

USING CLASSROOM RESEARCH TO IMPROVE TEACHING AND LEARNING*

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The educational reform movement, initiated in 1983 by the publication of A Nation at Risk, changed the role of college administrators from managers to educational leaders. While that flat introductory statement may be somewhat overdrawn, the work of college administrators is influenced in large measure by the times in which they work.

In the 1960's, college administrators were dealing with enormous growth in college enrollments. Administrators directed their energies to the building of buildings, the recruitment of large numbers of faculty members, and in general the expansion of resources, programs, and facilities. The late 1970's found higher education still dealing with numbers, but this time it was with decline or the threat of decline. Harder than the satisfying work of building was the frustrating task of retrenchment, the deferred maintenance of buildings, the contraction of faculty and programs. The administrative requirements for the 1960's and 1970's were largely managerial, calling for skills in the acquisition and/or conservation of resources to handle the expansion or contraction of higher education.

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Many readers are familiar with the classic distinction between efficiency and effectiveness. Efficiency consists of doing things right, whereas effectiveness consists of doing the right things. Ideally, administrators would combine efficiency with effectiveness by doing the right things right. But by and large, we in education have been concentrating more on managing colleges efficiently than on making them effective, that is, we have been paying more attention to doing things right than to doing the right things. While some might question how efficiently colleges have been managed, trustees, legislators, and the public they represent, are more concerned today about the effectiveness of higher education.

One sign of the rising concern about the effectiveness of education is the new emphasis on assessment. By 1987, two thirds of the states had introduced assessment initiatives (Boyer, et. al. 1987) and 79 percent of the campus administrators polled by the American Council on Education said that they expected some form of assessment to be introduced on their campus within the next few years (El-Khawas, 1987). The emphasis on educational effectiveness, accompanied by the growth of the assessment movement, has swept the nation with remarkable speed considering the number of people affected and the decision-making mechanisms involved. Although the general purpose of assessment is the eventual improvement in the quality of education, there are two quite distinctive goals in the assessment movement. Both goals have implications for educational leadership.

One might be called "assessment-for-accountability;" the other, "assessment-for-improvement." Assessment-for-accountability is

illustrated in the remarks of Missouri Governor John Ashcroft who chaired the Governor's Task Force on College Quality. He said, "The public has the right to know what it is getting for its expenditure of tax resources; the public has a right to know and understand the quality of undergraduate education that young people receive from publicly funded colleges and universities" (National Governors' Association, 1986, p. 154).

The assessment-for-improvement perspective is expressed by William Turnbull, late president of Educational Testing Service. He wrote, "The overriding purpose of gathering {assessment} data is to provide a basis for improving instruction, rather than keeping score or allocating blame" (1985, p. 25).

While the ultimate goal of both types of assessment is the improvement of education, feedback is handled quite differently in the two models. In the accountability model, feedback is usually public, normative, comparative, and competitive. As Governor Ashcroft noted, the public has a right to know, and that implies that they have a right to compare programs competing for funds. Assessment-for-accountability is also "summative" in the sense that it provides a "stop-motion" summary of the situation at any given point in time. Assessment measures may be taken at the end of the freshman year, at the end of two or four years of college, or even from alumni five or ten years after graduation. The purpose of the information is to document the effectiveness of the education and ultimately to correct deficiencies.

In contrast, the role of feedback in the assessment-for-improvement model is to provide a continuous flow of information

that is useful in shaping the quality of teaching of learning while it is in process. This is generally referred to as "formative evaluation," and feedback is most effective if it is not made public and if it emphasizes competencies instead of comparisons.

A second distinction can be made between "direct" and "indirect" models of assessment. Those who, by virtue of their positions, are interested in accountability usually have indirect responsibilities for teaching and learning. That is, they are not on the campus or in the classroom, and must try in whatever ways they can to influence the behavior of those who are in a position to affect teaching and learning directly. It follows that the further removed one is from the scene of the action in teaching and learning, the more one is dependent on manipulating reward and punishment to bring about desired ends. States manipulate rewards for institutions; institutions manipulate rewards for departments, and departments manipulate rewards for teachers. Thus, the motivation for improvement in indirect models of assessment is usually extrinsic -- promotion, tenure, or a "teacher of the year" award for good teachers, and usually lack of reward (rather than punishment) for poor teachers.

