From a goal of academic excellence for the few in the 1950's, higher education moved to a goal of educational opportunity for all in the 1960's. Although the open access philosophy led to the influx of many poorly prepared students, the teaching methods of the 1950's persisted. Only in the 1970's have college teachers begun to deal with the problems presented by diverse students with varying learning rates and styles. Higher education is now in the midst of an instructional revolution in which individualized, self-paced methods have come to the fore. Although traditionally selective colleges are not yet involved in this movement, as they continue to admit students who have attended community colleges utilizing individualized instruction, they may soon be faced with a student rebellion aimed at self-pacing and other new instructional strategies. As the movement spreads, the concomitant shift in emphasis from "teaching" to "learning" will require major role changes for college teachers; in the 1980's they will be as skilled in the diagnosis and treatment of student learning problems as they are in their disciplines. A final implication of the movement is that the concepts of credits, grades, and semesters will soon be replaced by self-paced competency-based education. (DC)
NEW ROLES FOR 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 is on faculty development and student learning.

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 by entering admissions test scores, by the number of National Merit Scholars, and by the selectivity ratio of numbers accepted to numbers rejected for college admission.

In the 1960s, equal opportunity became the national priority. Supply began to catch up with a demand as community colleges mushroomed throughout the nation; financial aid based on need became a federal priority; open admissions challenged selective admissions; 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. Few gave thought to the larger goal of maximizing learning. I believe that the emphasis in the 1970s will move beyond education for all toward education for each.

Education for all is basically an administrative, as opposed to 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. By 1970, when I conducted my first survey of community college programs, I found that the overwhelming majority had already devised special programs and procedures for helping students gain access to post-secondary education. Virtually no administrative office was doing things as they had done them in
the 1950s. But very significantly, I found that at the time of the 1970 survey, the influx of poorly prepared students into colleges had made very little impact on instructional programs (Cross, 1976). That came later.

The 1970 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. To be sure, 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). The nation, having eased its collective conscience about equal opportunity, settled back to wait for the remedial programs to process the New Students until they were ready to learn what 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% of the colleges in 1970 to 59% by 1974. Degree credit for remedial courses rose from 32% to 53%, 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% of the colleges in 1970 to 74% by 1974. The use of self-paced methods rose from 31% to 68%; peer tutoring from 36% to 65%; and skills centers spread from 36% of the colleges in 1970 to 67% by 1974 (Cross, 1976).

These are remarkable changes for an instructional system that hadn't changed much in 300 years. The common element in these changes is 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 revolution has for education. The first message arises out of the suddenness of the change. My data show that the majority of colleges, but not necessarily the majority of classrooms, offer some new 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 any 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. Ironically, traditional instruction is individualized for teachers rather than for students. Each teacher is permitted to design a unique course that capitalizes on his or her knowledge, abilities, and interests. Students then are expected to adjust their learning pace and abilities to whatever their particular teacher can do or chooses to do.

The tradition of individualization for the faculty is deeply
While many people question the financial feasibility of the individualization of student instruction, for example, few seem to question the enormous expense of the present redundancy of literally thousands of freshmen English courses all over this nation, each custom designed, for better or for worse, by instructors who cast the courses, naturally enough, to emphasize their own interests. What kind of economy is it that supports the design of thousands of separate courses on roughly the same subject while questioning the expense of helping students learn what has been so extravagantly prepared?

The reason for the misplacement of individualization from student to teacher lies in the training of college teachers. Faculty members are trained in the subject matter of their discipline. Most have no training and almost no knowledge of how students learn -- of what used to be known as pedagogy. Teachers in the academic disciplines are masters of content within the realm of their graduate specialty, but they are remedial students when it comes to knowledge about teaching and learning. Naturally then, they do what they know how to do -- work on course content and leave student learning to the students or to the gods. As long as the training of learning specialists is ignored while the training of disciplinary specialists is emphasized, we will have the individualization of courses at the expense of the individualization of instruction.

There is no reason why the individualization of student instruction should not be every bit as professionally challenging as the individualization of course design, but it may require a
painful transition period as faculty are reoriented to new skills and satisfactions. I believe that by the 1980s there will be more centralization of course design and more individualization of student instruction, and it won't cost any more in terms of either money or faculty satisfaction than the other way around. The validity of centrally-designed courses has been amply demonstrated by British Open University and by emerging efforts in this country. But as Toombs (1975) observes, "A first step is to treat the course or segment of a course as an object, not as the personal possession of a single faculty member."

Teachers of the 1980s will become skilled diagnosticians of student learning problems, and they will be more knowledgeable about the structure of their disciplines. It won't be a matter of cramming subject matter content into the skulls of students as much as a question of working in highly skilled pedagogical ways to help individual students with conceptual understandings of the structure of knowledge. And that applies to the vocational specialties as well as to the academic disciplines. Both vocational education and liberal arts education have been justly accused of being narrow and poorly designed to carry students through their rapidly changing world. Factual content is quickly and regularly forgotten. And perhaps that is fortunate, given the rapid obsolescence of "facts" in most fields of knowledge. But understandings, attitudes toward life-long learning, and self-diagnosis of learning strengths and weaknesses are lessons that are long-lasting and worth teaching to young people who will live out their lives adapting to changing knowledge about the world and its people.
Most of today's change in instructional strategy is directed toward breaking the lockstep of education with respect to pacing. But the notion of individual differences in learning extends beyond the simple notion of "fast" and "slow" learners. Students may be fast learners in academic subjects, for example, and slow learners of interpersonal and social skills. Or they may be fast learners by one method of instruction and slow when another method is used. Some students learn quickly when shown how to do something but slowly if they must read a manual of instructions. There is now new research evidence that people respond differently to methods of instruction and that cognitive styles are related to interests and abilities. (See Cross, 1976, Chapter 5 for a summary of research on cognitive styles.)

It is important for educators to learn about the diagnosis and treatment of human learning. Most of the people in charge of human learning today -- the faculty -- are poorly prepared for the task ahead. They don't know how to diagnose learning problems; they don't know how to treat them; and worst of all, they find it hard to acknowledge their ignorance. The traditional role of teacher as expert and authority is being eroded, and most teachers are not prepared to adapt easily to the new demands. It is understandably threatening to have your old role yanked out from under you before you have a new role to replace it.

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 convenient and possible for them instead of in a standard of time convenient for administrative purposes. Grades make no sense in self-paced learning because 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 self-paced 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 knows. We have good reason to believe that when students master elementary concepts of any field of study, their learning efficiency is increased. A student lacking an adequate reading vocabulary is wasting his time and ours in a history course that depends on reading.

While self-paced competency-based education makes excellent pedagogical sense, we should not underestimate the political and financial problems associated with it. The implementation of mastery 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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References
