

DESIGNING LEARNING-CENTERED CLASSROOMS

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What is a learning-centered classroom? Terry O'Banion (1999) observes that while the terms "learner-centered" and "learning-centered" are often used interchangeably, they do not mean the same thing. He highlights the difference by the use of an analogy in which a person goes to a spa for a week to lose five pounds. Although he is welcomed, treated with great respect, showered with attention, and treated with the latest advances in equipment and facilities, at the end of the week when he steps on the scale, he is dismayed to find that he has not lost a single pound. O'Banion concludes that "He has paid a high price for a learner-centered experience, but did not achieve his learning-centered goal of losing five pounds."

Although community colleges have no desire to provide a pampered spa experience for their students, community colleges do take justifiable pride in making students feel welcome, important, and the *raison d'être* for the existence of the college. While centering attention on the learner and his needs and hopes may be important -- even essential to the mission of the community college -- it is not enough. Robert Barr and John Tagg (1995) made a profound impression, not only on community colleges, but on all higher education, when they proclaimed that colleges exist not solely to "provide instruction," but to "produce learning." By titling

their article in Change Magazine, “From Teaching to Learning,” they inadvertently led some to believe that teaching is diminished in favor of learning—which all goes to prove that no good deed goes unpunished. But the concept of learning-centered classrooms makes it clear that learning is the task, and teachers and students are jointly responsible for creating and maintaining an environment in which learning is encouraged, valued, and accomplished. So what do we know about learning and how to “produce it?”

We live in an era of exceptional excitement and promise for educators. We know more about learning than anyone in history has ever known, and scientists continue to explore the mysteries of the brain with its infinite capacity for growth and change from the womb to the tomb -- quite literally. At present, there is more interest in the development of the brain at the extremes of the age distribution -- from pre-birth to after-death autopsies of Alzheimer's patients.—than in the middle years that are the major concern of educators. Although perhaps less splashy and spectacular than demonstrations of the neural connections of the brain, cognitive science has been making progress of its own in understanding learning in 8 to 80 year olds. The work that shows special promise for improving practice are the studies of the correlates of learning. The question for this research is, “What are the conditions that are most likely to produce learning?” This is a practical and answerable question, and it is central to the design of learning-centered classrooms.

The lets-get-serious-about-learning movement started in 1983 when the most widely publicized report on education ever written

warned that “the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people (National Commission on Excellence in Education, 1983, p. 5). Four years later, a group of educational scholars and researchers was convened to cull from the voluminous research of the past 50 years those conclusions that would be most useful in addressing the need for improving learning in the nation’s colleges. Their report, entitled, the “Seven Principles of Good Practice in Undergraduate Education. (Chickering & Gamson, 1987) sets forth these seven conditions for learning:

Good practice

1. Encourages student-faculty contact
2. Encourages cooperation among students
3. Encourages active learning
4. Gives prompt feedback
5. Emphasizes time on task
6. Communicates high expectations
7. Respects diverse talents and ways of learning

There is solid research evidence that these are the conditions under which learning is most likely. “While each practice can stand on its own,” say the authors of the report, “when all are present, their effects multiply. Together, they employ six powerful forces in education: Activity, Cooperation, Diversity, Expectations, Interaction, and Responsibility.” (p. 1) These six forces can serve as guides for evaluating, not only campus-wide conditions for learning, but also the conditions that prevail in individual classrooms.

Despite growing criticism of the traditional lecture/discussion format, it remains the overwhelming method of choice among college teachers. Therefore, this paper addresses the reality of how to improve learning in rather traditional classrooms. Granted, the leading edge of innovations and experimentation in college teaching involves new pedagogies that are demonstrating their effectiveness (for example, learning communities, problem-based learning, service learning, collaborative learning etc. (See Cross 2000 for further information). But it is also true that if the known principles of learning were applied to traditional lecture/discussion formats, student learning would show significant improvement.