College administrators, by and large, have found themselves dealing largely with assessment-for-accountability by indirect means. That is, they are being held accountable for something that they cannot control directly. What, then, can administrators do to improve the quality of education?

It is my contention that if we are serious about educational reform, teachers must assume more personal responsibility for what

is taught and learned in their own classrooms. That means, I think, that the assessment movement must be brought into the classroom and made the direct responsibility of teachers. One way to do this is to involve teachers in Classroom Research. By Classroom Research, I mean systematic and insightful observation about how students learn.

The purpose of Classroom Research is to provide feedback, insights, and understandings to classroom teachers about how students learn their particular subject matter. If we can help teachers assess the learning of their own students, we will go a long way toward establishing accountability in education. The ultimate goal for Classroom Research is to make teaching more productive, that is to reduce the gap between what is taught and what is learned (Cross, 1988). Classroom Research was founded on the premise that if teachers can monitor what students are learning, they can determine the effectiveness of their teaching and can modify their teaching accordingly.

An example of a very simple form of classroom assessment will make the concept concrete. "Minute Papers" is an assessment technique developed by a physics professor at the University of California, Berkeley (Wilson, 1986). A few minutes before the end of the class period, the instructor asks students to write the answers to two questions: 1) What was the most important thing you learned today? and 2) What questions remain uppermost in your mind as we conclude this session? (Other examples of simple classroom assessment techniques can be found in Cross and Angelo, 1988).

Teachers using this simple device have opened a window through which to view the response of students to a particular class session, but they have also incorporated some important pedagogical devices into their assessment of what students are learning. "Minute Papers" has two important pedagogical devices embedded in it. It asks students to summarize what has been learned, and it puts students on notice that they are expected to be actively involved in learning and in raising their own questions about their mastery of the subject matter. Classroom assessment usually asks rather simple questions, such as, How well can students paraphrase the major points emphasized in the class session? How much of the terminology of your discipline do they remember from one class session to the next? How well do they make comparisons and analyze arguments? The assessment techniques used in answering these questions teach as well as test. If a teacher wants to know how well students can analyze an argument, for example, the assessment technique must engage students in the analysis of an argument.

A few examples of Classroom Research projects that have been carried out by teachers with whom we have worked will help to illustrate the role of assessment in providing feedback to the classroom teacher:

A pre-calculus teacher in a community college had long been troubled by the extreme diversity of math backgrounds in his course, so prior to the teaching of each new unit, he developed a brief questionnaire to determine students' familiarity with the procedures and terminology of the new material. With this "background probe" and his analysis of the data collected, he could anticipate where

students would run into difficulties and could modify his teaching accordingly. He reported that an unanticipated benefit of his classroom research was students' appreciation of his concern and interest in their background for the unit.

Another example comes from an English teacher who was never quite sure what students were really learning from small-group sessions in which the task was to critique one another's papers. So she used a modification of Minute Papers, asking students to take a few minutes at the end of the class period to write the answers to these two questions: First, What have you learned today about your own writing? Second, What did you contribute to the learning of others in the group? A side benefit of her study was that students, knowing that they were going to be asked about their learning, gave increased attention to the tasks of the small groups, and not so incidentally, gave much more attention than they had previously to thinking about how they could be helpful and constructive in their critiques of the writing of their classmates.

A final example will make clear the pedagogy behind the assessment tasks that teachers are using in early states of Classroom Research. The primary purpose of a course in third-semester calculus was to prepare students for advanced courses in engineering and physics. The question the teacher of this course chose to investigate was, Were students, in fact, able to apply their learning in math to science concepts? He collected simple applications from his colleagues in the science department and determined how well students could handle them, and then experimented to see how he could help them learn more effectively. A side benefit of his project

was the conversation and collaboration of teachers across departments.

Our experience is that many teachers proceed rather quickly from these fairly simple investigations in assessment to more complex research designs that are of interest in their particular discipline.

