THE CHANGING ROLES OF COLLEGE TEACHERS

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For the past quarter of a century, America has introduced each decade with a new theme for higher education. In the 1950s the theme was academic excellence; in the 1960s, it was equal opportunity; and in the 1970s the emphasis has turned to faculty development and student learning. Each theme has been supported by a set of circumstances that gives rise to and sustains the emphasis.

In the post-war years of the 1950s, the number of people wanting to go to college far exceeded the number of places available. Decisions had to be made, and the nation bet its dollars on selective education that gave preference to young people who already had a head start on learning. College prestige was measured in terms of entering admissions test scores, the number of National Merit Scholars, and the selectivity ratio of numbers accepted to numbers rejected for college admission. Academic excellence, however, depended as much on the ability of the admissions office to select an outstanding class as on the ability of the teaching faculty to create one.

In the 1960s, equal opportunity became the national priority. Supply began to catch up with a demand as community college mushroomed throughout the nation; financial aid based on need became a federal priority; open admissions challenged selective admissions;

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and the rate of college going for high school graduates reached a peak by the end of the decade.

The 1970s opened with dire warnings that colleges may have overbuilt, that a declining birthrate would induce a steady-state, that SAT scores had declined alarmingly, and that the new generation of college students could neither read nor write as well as their predecessors. While some sought to solve the problems through debating the merits of back-to-basics, back-to-grades, back to no-need scholarships, others began to talk about accountability, faculty development, and the improvement of instruction.

We frequently complain that change is slow in higher education, but in the short span of three decades we have had three quite different national priorities. From a goal of academic excellence for the few in the 1950s, we moved to educational opportunity for all in the 1960s. But the 1960s version of equal opportunity stressed the minimal goal of access. The problems of getting previously excluded segments of the population into higher education were so overwhelming that there was not much energy left over for worrying about maximizing the impact of education on the individuals newly received into institutions of higher learning. I believe that the emphasis in the 1970s will move beyond minimal education for <u>all</u> toward maximum education for <u>each</u>.

Education for all is basically an administrative rather than an instructional challenge. The people who were frantically busy with change during the 1960s were college administrators and the administrative officers of federal and state agencies. Financial aid, admissions, recruitment, orientation, and counseling

occur in the administrative offices of colleges, and there is evidence that the practices and procedures in these offices changed substantially throughout the 1960s. In 1970, when I conducted my first survey of community college programs, I found that the overwhelming majority of community colleges had already devised special programs and procedures for helping students gain access to postsecondary education. Virtually no administrative office was doing things as they had done them in the 1950s. But very significantly, I found that the influx of poorly prepared students into colleges had made very little impact on instructional programs up to 1970 (Cross, 1976).

The data showed that the New Students gaining access to college, largely through administrative efforts, had actually been admitted to a buffer zone or a kind of purgatory between the hell of ignorance and the heaven of real college. Most community colleges offered special remedial programs designed, with the best of intentions, to help New Students "catch up", so to speak, with the college freshmen of the 1950s. Remedial courses were typically required for students with skills deficiencies; they were frequently taught by junior faculty members; and they carried non-degree credit or no credit (Cross, 1976). Colleges had changed a little to accommodate the needs of the new learners, but they had protected themselves against massive change by creating the buffer zone of remedial education with courses, teachers, and administrative arrangements that were different from the so-called regular programs. The purpose of the remedial programs was to process the New Students until they were ready to learn what the

regular faculty were prepared to teach.

But then something very interesting began to happen. When I repeated my 1970 survey in 1974, I found that the buffer zone of remedial education was on its way out. The 1974 data showed that required remediation for New Students had dropped from 79 percent of the colleges in 1970 to 59 percent by 1974. Degree credit for remedial courses rose from 32 percent to 53 percent, and new instructional strategies began to make their appearance in the classrooms of the regular teaching faculty. Indeed, the changes that took place in the teaching methods of community colleges were so dramatic that the first half of the 1970s may be referred to as the beginning of the Instructional Revolution. The use of programmed instruction spread from 44 percent of the colleges in 1970 to 74 percent by 1974. The use of self-paced methods rose from 31 percent to 68 percent; peer tutoring from 36 percent to 65 percent; and skills centers spread from 36 percent of the colleges in 1970 to 67 percent by 1974 (Cross, 1976).

These are remarkable changes for an instructional system that hadn't changed much in 300 years. But even more surprising is the discovery that the common element in the changes made to accommodate the masses was the individualization of instruction. Paradoxically, we discovered that mass education is not the inevitable route to the education of the masses. The very diversity of the masses requires the abandonment of group methods that batch students and process them without regard to individual differences.

If higher education is in the early years of an instructional revolution, let us look ahead to see what implications this revolu-

tion has for the future. The first message arises out of the suddenness of the change. My data show that by 1974 the majority of colleges, but not necessarily the majority of classrooms, were offering individualized learning alternatives. A college with one self-paced course, for example, could legitimately state on my questionnaire that the college offered a self-pacing option. That does not mean that the majority of faculty members have had experience with self-paced learning. It may mean, however, that the majority of students are, or soon will be, familiar with self-paced learning. Since the research to date indicates that the individualization of instruction is popular with students, I predict that students who have experienced the freedom and satisfaction of self-pacing will show increasing, and perhaps ill-disguised, impatience with the old-style lockstep classroom which is familiar and comfortable for most faculty members.