While formal “lecturing” is probably not as common in community colleges as in four-year institutions, virtually all teachers rely heavily on class discussion. But “class discussion” covers a wide range of learning sins and virtues. Some teachers use discussion to promote learning; others to fill class time. Some discussion is carefully planned; some occurs by default. Some challenges and engages students; some bores. Some is task-oriented; some lacks any focus. Some is learner-centered; most is teacher-centered (Research shows that somewhere around 80 percent of the talking in typical class discussion is done by teachers). Some discussion consists largely of questions and answers, with a call for “right answers;” some is more like a conversation, challenging analysis and higher level thinking skills. In short, class discussions can offer powerful learning experiences, but they can also be deadly, stifling time wasters, trivializing learning and discouraging rather than promoting it.

What should a learning-centered discussion look like? I suggest that it should look something like a winning basketball team. The six forces for producing learning that have been identified in research are similar to the forces that are apparent in winning a team sport. Certainly, a winning coach is going to go into the game expecting to win; she is going to hold high expectations for performance, is going to foster active engagement in the game and cooperation and interaction among team members; is going to cultivate diversity, nurturing and capitalizing on the distinctive talents of each member of the team. Moreover, a winning coach is going to demand that all players assume responsibility for keeping in shape, for showing up for practice, and for doing their personal best in each and every game. A successful coach knows the game and knows it well, but she uses lecture and demonstration sparingly, knowing that whatever talents she has or had as a player, she cannot transfer them to her players. The only way for players to develop and improve their skills is to get in there and practice the winning moves themselves.

Discussion is uniquely designed to encourage students to strengthen their intellectual muscle and practice their strategic learning moves. It can be a very powerful and useful teaching/learning strategy. Perhaps that is why it has lasted so long. It is less clear why it has endured with so few masters of the art.

C. Roland Christensen, professor emeritus of the Harvard Business School, is a recognized master of the art of teaching by the discussion method. He contends that discussion is more effective

than alternative pedagogies, “when educational objectives focus on qualities of mind (curiosity, judgment, wisdom), qualities of person (character, sensitivity, integrity, responsibility), and the ability to apply general concepts and knowledge to specific situations” (Christensen, 1987, p. 3) Discussion, he claims, “puts the students in an active learning mode, challenges them to accept substantial responsibility for their own education, and gives them first-hand appreciation of, and experience, with , the application of knowledge to practice.”

The question I would like to address in this paper is, How can we apply the six research-established conditions for learning to fairly traditional classroom formats to create learning-centered classrooms?

Activity: Promoting Active Learning

Perhaps the single most important concept to emerge from both neurological and cognitive research in recent years is that people build their own minds by actively constructing the mental network that connects and organizes bits of information. The brain follows the principles of Darwinian competition; it grows strong through the constant activity of making neural connections, and it systematically eliminates connections or synapses that are seldom or never used. “Use it or lose it” is demonstrably true when it comes to developing the capacity of the mind to learn throughout life.

Cognitive scientists reach essentially the same conclusions as the neuroscientists about the necessity for active learning. They

build their theory on the concept of the schema as a working mental structure, constantly changing and growing. Each new event, filtered by perception into the schema, is organized and connected to the existing structure to create meaning. One of Piaget's remarkable contributions to our understanding of learning is that children's cognitive structures are not preformed but rather are constructed as a result of their own mental activity. They quite literally "build" their own minds. (See Cross Paper # 3, 1999 for further discussion)

Learners who are actively working their brains to create complex neural connections are building learning capacity. The task of educators is to provide the conditions conducive to growth. People interested in physical fitness today select the gym that provides the best conditions for "working out." They are well-aware that the hard work of developing physical fitness must be done by them, but they expect the gym to provide knowledgeable trainers, proper equipment, support and encouragement, and the feeling of belonging to a community of physical fitness buffs that share their interests and commitment.