The purpose and the methods of Classroom Research are quite different from more traditional educational research. The purpose is not to discover general laws of learning (which is the task of more traditional educational research) nor to enhance the research reputations or publications records of classroom teachers. It is rather to help teachers gain insight into how students respond to their teaching methods and how students learn their particular subject matter. Because of this specific focus, Classroom Research does not require sophisticated statistics or knowledge of sampling theory since classroom researchers are not trying to select a sample and generalize to the population at large. They know their population; it consists of the students sitting in their classrooms. The very specific question posed by Classroom Research is, What are **my** students learning in **my** classroom as a result of **my** instruction?

Classroom research has its roots in two traditional routes to the improvement of teaching -- educational research and faculty development -- but it differs in important respects from both of these approaches to the improvement of instruction. It is to these differences that I turn now.

After more than 80 years and thousands of research studies, it is hard to say what we "know" through research that has changed the

way teachers teach. It is not just that research is not written for practitioners or that practitioners don't read research, it is that practitioners consider research findings irrelevant. One noted educational researcher put it this way: "Thus, those who are best informed about educational research seldom use the fruits of their labors . . . If educational researchers do not use research findings to guide their own professional decisions, why should we expect those less well informed to use research findings to guide theirs?" (Eisner, 1984, p. 256).

Critics of educational research are quick to point to some major problems, and there isn't much doubt that research in the social sciences in general, and education in particular, is undergoing massive, albeit slow change. Older generations of educational researchers were impressed with the great scientific advance made in the physical sciences, and they not only named their endeavor the social "sciences," in emulation of the so-called hard sciences, but they tried to apply the methods of the sciences, which suggested tightly controlled experiments and the search for universal laws or generalizations applicable across a variety of situations.

When I was in graduate school, psychology was dominated by B.F. Skinner and the Behaviorists. Psychology was a science, we insisted, and we couldn't study what we couldn't observe. We believed in stimulus-response or S-R theories of learning. There was a measurable stimulus and an observable response which monkeys, pigeons, and people all gave with some regularity. Given sufficient persistence, we thought, we could discover some universal laws of behavior. This school of psychology casts learning into a "black box,"

so called because we didn't know — and certainly we thought it unscientific to study — what went on in the mind of the learner.

Now a new generation of cognitive psychologists has emerged, and they care deeply about what goes on in the mind of the learner. Moreover, they really don't mind asking people what's going on in that formerly "black box" of the mind. One of the more exciting branches of research on learning today focuses on "metacognition" which is a study of how learners monitor and direct their own learning.

Classroom Research belongs to this branch of the educational research family in its acceptance of the importance of getting feedback from learners on what is going on in their minds. How do they perceive the learning situation? What, in fact, are they learning, and how well? How aware are they of themselves as learners? Do they monitor their own thinking process? Are they able to tell us or show us what kinds of teaching have an impact on their learning?

While Classroom Research would find itself very much in tune with those who are interested in what goes on in the mind of the learner, there is an important difference in the goals of cognitive psychology and Classroom Research. Educational researchers who study metacognition are still searching for universals. For example, they would like to show that students who monitor their learning are significantly better learners than those who do not. This is basically a scientific model searching for prediction and control. A general law of learning might be stated in this way: If we can teach students

to monitor their learning, then we can produce more effective learning.

While Classroom Researchers are certainly interested in any such finding, that is, interested in benefiting from the experience and knowledge of educational research, the curiosity of Classroom Researchers is directed more toward insight and understanding than toward prediction and control. Classroom Researchers, for example, are not looking for a law of human behavior that will provide an if/then formula that will tell them that if they teach in a certain way, then a certain kind of learning will occur — or even that such learning will occur predictably in 62 percent of the cases. Classroom Researchers are primarily interested in gaining the insights and understandings that will strengthen their base of professional knowledge about teaching. They want to know what works, of course, but they are even more interested in knowing why it works. They want to understand learning as a process and they consider insights as important as findings.

