

EDUCATIONAL OPPORTUNITIES: CHALLENGES AND CHANGES

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This is a strange decade for American education. It seems to separate two vastly different moods. We can look back at the 1950s and 60s and see a period of high optimism, exuberance, and self-confidence in schools and colleges across the nation. The final report of the Carnegie Commission (1973) called these years the "Golden Age of Higher Education." Looking ahead to the 1980s and 90s, many educators, if not downright pessimistic, are at least not optimistic about the future. The years immediately ahead have been referred to as a "time of troubles" by the Carnegie Commission, and they do indeed seem to be full of problems. Not the least of these problems is the successful completion of the task of assuring equal educational opportunities to all segments of the population. No one should undervalue the amount of progress made over the past two decades in gaining access to college for many populations that have been underrepresented in the past--nor should anyone underestimate the amount of work that remains to be done.

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The greatest danger that I see in the new political and fiscal climate is that people, especially educators and minorities themselves, will use declining Federal dollars as an excuse to relax their efforts. In fact, efforts will have to be redoubled, and frankly, I believe they will have to be redirected.

Most of the efforts of the past two decades have been directed toward attaining equal access. And there just isn't any doubt that providing access takes money -- lots of it. Between 1960 and 1980, more than 600 new open-admission, low-tuition community colleges opened their doors to millions of students to whom college had previously been denied. Enrollments in higher education grew by 375 percent, and financial aid to students increased by more than 2000 percent.

Now all that growth is over. In the next 20 years, more colleges will close their doors than will open them; enrollments nationwide will decline, and Federal policy, taxpayer revolts, and strained institutional budgets will reduce the amount of financial aid available from any source. It is not a very happy time to talk about improving access. But access is only a piece of the equal opportunity agenda; while it is true that we can't have equal educational opportunity without equal access, it does not follow that equal educational opportunity exists when equal access does. We have a system of universal access to high school, but as long as students graduate from high school with fourth grade reading skills, equal educational opportunity remains a major challenge. As your conference theme suggests, it is a challenge that will involve change--some of it major change in the traditional

structures of education.

The change that society is calling for now is the improvement of education. That is an enormously complex challenge, but fortunately it need not be as expensive as the massive access agenda of the 1960's and 1970's. Twenty years ago, John Gardner asked, "Can we be equal and excellent too?" We are still struggling with the answer to that question. In the 1960's and 1970's we concentrated on trying to bring about equality thru access; it looks as though we are going to spend the 1980's and 90s joining access and quality.

In the climate of the 1980s, there is the temptation to correct the excesses of the 1960s and 70s with a violent swing of the pendulum in the opposite direction. There are some who, having concluded that we have given open access a good try, would close the door on access and turn now to the reinstatement of standards. That's only fair, they claim, since the proponents of access turned their backs on standards in the 1970s in a single-minded dedication to the cause of equal access. All of us are familiar with the litany of excesses that took place in the 1970s, most of it not related to equal access, but taking a free ride on the access momentum to promote access at the expense of quality education. Requirements disappeared from the curriculum; there was a hesitancy to enforce demands upon students, and inflated grades devalued the currency of college credit. In retrospect, I am convinced that the pendulum had to swing too far in order to accomplish the Number One priority which was to open the gates of colleges to all

who wished to learn. The problem came when we lost sight of the purpose of access -- which was not merely to permit students to enter colleges but to enable them to learn.

We need not make the choice between equality and quality; we can have both. Indeed, it might be said that there is no true equality until each student is offered the right to do his or her best. Sad to say, we have not been offering that right to either high-achieving or low-achieving students. Denial of the opportunity to take pride in one's accomplishments is a serious infringement on educational rights. And where standards have been compromised, students are denied the very basic human right to feel good about themselves and their accomplishments. I am convinced that we can return pride in achievement to education without compromising the gains that we have made with respect to access. But to do so will require major changes in the traditional practices of education -- changes in our most basic premises about teaching and learning.