Ah, would that colleges shared that image! Actually, the national craze for physical fitness is relatively new, and it is only recently that a knowledgeable constituency has grown to demand the services and conditions that promote physical fitness. Fortunately education is now receiving high recognition among the general public as well as among politicians and employers, and interest in how to provide the conditions that promote learning is at an all-time high. There is a surge in new equipment and new

pedagogies, and interest is growing in some of the more active pedagogies such as learning communities and collaborative learning. Nevertheless, most faculty continue to use lecture/discussion as their primary teaching method. It is the bastion of all teaching in American colleges and universities, and there is really nothing wrong with it -- IF it is used with the conscious and express purpose of promoting learning. The problem is that most teachers simply teach as they were taught, telling what they know, and hoping that students will be interested enough to learn.

Experts agree that leading a productive discussion is among the most challenging and demanding tasks of an instructor—and one of the most satisfying when things go well. Davis (1993, p. 63) observes that “A good give-and-take discussion can produce unmatched learning experiences as students articulate their ideas, respond to their classmates’ points, and develop skills in evaluating the evidence for their own and other’s positions. Initiating and sustaining a lively productive discussion are among the most challenging of activities for an instructor.”

Fortunately, there is ample advice and numerous practical tips in the literature on what to do about the problems that worry teachers most – what to do about student apathy or lack of responsiveness, about the student who talks too much or too little, about arguments, or nit-picking, or tiresome repetition. (See, for example, Davis, 1993; McKeachie, 1994). While these are legitimate concerns, and practical tips are certainly helpful, especially for inexperienced teachers, these annoying surface

problems are really symptoms of a discussion gone awry. I want to address some deeper challenges to the design of discussion to produce learning.

Too many well-meaning teachers embark on class discussion with an overly simplistic goal of getting students to participate. Participation is a necessary, but hardly sufficient condition for learning. Some teachers rationalize their lack of planning by thinking, "let's just see where the discussion takes us." Occasionally— but very occasionally -- that is a legitimate treasure hunt. More often students are left tramping through the underbrush of academic density, without a clue about what they are searching for or how deep the treasure might be buried.

Leading a productive discussion takes planning. It is often more work than a lecture because there needs to be a strategy for dealing with the unexpected as well as the expected. Just as a basketball coach goes into the game with a strategy, flexible enough to change if conditions demand it, but firm enough to reach the goal, so a teacher needs to have his or her eye on the goal. Specifically, what is it that students are expected to learn from the discussion? I have heard teachers emerge from a classroom discussion perfectly happy that the discussion was lively and spirited. Yet basketball players running energetically up and down the court with a lot of enthusiasm and broad participation, but without the goal in mind, are no more likely to win the game than students are to learn from a discussion that is spirited, but off the mark and seemingly headed nowhere. Yes, of course, one wants spirit, activity, and enthusiasm, but the challenge of the learning-

centered classroom goes beyond that.

I remember vividly a lesson about goal-directed discussions that I learned from participating in a faculty seminar at Harvard on the discussion method led by Professor Christensen. The seminar was very popular with faculty across all departments, and there was always a waiting list of professors of all levels of experience wanting to learn more about effective teaching by the discussion method. Professor Christensen was inevitably the kindly, sensitive master teacher, subtly and skillfully directing the discussion.

So we were considerably surprised one day, and some of us a bit upset, when he ignored a young history professor who had had his hand up for some period of time, while others who had waited less time were immediately called on. It was certainly not that Professor Christensen did not see him, nor was he being ignored because he talked too much or made irrelevant comments. Why then did the instructor not call on him? When everyone had had a chance to become thoroughly puzzled about the matter in their own minds, Professor Christensen addressed our concern. "Yes," he said, "I saw his hand go up early on, and it remained up through four or five other comments. This was the clue to me that his comment pertained to points made four or five comments back and was unlikely to build on the current direction and move it forward. At this particular point in time, I sensed a forward momentum that I did not want to lose."