The instructional generation gap between students and faculty will be more severe for selective colleges than for open door colleges. Self-pacing has made rapid strides in open door colleges because it offers a solution to the problems of dealing with diversity in an unselected student body. It did not take long for open door colleges to discover that there is no way to work constructively with students reading at the 4th and 14th grade levels without individualization. While there are some quite sophisticated self-paced methods making an appearance in selective institutions, university faculty are for the most part blissfully unaware of the approach of the instructional revolution. They may become aware of it when the graduates of some pedagogically-sophisticated

community colleges make known their dissatisfaction with the rigidities of traditional education. As the first implication of the instructional revolution then, I pose the possibility of a student rebellion in the 1980s directed against the rigidities of instruction in traditional institutions of higher learning.

The second implication of the instructional revolution involves a dramatic change in the roles of teachers. Traditionally, the college teacher has been the center of attention around which all learning revolves. The teacher decides what should be studied, how fast the course will move, and the method by which the material will be presented. The student generally has no voice in learning procedures. If the course moves too fast for an individual, then he falls behind and settles for inferior learning. If the student learns best through a highly structured approach, then he can hope for a teacher -- or sometimes select one -- whose teaching style is compatible with his learning style. But realistically the student may have no recourse to paying her money and spending her time in a course where, for her, learning is a frustrating and depressing experience. It is not really surprising to find that students who deviate from the group norms should be drop-out prone when learning is geared to "average" instead of "real" persons. Why has it taken us so long to realize that education should be individualized for students rather than for teachers? Why didn't we see earlier that it is upside down to expect the immature and inexperienced student to adjust his learning pace and abilities to accommodate the style and abilities of the teacher?

It won't be easy for teachers or for educational institutions to shift from teacher-centered to student-centered learning. But

we are now quite sure that what the student is doing is more important than what the teacher is doing as far as learning is concerned.

The Instructional Revolution started with one small but critically important step toward student-centered learning. It permitted individual students to gain maximum benefits from education by adjusting the pace of learning to individual needs. That small step, however, is the step that sparked the revolution. Self-paced learning and its conceptual companion, mastery learning, are revolutionary concepts because they upset conventional ways of thinking about learning.

The simple formula for mastery learning is that the student must learn a unit to mastery, regardless of how long it takes. This is quite the reverse of traditional education which insists that all students spend equal amounts of time in the classroom but permits them to learn to varying levels of achievement. In traditional education we turn out students who are well educated and those who are not, but we certify that all have spent the same amount of time at the task -- surely a meaningless measure of learning. The conventional grading system does not solve the problem; it just acknowledges that some students learned a lot in the time specified and received A's and B's, while others learned little and received D's and F's. If Bloom and other scholars are correct in their assertion that anyone can learn a subject to mastery if given adequate time and appropriate help, then we have a breakthrough that permits us to provide for individual differences through holding achievement constant (mastery for everyone) and

letting time vary.

The concept of mastery learning raises havoc with habitual ways of thinking about learning, but it makes much better sense educationally than the traditional measuring system. If what we teach is important, then presumably whether students learn it is more important than how long it takes them. Furthermore, if what we teach is related to what a person is able to do with knowledge, then we should certify knowledge by the number of learning units mastered rather than by how much the student learned in a semester relative to his classmates.

Mastery learning has special significance for the education of the nontraditional learners that I have called New Students -- those with poor records of past academic performance (Cross, 1971). Its advantages to New Students are both cognitive and affective. It lays the cognitive foundation for future learning by insisting that one unit must be mastered before the student may proceed to subsequent learning. And it carries an affective message through demonstration to low-achieving students that they too are capable of doing good work. To most New Students, those two critically important experiences are missing from most of traditional education. New Students are perpetually at a cognitive disadvantage in school because they are rushed along to advanced learning without laying the foundation of the more elementary concepts. It is almost impossible to gain anything from a study of algebra without knowing the multiplication tables, and it is difficult to grasp the significance of history in the absence of an adequate reading vocabulary. To the extent that knowledge is cumulative

and sequential, efficiency in learning depends upon mastering each step in turn. Research demonstrates that as children proceed through school, the bright get brighter and the dull get duller as the gap between achievers and non-achievers increases (Coleman and others, 1966). The widening gap is probably due to the efficiency factor in learning. Whereas achievers have the tools and the background to make good use of further education, the future learning of non-achievers is perpetually thwarted by their failure to master fundamentals.

Even worse than the cognitive handicaps wrought by traditional education's notion that everyone should move along with the group, is the affective damage done to young people who are offered no alternative to doing poor work. Rarely do New Students experience the satisfaction of doing school work in which they can take pride. Mastery learning permits New Students, for perhaps the first time in their lives, to do well -- as well as anyone in the class -- at school learning tasks.