Every once in a while, someone becomes interested in teacher-proof education, that is in devising some presumably research-based rule or formula that if applied as researchers direct, will result consistently in improved learning. Although we sometimes speak erroneously of teacher training as though teachers, like pigeons, can be trained to respond in predictable ways, we should be talking about teacher education or better yet the professionalization of teaching.

The major characteristic of a profession is that it depends on the wise and effective use of judgement and knowledge. No one can

tell a teacher what to do next in a classroom that varies from minute to minute. What the teacher does next depends on skill, experience, professional knowledge, and insight. There are few rules that can be applied and few situations in which conditions in the laboratory or experimental condition can be duplicated in the classroom. Thus Classroom Researchers identify more with the professionalization of teaching through increasing insight and understanding than with the scientific model of controlled experiments in search of universals.

Freeing Classroom Research from the search for universals has a number of advantages for the professional teacher. In the first place, one of the firm rules of science is that findings must be replicable. Any other scientist anywhere in the world, following the same procedures as the initial investigator, must be able to come up with the same results.

Replication in education is hard to come by. Teachers and students are not replicable; no two teachers have the same classrooms or the same students. Thus, we in educational research tend to depend on probability and repetition to verify findings. If X number of physics teachers teach Y to 100 students, and 67 percent of them respond in a consistent way, then we have to be content with the conclusion that the finding is valid most of the time.

Some probability conclusions are quite elegant; others are enormously complex and take mountains of data and analysis to make their case. Let me give an example of one of the more elegant and useful, but frequently ignored findings, from educational research that is equally applicable to Classroom Research.

We have known for at least 50 years that the forgetting curve is steep for information presented in a lecture. In 1923, Harold Jones demonstrated that the average student could recall about 62 percent of the lecture material immediately following the lecture, about 45 percent after three or four days, and only 24 percent after eight weeks. If students took an examination immediately following the lecture, however, they retained almost twice as much material after eight weeks, both for "thought" questions and for "fact" questions. (This classic experiment was called to my attention by Robert Menges, 1988.)

That finding from educational research could be made into a general law of learning that would state that people remember what they do longer than what they are told, or that students actively involved in coming up with their own answers remember the material longer than when answers are given to them, or that material recalled under conditions that are moderately anxiety-producing is remembered longer than when conditions are less threatening. Whatever the underlying rationale -- and that could be systematically investigated -- the probability is fairly high that if a teacher gave a final examination with half of the questions taken from the mid-term and half new questions of equal difficulty, students would make higher scores on the repeat questions.

That is what I call an elegant experiment in educational research, as applicable to Classroom Researchers as to expensive funded laboratories. It springs from a rather simple insight into our own or our students' behaviors that is consistent most of the time.

Now let me give an example from educational research that is common, more expensive, less elegant, and by this time not very promising, but still pursued with great energy by both amateur and professional researchers. This great body of research is known as "trait-treatment interaction," and has fascinated researchers for decades, but probably reached its zenith in the 1970's. One researcher (Goldberg, 1972) used 350 personality and other trait measures on 800 students in his study and tried to see if any of these traits interacted with instructional methods (lecture vs. self-study) and student learning outcomes (quiz vs. papers). He found virtually no significant statistical interactions, but we still search endlessly for the magic pill that will maximize learning for students who differ in learning styles, ethnicity, life stage, and other individual and group differences that are easy to measure but hard to relate consistently to educational treatment.

Frankly, I confess that I'm not quite sure what we would do if we found that magic pill. Would we separate or track students into homogeneous groups, based on some measure of the significant learning trait? Would we pitch teaching methods consistently to strength, or would we conclude that in order to live in a complex world, students need to be confronted with teaching styles that challenge their weaknesses?

Despite these reservations about the implications of the findings, as a teacher I would want to know that certain methods worked best with students with certain characteristics — not to predict who should be assigned where, but to add to my basic store of professional knowledge. Instead of speaking of applying research

to practice as though it were a one-to-one relationship or formula, we should be talking more realistically about adding understanding to our base of professional knowledge. That is the basic purpose of Classroom Research — not to present or publish or report findings, but to enlighten, aid understanding, and improve teaching skills.