Granted, there is a risk in using such a dramatic teaching tactic, but without question, it sparked critical thinking, lively debate, and it is a lesson I remember well 20 years later. But

Professor Christensen knew his students well, he had established a spirit of trust among us, and his example was completely relevant to the lesson about leading discussions that he was trying to teach. In a community college classroom, where self-confidence is more tender than among Harvard professors, teachers would be more likely to move the discussion along by taking the initiative themselves via some of the well-known teacher tactics – asking Mary how she responds to Tom’s comment, introducing a timely new topic themselves, asking who has a different point to add, requiring students to listen to one another by asking them to summarize the point made by the previous speaker. But techniques are just that – devices used to help direct the conversation, but they cannot replace a plan to move toward a desired goal.

If the goal of the discussion is to collect a number of different perspectives, then calling on people in turn seems fair and democratic. But at some point, the discussion has to have direction and a goal. The accepted practice of discussion leaders in classrooms -- and in most of my experience in professional committee work -- is for the leader to call on people in turn. How often has a discussion been robbed of any goal-directed momentum through a discussion leader saying to a sea of waving hands, “OK, first Dick, then Mary, then Ralph, then Sally,” each one making their own point, rarely building on the previous point or even listening to it. It is as if the coach said to the players, “OK, the first time we get within range, Susan will shoot, then it will be Nancy’s turn, and then Alice’s -- without regard to strategic placement of the players or their ability to work as a team, passing the ball to one

another. Since developing teamwork skills is a legitimate educational goal, useful on the job, in civic participation, and as a valuable lifelong learning skill, it is not amiss to teach students how to pass the conversational ball to one another.

Since virtually all of us, as teachers, use lecture/discussion methods at some point in their teaching, it is important that we learn to do it well. Following are some pointers for keeping the discussion on track and getting students actively engaged in thinking and reflection.

Promoting active thinking and reflection in lecture/discussion classes.

- ❖ It is hard to launch a discussion if students haven't read the assignment. Try formulating a few questions as part of the assignment so that students have a chance to think about them. I found in my own teaching that preparing good discussable questions was a powerful learning experience -- for me! Why not let students learn by preparing questions that they would like to hear discussed in class? As further incentive, students might be asked to lead the discussion on their question.
- ❖ Provide adequate "wait" time for students to formulate responses. You might suggest that students take a few moments to jot down some key notions in their response. This

technique is especially helpful in getting participation from some of the more reticent students.

- ❖ Interpretive questions are more likely to gain interest and participation than factual questions. Instead of asking, "What is the definition of _____ , try "How does the idea that _____ apply to _____? (McKeachie, 1994, p. 38)
- ❖ Try to avoid reaching agreement too soon. Much of the point of discussion is to expose students to different perspectives and ways of thinking about the question.
- ❖ Ask for a "One-sentence summary" occasionally. This technique gives time for reflection and helps students "chunk" and summarize information. Students write a single, grammatical sentence answering the questions, "Who does what to whom, when, where, how, and why?" (Angelo & Cross, 1993, p. 183-187).
- ❖ To improve note-taking as well as reflection, a teacher may stop during a lecture to ask students to summarize their notes to a neighbor, who then adds to and corrects the summary. After a few minutes of sharing, each student is encouraged to take something from the other's notes to improve his or her own [Millis, 1998, p. 114)

Cooperation and Interaction.

Two of the conditions that research establishes as important in student learning are sufficiently similar that I am going to combine “cooperation” with “interaction.” Both involve student-to-student relationships. They are not the same thing, however. To oversimplify, cooperation is to act with others, whereas “interaction” is to act on others, reciprocally. Collaborative learning deliberately promotes argumentation and consensus building. “Improved thinking” results, claims Bean from “the practice of formulating hypotheses, arguing for their adequacy, and seeking a reasoned consensus that all group members can support.” (Bean, 1996, p. 150).

