, and one of his student team members was hired by an interviewer who was impressed by the student's experience in using quality management to solve real problems. (This student's experience fits well with the "seven skills employers want" compiled by the American Society for Training and Development and U.S. Dept. of Labor in 1988. Five of these skills are gained in a student management team experience but not in content lecture classes.)

When a professor of English found herself in an over-enrolled literature course in a room badly designed for discussion teaching, her team investigated several alternative seating arrangements and prepared the room before each class until an arrangement was found that promoted the best class discussion.

Another professor was troubled by overt hostility to the material he taught in a race and gender course, and particularly by hecklers who sat together in a part of the auditorium. His team simply suggested, "Tell 'em to 'Shut up!'"—which in fact he did after acknowledging the student source for the suggestion. The shock kept the hecklers at bay for about two weeks. When they again started, the instructor's "Shut up!" was echoed from the team members. When the hecklers tried once again, about 80% of the class turned toward the hecklers with a "SHUT UP!" that carried the weight of peer anger and disapproval. The class was reclaimed for learning the rest of the term. When students internalize their responsibility for success of a class, their empowerment often inspires unaccustomed support.

A nursing professor had often taught interviewing through videotaped interviews. Her team suggested instead that a live interview be staged in class as a role play exercise, so that dialogue could be questioned and examined. It worked so beautifully that it became a permanent addition to the course schedule (Cunningham, 1993; Cunningham and others, 1993).

One team from a night business class chose to address a phenomenon they termed "disconnect," which occurred when students' attention wandered from the faculty member's presentation. Their original assumption was that the phenomenon took place because students in night classes were exhausted after a full day's work. Through a very well-planned collection of data and statistical analyses, the team discovered instead that the dominant cause of "disconnect" was other students' irrelevant comments.

Several faculty have reported having a class saved by a team, which usually meant that the team dealt with a problem of hostility and solved it, thus keeping the faculty member out of a potentially destructive "him/her vs us" contest. Student members of teams have shown up, of their own volition, in the offices of deans or at open reviews to refute less-than-truthful complaints about their class.

Teams can do much processing of information and explain it from the students' viewpoint. Do you give "One-minute Paper" or "Muddiest Point" surveys? Give them to the team and ask them for prioritized recommendations based on the responses. Do you get approval texts from companies wanting you to adopt their books? Toss these books to your team! Ask the students if these books are really any better than the one you're using. Get their views before you adopt. Do you give a mid-term formative survey? Go over the results with your team and pick one area to work on.

The teams have proven to be remarkably resilient to small disasters. One professor ended up with a failing student on the team; another had to give a team member a failing grade due to plagiarism (though the student stayed on the team for the rest of the term). These teams still were successful and produced marked improvements. Teams that produce marginal results usually suffer from apathy and low energy; that's why instructors should hand-pick one of the student members solely on the basis of desire and energy.

Teams fail occasionally. On the basis of about 200 teams for which I have records, 2% of teams have been dismal failures. These failures occurred when faculty formed teams but then did not follow up by meeting with students, or inexplicably recruited a student to the team who was overtly hostile to the whole concept of quality circles and subverted every meeting. To date, no faculty member has been damaged by a team, but the failures resulted in wasted time.

About 80% of all the improvements attributed to student management teams fall under the category of "communication," which is in accord with formative evaluation data that also shows that the dominance of teaching problems are attributable to communication issues. Solutions to these problems are course-specific and range from producing handouts and improving visual aids through providing field trips and guest speakers to selecting new texts and revising syllabi.

Student management teams should limit themselves to considering topics centered on academic content and delivery; teams should not deal with problems which an institution has already developed structures to deal with. An example would be a sexual harassment charge brought by a student or teacher. This would be an inappropriate topic for a student management team to consider.

— **"The Students Are Our Customers:" Management Perverted** —

Use of student management teams is a technology transfer of participatory management from the business world into the college classroom. Some academicians express suspicion of the wisdom of such transfers; they point out that colleges are not businesses or corporations, and should not be managed as businesses. They are often proven correct, not simply because universities and colleges are different from businesses (they are), but also because the transfer is performed ineptly. Customer satisfaction was obviously related to the quality of a product or service, and it became a central goal for some of the best known corporations (Peters & Waterman, 1982). It wasn't long before "The student-is-our-customer" jingle began to be heard with increasing frequency within the ivory towers. Those who mouthed the jingle were scarcely aware that they were participants in a classic example of inept technology transfer. Corporations focus on customers and products; in higher education students should not be considered as customers or products.