While mastery learning has undeniable merit for individual learners, it also has some unsung advantages for the educational system. Mastery learning is the only educational concept that I know of right now that offers a solution to the concern about the erosion of academic standards. If all students master the subject matter, then the charge of lower academic standards for New Students cannot be leveled at egalitarian higher education.

In the strange logic of higher education, however, the very idea that every student in the class can learn a subject to the same high level of achievement is unacceptable to some standards

buffs. If every student studies the learning unit until he masters it, then every student deserves an A -- if by an A grade we mean to certify that the student has mastered the learning task and not simply that he is one of the best in a particular class. A grading curve with mostly A's is completely sound educationally, but it is anathema to those accustomed to thinking of educational results measured by the bell-shaped normal curve. The normal curve, after all, is a statistical tool designed to reflect the result of random processes. If there are no factors operating except chance, then the normal curve is the result. To the extent that purposeful, directed influences are operating, the curve should depart from a chance distribution. Education is not a random process; the outcomes of successful education should push the grading curve away from anything resembling a chance distribution.

Logical as the argument is, custom has made us so accepting of the normal grading curve that teachers who give more A's and B's than D's and F's are looked upon as "soft graders" instead of effective teachers. Many people equate the preservation of the normal grading curve with the preservation of academic standards. Actually, standards are served only when students learn the material. And there is ample research evidence that students do learn the material better under conditions of mastery learning (Cross, 1976).

So far most of the creative energy that has gone into the Instructional Revolution has been directed toward the seemingly modest goal of breaking the lockstep of education with respect to

time requirements. But the challenge of individual differences in learning is more complicated than dividing people into "fast" and "slow" learners. People are fast learners in one subject perhaps, and slow in another, or they learn rapidly by one method and more slowly when a different approach is used. I may learn quickly by being shown, for example, but slowly if I must read a manual of instructions. When we have provided for individual differences in learning rates through self-pacing options, we will face a fresh layer of challenges revealing the need to find methods of instruction that will be optimal for learners with different preferences and styles of learning.

It now seems clear that we are not going to improve instruction by finding the method or methods that are good for all people. By and large, the research on teaching effectiveness has been inconclusive and disappointing because, I suspect, we were asking the wrong questions. When we ask whether discussion is better than lecture, whether TV is as good as a live performance, whether programmed instruction is an improvement over more traditional methods, we find that for that mythical statistical average student, it seems to make little difference how we teach. But when we look at the data student by student, it is clear that some students improve, some remain unaffected, and a few actually regress under various teaching conditions. The very process of averaging the pluses, the minuses, and the non-changers wipes out the message that different methods work for different students. Psychologists are now asking the more sophisticated interaction questions about which methods work for which students.

For the past several days you have been learning about the concept of cognitive styles. For the first time college teachers are exploring the murky depths of individual differences in how students learn. Teachers are well as students, of course, have distinctive cognitive preferences, but researchers are becoming convinced that people can be taught the cognitive processes that are most appropriate to the learning task. We are also newly convinced that teachers, rather than students, should bear the burden of accommodating varying cognitive styles. The more teachers know about student learning styles, the more flexible they will be in moving from teacher-centered to student-centered learning. Research on cognitive style is growing from infancy into adolesence, and your understanding and recognition of cognitive styles should enrich the teaching-learning process for you as well as for your students.

The third implication of the Instructional Revolution moves back into the administrative realm of colleges and universities. It is quite clear that the three sacred cows of higher education -- the credit hour, grades, and semesters -- are doomed to extinction if higher education adopts the philosophy and the methods of individualized education. The semester makes no sense if students are permitted to learn at a pace and through a method convenient and possible for them. Semesters are a symbol of teacher-centered, administration-centered education. They are convenient ways for us to deal with one time frame and one teaching method rather than with the learning needs of 30 or 40 individuals. Fortunately we are now learning enough about instructional design, the preparation

of study guides, and personalized instruction to free us as well as our students from the inefficient bind of the semester. Grades make no sense in individualized learning because comparisons become inappropriate, and there is no cut-off point such as the end of a semester when a decision can be made about how much the student learned relative to his peers. In individualized learning, the cut-off point occurs when the student has learned the material to some agreed-upon criterion level.

If comparative performance over a standard time period becomes useless as a measure of learning, then its replacement is likely to be variable or modular credit in which the student collects educational credits for what he or she knows. While competency-based education makes excellent pedagogical sense, we should not underestimate the political and financial problems associated with it. The implementation of competency-based learning means that some students studying full time for a semester will earn 8 credits while others may earn 20. Why should some people spend longer in college than others, and who is going to pay for that "extra" time? Is equality attained through equal learning in unequal time or through unequal learning in equal time? The ideal of equality has challenged this nation for 200 years, and we are going to contend with difficult problems far into the future.

It appears to me, however, that we cannot make educational progress without looking at learning -- and that resides in the learner. I suggest that the theme for higher education in the 1980s will be student-centered learning as opposed to faculty-

centered teaching or administration-centered access models. But student-centered education is a new world for most of us, and we will need leadership and wisdom to sort out the priorities of the next decade.

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