One can always tell a hot topic in academe when the semantic wars begin. There has been on-going discussion about the differential roles of “cooperation,” “collaboration,” and interaction,” in learning for a number of years. Earlier authors used the word “cooperative” to distinguish it from “competitive,” contending that students supporting and helping one another showed superior learning to students competing with one another for their place on the grading curve. Then came the differentiation between “cooperation” and “collaboration.” Where cooperation suggests harmony in accomplishing group goals, collaborative learning implies challenges and assuming responsibility for one another’s learning. While a cooperative learning group could ignore a non-contributing member, a collaborative learning group would have to help that person learn. Advocates of collaborative learning insist that students be evaluated individually, but that they also be

held accountable for the achievement of group goals. Thus, students are graded not only on individual performance, but on group performance as well (Slavin, 1996).

This practice of holding people responsible for individual as well as group performance is pervading industry as well as education. Time Magazine reports that “companies have shifted how they evaluate and reward people. Increasingly, they reward the pack . . . The new rule [in some companies] is that no one wins unless the company overall hits its targets. . . Once the company makes its numbers, it creates a kind of prize fund and divides up the dough according to how a team performed and what each member contributed.” (Time, July 2001, p. Y3). Thus, in addition to the learning benefits to be derived from collaborative learning, there appear to be advantages in giving students experience with collaboration in preparation for their futures in the workplace

“Interactive learning” is a necessary part of collaboration. It requires student-to-student conversations in which students challenge one another to think critically, analyze, and consider alternative points of view. Today’s emphasis on student diversity is considered a special advantage in interactive learning. It requires students to respond to different backgrounds and perspectives with respect and thoughtful consideration.

What is important about all of these definitions of cooperation and interaction is that they require student-to-student conversations and challenges. But experts caution that the opportunities for interaction must be carefully structured. Millis and Cottell, caution that “When structure is lacking or haphazard,

which may have occurred too often in students' previous group work experiences, students wander off task: uncommitted learners revel in the opportunity to 'blow it off,' as more serious students chafe at the wasted time and question the validity of small-group work." (p. 70) Experienced teachers advise that planning for group work involves "purposefully designed and sequenced tasks" (Bean, 1996,p. 151).

The point is that it is important to keep in mind that learning is the goal in the learning-entered classroom. It is enhanced in a challenging yet supportive environment that keeps students aware that the purpose of their interactions is to help one another do their best learning.

Interactive group learning can involve as few as two students comparing notes for just a few minutes following a lecture or reading assignment, or it may involve longer task assignments to a small interactive group -- usually consisting of 4 to 5 students. (See Cross, 2000) Many techniques that call for critical thinking, argumentation, analysis, marshalling of evidence, and the like may be used in a variety of situations from large lecture to individual writing assignments, but they are especially effective when students challenge their peers. A sampling of some techniques for involving students in productive conversations with their peers follows:

Techniques for Promoting Interactive Learning

- ❖ Learning cells. Students learn in pairs, alternating between asking and answering questions about a reading assignment.

One student begins by asking the first question. After response by the second student, the first student offers corrections and additional information. Students alternate in asking and answering questions. A variation is for students to read different assignments and “teach” their partner the essentials of their readings, checking for understanding by asking questions. (McKeachie, 1994, p. 146-7).

- ❖ **Think-Pair-Share.** Think-Pair-Share allows students time to organize information and articulate their thoughts after listening to a lecture or completing a reading an assignment. Students think for a few minutes about a question posed by the instructor and then discuss their thoughts with a peer. Together, they create a joint response by building on each other’s ideas. Responses may be shared with the whole class. (Millis, 1998, p. 72-78).
- ❖ **Believing and Doubting.** Students in small groups are asked to generate reasons for arguments supporting or doubting a controversial statement provided by the instructor. (Bean, 1996, p. 157). A similar technique known as Pro and Con Grids (Angelo & Cross, 1993, p. 168-171) is presented as an individual assignment to promote and assess critical thinking, but it also makes a good assignment for small groups which usually contain students with differing perspectives.