Education has adapted fairly well to change in administrative procedures. People who were frantically busy with change during the 1960s were those easing the routes of access, primarily counselors, college administrators and the administrative officers of federal and state agencies. Financial aid, admissions, recruitment, orientation, and counseling occur in the administrative offices of schools and colleges. And there is evidence that the practices and procedures of these offices changed substantially throughout the 1960s. In 1970 when I conducted my first survey of community college programs, which bore the brunt of the new social priorities,

I found that the overwhelming majority of the community colleges 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 the influx of poorly prepared students into colleges had made very little impact on instructional programs. (Cross, 1976)

But early in the 70s the tide began to shift. There was marked attention to teaching practices. Teaching methods changed perceptibly as learning laboratories, tutorials, competency-based education, self-paced learning, and media-assisted instruction began to appear on the scene, but there were also efforts made to improve traditional classroom teaching. Between 1970 and 1975, more than a thousand colleges and universities instituted new activities designed to help faculty members improve their teaching (Centra, 1976). I anticipate that pressures will continue to build for substantial improvement in the instructional practices of education. But once it is clear that teachers are doing their best in a system that is ill-suited to the new challenges, we will have to look to the reform of basic educational structures. In the words of Bob McCabe (1978), President of Miami-Dade Community College, "Nothing can be more frustrating than for faculty to develop a well-conceived and economically feasible plan for learning, only to find that the management systems are not designed to accommodate it."

That has been largely the case with individualized learning, which, although it seems especially well suited to today's enormously diverse college population, is perpetually thwarted by such outmoded practices as semesters, credit-hour funding, and faculty-load formulas.

Let me talk first about a method of teaching that holds promise for addressing simultaneously today's concerns about combining quality and equality. Then I would like to talk briefly about an exceptionally promising approach to the implementation of individualized instruction.

Mastery learning may be misnamed, but it is a powerful educational method when quality is the goal and student diversity is the problem. I say mastery learning may be misnamed because most people confronted by the term "mastery" think of scores of 100 on a multiple choice test. But mastery learning is neither so rigid nor so narrow. The concept behind mastery learning is that all students must learn well whatever it is that they are supposed to be learning. Only when students have mastered one unit may they go on to the next. 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. We recognize varying levels of achievement by assigning grades--A through F--thus admitting to ourselves and our students that education has not been equally effective for all.

Mastery learning has special significance for the education of students with poor records of past academic performance. Its advantages to these students are both cognitive and affective. It lays the cognitive foundation for future learning by insisting that one unit must be learned well 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 low achievers, those two critically important experiences are missing from most of traditional education. Low-achieving 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. 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 et al, 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. A school lifetime of doing a job halfway because the student never has the time or the tools to master the task must surely take its toll in feelings of frustration and, by the time they get to college, in feelings of indifference and loss of self-confidence.

The advantage of self-paced learning is that in a completely open system, it permits slow learners to succeed, and it permits fast learners to move ahead as rapidly as their abilities and motivation permit. The problem with self-pacing, however, is that it is difficult to administer in a traditional system structured in standard time frames of a school term.

The semester, or any other time unit with fixed boundaries, makes some assumptions about learning that we know are false. It assumes that the time required for learning is the same for all people and for all subjects. That premise, which is the foundation upon which the present structure of education is built, is so blatantly untrue that we don't even bother to document, with research, our personal experiences. As an undergraduate mathematics major, it was very clear to me that I learned mathematics much more quickly than I learned history, and it was equally clear to me that I was not going to complete a semester of history with the same mastery of the subject matter as my fellow students. The imbalance was greatly exacerbated by the fact that because I was successful in mathematics, I was motivated and eager to spend out-of-class hours on it, whereas my progress in history was such that the history book spent most evenings and weekends in my school locker. The big plus for me in history came at the end of the semester when the used bookstore told me that my history book was worth more money than my math book because it was in better condition. Incidentally, now that I am free to set my own pace, I read history for pleasure--

which suggests that my early distaste for history was not an innate or incurable affliction.