Since almost everyone in our society equates valid research with reporting findings, let me dwell for just a moment on the advantages and disadvantages of reporting findings. In many ways, the advantages are so obvious as to obscure the disadvantages. The obligation to report findings permits peer review, shares and advances knowledge, and forces one to examine and formulate one's own findings in some reasonably objective manner. But there are also disadvantages. The disadvantages are that present requirements for objectivity frequently result in forcing subjective impressions into objective data. Teachers, for better or for worse, operate more on subjective sensitivity to the nuance of the situation than on objective facts. If we have some understanding of learning styles, for example, we may respond sensitively to a student's difficulty, without necessarily applying a "trait/treatment" interaction. We might, for example, help a student to understand his or her learning style and to take effective responsibility for learning without necessarily adapting our teaching style to the multiple learning styles that occur in almost every college classroom.

Educational researchers are now beginning to move from the older heavy emphasis on quantitative and statistical studies to studies aimed at increasing understanding rather than reporting findings. Qualitative researchers, for instance, are reporting findings

in narrative form -- some call it "thick description," which attempts to give the reader who was not present an understanding of the situation. But most Classroom Researchers don't have time for field notes, transcriptions, and the extensive writing called for in thick description. For Classroom Researchers, insight may be relatively quick and easy. While discussion with colleagues will help confirm and possibly enrich understandings, a Classroom Researcher is neither physicist nor anthropologist searching for reportable findings; he or she is a professional teacher searching for understanding.

Let me give an example of a Classroom Research project that is enormously rich in insight but scanty in reportable data.

This project was carried out by Dave Nakaji, a physics teacher at Los Medanos Community College. He is interested in the question of how physics students use visualization to solve problems. He had 14 students, too few for a valid statistical study, but just right for providing insight into how individuals go about solving problems. Dave devised some systematic procedures for observing how students go about solving physics problems. He chose a particular problem for his study because he hypothesized that for this problem, the depth of understanding was enhanced by visualization and especially by the ability to shift perceptions during the solution.

Dave was primarily interested in learning more about the problem-solving process, and so he devised his study to provide maximum opportunity for him as a teacher to systematically observe the use of visualization. Students were given a choice of how to describe what was going on in their minds. They could draw their

visualization on the blackboard, on paper, on a flip-chart; they could simply talk about it, or they could use hands-on materials such as modelling clay, blocks, or pipe cleaners. To make sure that he captured the nuances of individual differences, Dave video-taped students as they were demonstrating their visualization to him. Since video-taping is somewhat threatening to most people, he went to considerable effort to talk to students individually and in class about the video-taping procedures and to make sure students felt comfortable with the sessions.

The third step in his project involved a "cool down" period of 15-20 minutes immediately following the video-taping, in which Dave engaged the student in dialogue about the process, permitting the student to fill in any gaps and allowing Dave to ask questions that would validate or contradict what he thought he was observing.

A fourth stage involved filming the student giving feedback while he or she was reviewing the original tape, and finally Dave attempted to relate visualization to other characteristics of the students such as learning style, interest, motivation, and grades.

While Dave was unable to relate the visualization of these 14 community college students to other characteristics that would constitute a breakthrough in how students use visualization in problem solving, he reported the following outcomes of his growth as a teacher:

1. He gained valuable insight into the use of visualization, enabling him to know how and when to use visualization in his teaching. What he thought before his study was that poorer students failed to visualize; what he learned was that whereas good students

tended to use visualization about 30 percent of the time, poor students showed enormous range in the time spent visualizing. But, whether good or poor students, all students visualize, and all have some difficulty shifting focus and point of view. Thus he learned what to teach -- teach all students to shift focus and to "zoom in and out" as they visualize the problem.

2. He experimented with a multi-dimensional approach to feedback from students, giving him greater competence and confidence in his ability to assess and access student thinking.

3. He gained a greater understanding of the complexities and challenges associated with the craft of teaching. He drew this analogy. "Just as an accomplished poet understands the subtle nuances of how words are put together, so must the accomplished instructor understand the subtle nuances of how students put meaning together, both emotionally and intellectually."