- ❖ **Case Studies.** Case studies are among the most popular and enduring methods for getting students involved in problem solving and team work. Their use has spread well beyond professional fields such as law and business to include the humanities and especially writing. (See Bean, 1996). A well-designed case requires analysis, problem solving, decision making, and justification. If a case involves different roles, students may be asked to present arguments from their assigned perspective.

Diversity.

Diversity has become a major issue in higher education. The courts have been debating whether affirmative action is really an access issue or a quality of learning issue. A Michigan court recently rejected the defense of affirmative action as a way to right decades of wrongful discrimination, but defended it on the grounds that diversity of the student body results in a better education for all students. In an urgent call for more research on the benefits of diversity, John Friedl (1999, p. 45) says that “the best chance colleges and universities have for overcoming legal challenges to racial preferences in admissions is to demonstrate that their policies confer educational benefits on all students, majority and minority alike.”

We in education, however, are largely responsible for making it hard for the courts to defend diversity as a learning opportunity for all. The research evidence for better learning with increased diversity is indicative, but frankly, it is not strong. I suspect that it

is not strong, in part because we have made such poor use of diversity to promote learning. Rather than regarding diversity as a learning opportunity to be utilized, we regard it as a problem to be solved. We have given too much attention to the mere presence of obvious marks of diversity – skin color, age, gender, disability, etc.—and not enough to diversity of background, perspective, and opinion. A view book showing students of color mingling and strolling together on campus often has to be staged for the photo-shoot. While students of color sitting next to one another in class represents societal progress, it has little effect on learning without conscious and deliberate effort to challenge students to interact with one another to produce critical thinking, problem-solving, flexibility, tolerance, values, and all the other things that we talk about as outcomes of a good education. Were we to utilize diversity fully for its educational benefits, there is not much doubt that the research would be able to demonstrate the educational advantages of diversity for all students.

Techniques for Capitalizing on Diversity

- ❖ Students often have very different perspectives on the role of education in their lives. Older students “expect” something different than younger students; first-generation students may have very different perspectives from students who have been exposed to higher education via parents or siblings; minority and immigrant students may have different expectations from majority students. Try engaging students in conversations

about what they want out of college or more specifically out of a given class. Students might be asked on the first or second day of class to jot down two or three learning goals for that class, and then to discuss these with peers. (This is a group-based modification of Goal Ranking and Matching discussed in Angelo and Cross, 1993, pp 290-294).

- ❖ Points of view – Students might be asked to write a dialogue between characters in a novel or reading assignment with different points of view. A slight variation is to give a reading assignment presenting a controversial viewpoint and ask students to be prepared to tell why they agree or disagree. (Light, p. 49)
- ❖ Targeted Assignments. As appropriate to the discipline, teachers can do much to develop topics or term papers that explore different cultural contributions and perspectives. (Davis, 1993, p. 48)

Responsibility.

While many community college teachers are happy when students assume personal responsibility for doing the assignments and participating in class, the new emphasis requires students to assume responsibility for their own learning – in the fullest sense of the word. Just as teachers in the learning college must go beyond “presenting instruction,” so students in the learning college must go beyond “completing assignments.” Research suggests that the best

learners are aware of themselves as learners. They self-assess their understanding and utilize effective strategies to manage their own learning process.

Metacognition is the term used to refer to students' awareness and self-knowledge about their own learning. Good learners are able to watch themselves in the process of learning; they can step back and reflect on how they learn – what is effective and what is not. Sometimes called the “executive function” of the mind, metacognition involves the use of learning strategies such as planning, monitoring understanding, and self regulation. There is evidence that such basic learning strategies can be taught (Pintrich, 1988). While teaching such metacognitive skills is often considered the traditional function of study skills courses, teachers of any subject can foster personal responsibility for learning through some fairly simple techniques.