We do know from research that the time people spend directly on the learning task is a critical variable in learning.. We also know that motivation and success are intimately related. We are more highly motivated to do those things that we do well, and this creates an upward spiral in which we become ever more proficient in the areas of our success. Unfortunately, the downward spiral is more often experienced by many underprepared students in school-related tasks. Research shows that low-achieving high school seniors are significantly more likely than high achievers to spend their time in non-school related activities (Cross, 1971). Low achievers study less than their more successful peers, and they are well aware of the discrepancy. Less time on the task means lowered success, lowered reward, and therefore less time on school learning. The downward spiral repeats itself in a self-defeating cycle of low motivation and low achievement.

One of the greatest achievements and also one of the most difficult problems created by our open access to postsecondary education is the diversity of talent that it has brought to the average classroom. There is a rule of thumb that says that the range of academic achievement in a given class of unselected students is roughly comparable to the grade level at which the measure is taken. For example, in the third grade most students will be reading at the third grade level--by definition. But we are quite likely to find some students reading at the second grade and some at the fourth grade level, making an effective span of three grade levels in student achievement. By the time students get to college, that gap has widened so much that it is not unusual to find a span of ten or twelve years in the freshman class of an open-admissions college; some students will have fourth grade reading skills while

others will be reading at the level of an average junior or senior in college. To expect any classroom teacher to deal effectively with that span of achievement under the constraints of group instruction and fixed time boundaries such as semesters, is totally unrealistic. It hasn't worked, and there is very little reason to hope that it will work.

What to do? Most people have no quarrel with the ideal of individualization. They readily admit that if instruction could be geared to the level of each learner, and prescriptions could be designed to address individual academic weaknesses, learning would be greatly enhanced across the full range of student abilities. Their error lies in old-fashioned concepts of individualization that envisage Mark Hopkins at one end of the log and the student at the other. Since, as we are repeatedly reminded, education is a labor-intensive business, tutorials seem totally unrealistic in the light of new fiscal restraints. But individualization need not be labor-intensive, and in these days of truly remarkable computers, it need not be expensive.

Miami-Dade Community College, the fifth largest institution of higher education in the nation, with a credit enrollment of 45,000 students and a majority of minorities is currently individualizing more than fifty college courses. The mechanism for such massive individualization is RSVP, a computer-based instructional management system that is operated by teachers across a wide variety of subject matter from mathematics to English composition to health improvement. RSVP is capable of analyzing student performance by identifying patterns of error in student tests. Instead of merely informing students of total test scores or items missed,

RSVP generates an individualized letter analyzing concepts misunderstood, giving the correct answers along with explanations, and directing students to educational resources and activities that will address their particular misunderstandings. It does this with an infallible memory for the student's learning preferences, work schedule, physical handicaps, or anything else that may have a bearing on the students' learning options.

Both faculty and students have responded with enthusiasm to this effective approach to individual diagnosis and prescription. Learning specialists at Miami-Dade are optimistic about being able to diagnose learning problems quickly, but even more exciting is their realization that RSVP will enable them to use the full range of learning materials. Whereas teachers used to assign one of two or three resources that they were familiar with and could remember without stopping to check, RSVP will enable them to make maximum use of a wide variety of learning materials. It is only necessary for a teacher to analyze the appropriateness of a given prescription once. RSVP will remember, as most of us cannot, to make the assignment whenever conditions warrant.

Even the sophisticated individualization possible with RSVP, however, will not be maximally effective in the traditional educational system which is totally geared to group instruction. Miami-Dade recognizes that problem and is working now under a FIPSE grant to design the administrative structures that will support individualized instruction.

Ultimately, semesters are doomed. The semesters that we take for granted in academia were designed for administrative

convenience, not to enhance student learning. It is impossible to defend the notion that blowing the whistle on learning at an administratively convenient time such as the end of the semester, maximizes learning for either faster-than-average or slower-than-average learners.

It would make sense to give slower learners either more time or less credit if they have not completed the work by the end of the semester. But instead, we indicate through low grades that the learning is incomplete -- an approach that does no one any good. It does nothing to motivate the student or instill self-confidence; it passes students on to more advanced work without providing the necessary tools thereby virtually guaranteeing failure, and it compromises the integrity of education with future employers by turning out functional illiterates. To defend semesters on the grounds of efficiency and cost is to misunderstand the purpose of education -- which is, quite simply, to help all students learn. Somehow, during the 1980s we are going to have to start with the purposes of education and design the practices to support those purposes.