It is more useful to consider students as *colleagues* (Langford, 1993; Nuhfer, 1994). Corporations exist because of customer demand and are supported by profits from customers. Universities exist because of societal demand and are supported by a society that desires skilled, educated participants. The tuition and fees students pay to a university are minuscule contributions compared to society's cumulative investments in the institution. Customers usually have little vested interest in the ethics or atmosphere inside the corporate environment, and certainly do not form quality circles to address these issues. Students, like faculty and unlike customers, are inside the teaching-learning environment. They have an inherent interest in the processes that occur there. The true customer of the

university is society in general, including employers, alumni, and future students. There are rarely consequences to customers if they reject a product. On the other hand, if students reject the product by cutting classes or by not giving sufficient effort, then society is harmed through having to absorb poorly prepared participants. When students abrogate their responsibilities, the same harm occurs to society as occurs when professors give only half-hearted efforts to teach effectively. We are colleagues in more ways than we realize.

Individual student responsibility has been outlined eloquently and in detail by Ellis (1994), but the popular concept of individual responsibility (Davis and Murrell, 1993) is understood as assuring one's own success in procuring skills and knowledge. Students' social responsibility for improving their own institution's teaching and learning environment is a concept that most college administrators have failed to grasp, let alone promote. Student management teams stress student responsibility. They enable an understanding of responsibility, both personal and social, through experience of both the labor and benefits.

— **Can We See Our Own Progress?** —

There are three easy ways to examine your own growth as a stronger teacher through working with student management teams. The simplest is to keep a list of beneficial changes and modifications that you make as a result of working with your team(s). Another is to draft a one page summary of your own teaching philosophy in your word processor and save it in two files. As you gain insights and skills by working with your students, see if your teaching philosophy has been expanded or modified. If so, make regular additions/revisions in one of your files and, after one year, compare the revised version to your initial draft. Everyone should write his/her teaching philosophy, whether or not one forms a team. It allows us to check to see if the practice we do is actually what we subscribe to in our philosophies.

A third way to measure growth is more quantifiable and measures changes in the use of teaching practices: use a good formative evaluation tool. If your campus has a faculty development unit, they will have such a tool; if not, you can write or call the author of this

chapter to obtain one. Run the tool in your class before you start the team, and again the next time you teach the class and have incorporated the improvements suggested. At University of Colorado-Denver, we find that significant improvement appears in the areas of "clarity and organization" and "fair exams and grading."

Conclusions

For a teacher, there are few situations more enviable than being in a classroom with students who have made a formal commitment to seeing their class succeed. When students join with us in this way, it sets the cornerstone of true academic community and inspires us to go to extremes to give our very best to them. In such an environment, even embarrassing mistakes become vehicles for significant progress. As long as we are sincere about improving and learning from mistakes and are supported in our efforts by our students, we simply cannot lose in such a class. When the excitement for learning together becomes kindled in student and professor alike, we are all renewed.

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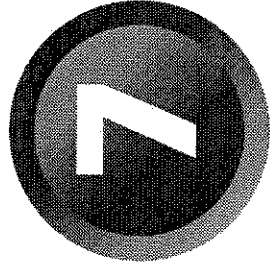
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Using Knowledge Maps to Enhance Teaching

Donald F. Dansereau & Dianna Newbern

Donald F. Dansereau became interested in knowledge maps as a graduate student, when one of his colleagues filled his office with models of human long-term memory constructed from Tinker toys™. Dansereau was struck by the possibilities these non-linguistic, graphical means of depicting a complex structure hold for teaching. A few years later, he began employing knowledge maps in his classes. His recent work has involved using mapping to enhance the communication between drug abuse counselors and their clients. It seems to be helping; a series of controlled studies has shown that heroin and cocaine addicted clients exposed to mapping versus standard counseling are more likely to stay drug-free during and following treatment. Dansereau is Professor of Psychology at Texas Christian University. His e-mail address is <d.danserau@tcu.edu>.

Dianna Newbern's interest in knowledge maps was stimulated by a scene in *Close Encounters of the Third Kind*. When the spaceship finally descends on the Devil's Tower and plays its five note sequence, a scientist plays the same sequence back on a keyboard. The aliens respond with a more complicated version, the scientist embellishes, and they conclude with an impromptu composition; variations on the original five note theme. Newbern was impressed by the ability of the scientist and the aliens to communicate nonverbally. She sees knowledge maps as another way to communicate when words fail us. She currently is Associate Research Scientist with the Institute of Behavioral Research at Texas Christian University. Her e-mail address is <d.newbern@tcu.edu>.