4. Finally, he counted among his learning and appreciations the close bonding with his students that his study permitted.

Although his project was more complex and time consuming than most, it is a splendid model of Classroom Research — intellectually demanding, hypothesis generating, calling for systematic and insightful observation, resulting in better understanding, and rich in its applications to practice.

Classroom Research would be foolish to eschew the quantification and scientific sophistication of educational research, but it would be equally foolish to simply emulate styles and conventions that fail to accomplish the full and unique purposes of

Classroom Research. The purpose of Classroom Research is to contribute to the professionalization of teaching, to provide the knowledge, understanding, and insights that will sensitize teachers to the struggles of students to learn. Classroom Research ought to feel comfortable in establishing its identity as consisting of any systematic enquiry designed and conducted for the purpose of increasing insight and understanding of the relationships between teaching and learning.

I have distinguished Classroom Research from traditional educational research, but at the same time, I have distinguished it from lunchroom conversation about teaching — which has its merits, but they are not the same merits as Classroom Research. Classroom Research is more than trading insights; it is an exploration of hypotheses specifically designed to advance knowledge of individual classroom teachers. Classroom Research requires investigative skills and hard intellectual work. It is a probing, questioning, systematic pursuit of knowledge about learning and the impact of teaching upon it.

Now I want to shift to some exploration of the relationship between faculty development and Classroom Research. As Classroom Research matures, I think it will establish a closer relationship with faculty development than with either assessment or educational research. The relationship between Classroom Research and faculty development has the potential for strong bonding because they share the same focused goal, and that is to make teaching more professional, based on understanding, insights, knowledge, and skills.

Assessment and educational research, in contrast, both have goals **in addition** to the ultimate improvement of teaching. For assessment, there is the obligation of accountability, to show taxpayers and educators what they are getting for their money and effort. For educational research, there is the obligation to advance scholarship and knowledge about teaching and learning through replication and validation. But for faculty development, the goal is focused on the development and growth of the teacher as a professional.

Faculty development works from a somewhat larger perspective than Classroom Research. Theoretically, if not very often in practice, faculty development includes some attention to the development of an institutional climate that supports teaching and to the personal development of faculty members in non-teaching as well as in teaching roles.

Where differences are most likely to appear between faculty development and Classroom Research is in the actual program of activities, and most importantly in the focus of attention. The direct goal of faculty development is to improve the performance of **teachers** by providing information, increased self-confidence, opportunities to practice teaching skills and techniques, and by creating a supportive institutional climate that recognizes good teaching and is conducive to its growth. While Classroom Research is also interested in effective teaching, the focus of Classroom Research is on **student** performance. In Classroom Research, we are looking at student learning as a function of teaching. The premise is that it makes no difference how perfectly a teacher is teaching, if students

are not responding in their learning. The two stances are really quite different. Faculty development starts with the fundamental assumption that we know what to do to improve teaching-- and that is not an invalid assumption. We do know a lot of things that we can do to improve teaching performance.

Video-taping, for example, shows some teachers quite vividly what they are doing to distract students from learning, and student ratings have been shown similarly effective in changing some teaching behaviors (See Cross, 1989 for a summary of these research findings.) The observation of classes by faculty colleagues or consultants from the office of teaching improvement are other ways of providing feedback to teachers on their performance. But it is important to note that in all of these activities, the **teacher's** performance is the object of study and attention. Moreover, for the most part, these popular forms of faculty development are directed more toward the removal of fairly obvious errors than toward the development of outstanding teachers who possess the basic understanding of the subtleties of their profession and its impact on learning.

Other forms of faculty development such as lectures by authorities, newsletters, workshops, and conferences frequently present new knowledge or offer opportunities for the development of fairly specific teaching skills. The information provided may be on learning styles, ethnic characteristics, or adult learning preferences, for example. Opportunities for skill development frequently involve exposing teachers to a particular brand of teaching such as mastery learning, values clarification, teaching basic writing, and the like.