Ultimately, I think we will face up to the challenge of revolutionary change in education practices because we are simply unable to solve today's most pressing problems in the framework of an outmoded organizational structure. But change is complicated, especially conceptual change. Colleges seem to be able to handle procedural change such as changes in electives or modifications in the academic calendar fairly well -- although goodness knows anyone who has ever

lived through either of those changes on a typical campus knows how time-consuming and difficult even inconsequential change can be. But shifting the purpose of education from teaching semester courses to producing student learning is a conceptual change of major proportions. Let me illustrate the complexity of such change through the use of an analogy.

My story is about a furniture company that is organized like a college. Just as education is geared to completing semesters rather than learning tasks, so this company is geared to completing days rather than chairs. It is the day that determines the work cycle of packers, shippers, billers, and all of the administrative officers of the furniture company. Chairs are sent along at the end of each day in states of completion that approximate the normal curve. A few chairs are nicely finished; most chairs have a weak rung or a missing screw here and there; some chairs are missing critical elements such as a leg or a backrest; and a few chairs are nonfunctional because the seat is missing. But the company is organized to produce a large number of average chairs, and its obligation to customers is to label the quality of their chairs -- which is admittedly a different goal from producing quality chairs.

Now one fine day a new president comes to the furniture company. It is her notion that the goal of the company is to turn out quality chairs. To do this she realizes that the whole organization will have to be redesigned. Completed chairs will henceforth be the goal, and chairs will be sent to the next station

when they are completed rather than in various states of completion at the end of each work day.

Well, when the new plans were announced, there were massive complaints throughout the furniture company. The first to complain were the graders, and their complaints were numerous. In the first place, chairs would arrive steadily throughout the day, when they were complete, instead of 30 at the end of each work day. Even though it was perfectly possible to register each quality chair as it came along, graders had been batching for so long that they really believed that it was less efficient to maintain a steady pace throughout the day than to cope with their present peaks and valleys of workload. The inspectors were the next to complain. Having 30 chairs all at once, they said, permitted them to make comparisons so that they could tell a good chair from a bad one and thus fulfill their responsibility to the customers to clearly label the relative quality of their chairs. Then too there was the problem that inspectors could not be expected to make a new test for each chair as it came along, but if they used the same test continually, the word would be passed along and soon everyone would discover the criteria for grading chairs. Eventually everyone would be able to produce quality chairs, and that wouldn't be fair. It is a little hard to understand why it would be unfair to make known the test used by inspectors to grade the chairs, but I think it had something to do with straining public credibility by producing too many good chairs. As everyone knows,

most chairs produced by any given company must be average -- otherwise you have inflationary standards.

The next problem in the reorganization of the furniture company was a policy issue that was presented to the Carpenter's Senate for resolution. Since some chairs required more work than others, either because missing parts had to be individually tailored or because some woods were harder to work with than others, some chairs would cost more to complete. The question was, how could they justify spending different amounts on different chairs, especially when there was no assurance that the most costly chairs would bring the highest prices in the market place? While the independent consultant pointed out that in the current market, incomplete chairs were not selling at all well and that in the long run the extra money required to complete chairs would be more than justified because chairs could be used rather than assigned to the scrap-heap, the simple fact was that most carpenters didn't like to work with difficult chairs because they usually required more ingenuity and longer hours. And so the Carpenter's Senate passed a fine-sounding resolution about the justice and fairness of the old system which gave equal amounts of time to each chair, but conveniently overlooked the fact that equal time often resulted in unequal chairs.

Despite my tongue-in-cheek analogy, I remain optimistic that we can change education and that our practices will become more consistent with our new purposes. We must, however, face squarely

the fact that until we offer each student at each level of education the opportunity to do his or her best work, we will not have provided equal opportunity in this nation. Now is not the time to relax our efforts, Rather, it is the time to renew our commitment and dedication to assuring that each student receives the best education that it is possible to provide.

In conclusion, I believe that we can have equal educational opportunity in this nation, but it will take change, creativity, productive inspiration, cooperation, and most of all the conviction that equal access and quality education are necessarily compatible goals for the 1980s.

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