Techniques for encouraging student acceptance of responsibility for learning:

- ❖ To help students become aware of themselves as learners, a teacher might stop a lecture or discussion briefly and ask students to reflect on what they were doing at the time and how their behavior helped or hindered their learning. Students may be asked to write down any insights they have gained about their own learning. The teacher may collect the papers as short anonymous notes adding to teacher

understanding of learning behaviors. (Angelo & Cross, 1993, p. 303)

- ❖ **Talking Chips.** This technique is useful in making students aware of their responsibility to the group. Students in a small group discussion are each given a specified number of tokens or chips which they surrender when they make a contribution. Students who tend to dominate end up running out of chips while reticent students are encouraged to participate by using the chips piled in front of them. Talking Chips may be most effective when there is a problem with equitable distribution of responsibility. (Millis and Cottell, 1998, pp. 98-99)
- ❖ **Directed Paraphrasing.** In this technique, students are directed to paraphrase part of the lesson for a specific audience and purpose, using their own words. In many paraprofessional and service disciplines, the ability to translate academic information to practical uses is an essential skill. For example, students in a course in ⁹erontological nursing might be asked to explain in one or two sentences what they have learned about hospice care to inform a dying, but still lucid, patient of its possible advantages over hospital or home care. (Angelo & Cross, 1993, pp. 232-235)

Expectations

Expectations is listed as one of the six powerful forces for learning because it is fundamental to student motivation. It is

especially important in community colleges where many students have doubts about their ability to do college work. They enter college and the classroom with low expectations for their own success.

Both teacher and student need to plan for success. Research suggests that tasks where the student's chance of success is about 50-50 are the most motivating – easy enough to offer a realistic chance of success, but hard enough to generate a sense of accomplishment when the task is completed successfully. If a task is too easy; a grade too generous, praise too effusive, students' basic doubts about their own ability may only be increased with the perception that the teacher shares their doubts about their ability to perform well in college. If the task is too difficult, anxiety and discouragement are the result.

For students who lack self-confidence, it is important to demonstrate that success is due to the student's own ability and effort. "Success alone is not enough" says University of Michigan psychologist, Bill McKeachie . "For students who lack a sense of efficacy teachers must not only provide situations where success occurs but also give students opportunities to undertake challenging tasks on their own to prove to themselves that they can achieve." (1994. p. 352). McKeachie sums up the teacher's role in raising expectations and accomplishment in these words, "When students are confident that they have the answers and can achieve their goals without effort, you need to provide challenges; for students who lack confidence you need to provide support and opportunities to show progress and achieve success." (1994, p. 353) (See Cross, 2001

for further discussion of the role of expectations in motivation).

Techniques for raising expectations and enhancing motivation.

- ❖ Quiz Bowl. Researchers agree that moderate ^{competition} completion may be helpful in increasing motivation and engagement, while individual competition often provokes anxiety, resentment and discouragement – especially among those with low self-confidence. To capitalize on the positive aspects of competition, divide the class into teams, with team members consulting on the answers to previously prepared questions – as in a test review for example. (McKeachie, 1994, p. 356)
- ❖ Offer flexibility and choice when possible. Choice (e.g. in papers and discussion topics) gives students a sense of control and lets them choose topics or tasks where they face a challenge with reasonable expectations of success.
- ❖ Pace learning so that each step offers some newness and only a moderate risk of failure. (McKeachie, 1994, p. 353)
- ❖ Have students write out their goals for your cause. Encourage them to self-monitor their own progress, and provide prompt and accurate feedback.

Conclusions

There are numerous routes to designing a learning-centered

classroom. Teachers need to find a fit between methods appropriate to their discipline, their own competence and comfort level, and the successful promotion of student learning. For some teachers and in some disciplines, this means radical innovation, experimentation, and assessment to determine how much and how well students are learning the goals established for the course. For others it may mean experimentation, improvement, and assessment within fairly traditional pedagogies. For all community college teachers, it means that the ultimate criterion of success is student learning. We do know the important correlates of learning. We do know what a learning-centered classroom should look like. Students have the best opportunities for successful learning when they take responsibility for engaging actively in interaction with the teacher and their fellow students in tasks that are challenging and represent a sense of accomplishment.

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