The point is that in faculty development, some external observer is providing information to the teacher on how to teach more skillfully. The observer is also frequently providing feedback to the teacher on what the teacher is doing and how well he or she is doing it and how he or she could do it better. In Classroom Research, the teacher is the observer rather than the observed. Classroom Researchers are observing students and how well they are learning.

The pathways to the improvement of teaching and learning are multiple. Assessment, educational research, and faculty development are all dedicated to the ultimate improvement of the quality of education. But if the goal of the educational reforms of the 1980s is to improve learning, then what happens when teachers meet students in college classrooms is all-important.

In conclusion, administrators who once gave attention to "managing" their institutions, are turning now to "leading" their faculties and administrative colleagues in the educational task of improving the quality of education at their college or university. If administrators are to have an impact on the quality of education, they will need to give some attention to three qualities of educational leadership:

1. Administrators must be **perceived** as interested and supportive of all efforts, on the part of anyone, to improve teaching and learning.
2. Administrators must be **knowledgeable** about what is involved in educational excellence, specifically about what makes teaching good for students and challenging and satisfying for teachers.

3. Administrators must provide appropriate **incentives** and **rewards** to move people in the institution toward the overall goal of excellence in teaching and learning.

The perception of administrators as educational leaders has gained widespread acceptance in recent years -- especially in institutions that pride themselves on their teaching mission. When 150 prominent community college leaders were asked to rate the importance to local colleges of the 63 recommendations made by the Commission on the Future of Community Colleges (1988), the two recommendations receiving top priority assignments were: 1) "Insist that good teaching is the hallmark of the community college movement, with students encouraged to be active, cooperative learners." 2) "Make a commitment to the recruitment and retention of top quality faculty and to the professional development of these colleagues." (AACJC, 1988, p.21). It seems clear from the priority assignments given these teaching/ learning recommendations that community college leaders wish to be perceived as interested in and supportive of excellence in teaching and learning.

Gaining knowledge about teaching and learning is somewhat more difficult for college administrators. Such knowledge is not routinely taught in graduate level professional preparation in the academic disciplines. Worse yet, it is not even emphasized in most doctoral programs in educational administration. Graduate programs for educational administrators, however, are now beginning to require courses in teaching and learning, and many disciplinary departments are putting new emphases on the preparation of teaching assistants for their future careers as college teachers. In

addition to these efforts to prepare future generations of college leaders, workshops and institutes are adding modules on teaching and learning, and the literature and professional conferences are likewise trying to provide current administrators with the necessary knowledge to lead their colleges toward quality in undergraduate education.

But whatever college administrators can do to inform themselves about quality issues and to improve the perception that their constituents have of them as interested in and supportive of efforts to improve teaching and learning, many administrators will still consider their primary influence to lie in devising and administering an appropriate and effective system of incentives and rewards.

I contend that Classroom Research has its own built-in incentives because the process itself is intellectually challenging, promotes discussion and recognition across disciplinary and even institutional boundaries, and enhances the status and satisfaction of teaching. There are, however, many things that administrators can do to encourage Classroom Research. A start on such a list would include the following:

1. Devise a promotion and tenure system to recognize teaching performance and efforts to engage in professional activities such as Classroom Research.
2. Provide and support opportunities for teachers to engage in Classroom Research, individually, in small clusters of interested and motivated faculty, and as an important aspect of departmental improvement and evaluation.

3. Provide opportunities for teachers to increase their knowledge base and gain professional recognition through attendance at professional meetings and participation in graduate-level courses or faculty development activities emphasizing the collection and analysis of Classroom Research.

4. Promote local discussions of Classroom Research projects, affording teachers an opportunity to share designs and findings, and to receive local recognition for participation in growth-enhancing professional development.

This chapter has attempted to present one approach to broadening the professional base of teachers. The particular strengths of Classroom Research are that 1) it engages teachers intellectually in the improvement of teaching and provides a built-in self-assessment of their effectiveness as teachers, 2) it permits teachers to make professional development personally relevant by using **their** questions, **their** particular students, and **their** subject matter specialties in the design of research and the collection of data, 3) it empowers teachers and involves them personally and directly in the national goal of improving the quality of undergraduate education.

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