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ABSTRACT

The future of higher education, especially that of the community college, is discussed. The role of the community college in advancing new concepts--such as open admissions, equal opportunity, and community involvement--is recounted. The development of higher education in the United States is traced, and problems created by the recently instituted policy of open admission are examined. The heterogeneity of students necessitates a change in instructional practices that are based on a very homogeneous population. The development of effective and inexpensive individualized instruction is proposed as the solution to the problem of student diversity. Modified schedules to accommodate adult learners, greater learner participation, peer tutoring, and cooperative learning projects are all modifications that will better meet the economic and academic needs of the student. Technological advances facilitate individualization, both in communication to students and in instruction, and teachers need to reexamine their roles as educators in the future. (PHR)

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THE NEW FRONTIER IN HIGHER EDUCATION: PIONEERS FOR SURVIVAL

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Your theme for this institute is a provocative one, reflecting very well the ambiguous feelings in community colleges these days. The first phrase, "The New Frontier in Higher Education," sounds as though it came right out of the 1950s when community colleges were exuberant, expanding rapidly, and infused with a missionary zeal for bringing education to new segments of the population. The second phrase, "Pioneers for Survival," is more like the mood of the 1980s, full of threat, fear, and a back-up-against-the-wall fight for survival.

Several images come to mind when I try to combine those two very different moods. One is that of a brave band of pioneers who adventure too far from the civilization that they know and, cut off from support and familiar terrain, are totally consumed by the fight for their own survival. In this image, the pioneers have little energy left to think about where they were originally headed or whether anyone is following them. They are not really blazing a new frontier, with a feeling that their vision and bravery represent noble, high human purpose. Rather they are fighting for their very lives with something more like animal instinct for survival. That image may be a little overdrawn,

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but there are people in higher education these days who feel like beleaguered pioneers for survival.

The second image that occurs to me as I contemplate the ambiguities of your theme is that of pioneers, determined to get where they are headed, but with realistic awareness of the dangers that lie before them. Their minds are obsessed, not so much with survival for its own sake, as with the importance of the trail they are blazing. These pioneers, like those in the first image, are far ahead of their support group, but instead of hoping that others will catch up with them in time to save their lives, they are concerned about making the trail safe for others to follow and assuring that it leads to the promised destination.

Of these two images, I much prefer the second. It is not only more optimistic, but I think it is more realistic because I doubt very much that many community colleges are seriously threatened with extinction. Institutional survival is not really the issue for community colleges. The survival of an ideal may be threatened, but only if community colleges themselves lose sight of the original destination in the belief that individual survival is their first priority. Whether the new generation of community college pioneers are just hacking around in the underbrush or really know where the new frontier is remains to be seen. But many of you in this room are the second generation of community college pioneers, and so I welcome the opportunity to share my ideas about the new frontier with you.

When John Scigliano invited me to keynote this conference, he sent me a copy of Frederick Jackson Turner's brilliant analysis of the significance of the frontier in American history. Turner's point was that as the frontier advanced westward, conditions at the edge of the movement were essentially primitive, requiring totally new responses that were uniquely American rather than a simple transplanting of familiar European culture to the new scene. Application of that thesis to the community college movement suggests that community colleges must develop totally new responses, appropriate to the new frontier in American higher education. That will entail a significant departure from the practices and attitudes of traditional higher education, and it will result in a distinctive community college character, analogous to Turner's description of the western frontier in shaping a distinctive American character. In 1894 Turner wrote,

"The frontier is the line of most rapid and effective Americanization. The wilderness masters the colonist. It finds him a European in dress, industries, tools, modes of travel and thought. It takes him from the railroad car and puts him in the birch canoe. It strips off the garments of civilization and arrays him in hunting shirt and the moccasin. . . . At the frontier the environment is at first too strong for the man. He must accept the conditions which it furnishes or perish. . . ."

The message in Turner's historical analysis, when applied to today's community colleges, is that if community colleges wish to conquer a new frontier, they must do so on its terms or perish. The alternative, I suppose, is to decide that the frontier is too dangerous or not worth the effort and revert to the comfort and security of the more familiar traditions of higher education.

The obviously unworkable solution is the compromise that would suggest that community colleges can conquer the new frontier in the comfort and security of accepted traditions--a situation roughly analogous to hunting and trapping in a powdered wig instead of a coonskin cap.

The community college leadership is in a moderate state of disarray today because the new pioneers are not completely sure that the frontier is worth conquering. Thus before we go much further, we better have some clear idea of what the new frontier is and whether it is worth pushing on against mounting difficulties.

The community colleges have opened up a new frontier in higher education on many fronts, among them open admissions, community involvement, comprehensive curricula, and teaching as first priority over research. If you stop to think about it, all of those distinctive characteristics of community colleges are looked upon as not quite top drawer by traditionalists in higher education--much as some traditional Europeans to this day consider some of the most distinctive characteristics of American culture somewhat lacking in old world respectability. Viewed from the comfortable familiarity of an old established environment, I suppose any frontier looks barbaric, but it also contains an excitement and adventure not present in established environments. It takes a certain kind of rugged individualist to conquer a new frontier. One cannot be worried about what the folks back home think about the new behaviors necessary for survival on the frontier. The American pioneer who was constantly looking backward was quite likely to step into a gopher hole or much worse as the frontier pushed westward.

So let us look ahead this morning to see if we can define the new frontier and the tools and behaviors necessary, not only for survival, but for advancing along the frontier. Earlier I mentioned some characteristics of the community college frontier--open admissions, equal opportunity, community involvement, comprehensive curricula, emphasis on teaching. Those distinctive characteristics are not just an assorted collection of new things to do in higher education. They are the essential tools of life on the frontier of open admissions. They are the visible components of an amazingly consistent underlying philosophy of education. At the heart of that philosophy is the conviction that everyone can learn and that society needs to teach all of its citizens whatever they need to know to live the good life. In the abstract that sounds like a pretty prosaic new frontier. That frontier, after all, was new in the days of the original frontiersmen when the common schools were established in the conviction that the children of the common people could learn and that it was the obligation of society to teach them. But that frontier has been the moving edge of education throughout history, not only in the United States but throughout the world. The frontier of reaching out to include ever-broader segments of the population in formal educational activities has advanced continuously without a break for hundreds of years, and there is no indication that it will suddenly stop or change direction now.

The egalitarian frontier of education moves along both vertical and horizontal axes. The vertical extension is represented by the consistent movement of universal access to elementary school, then to high school, and most recently to college. In our time, incredible progress has been made along the vertical frontier, a fact vividly documented in the statistics of the Bureau of the Census. In the time period with which most of us are personally familiar,

that is the generations represented by our parents, ourselves, and our children, the frontier moved from 45 percent of those in our parent's generation completing high school, to a 66 percent completion rate for our generation. For our children's generation, the high school completion rate is 84 percent (Bureau of the Census, 1977). The new vertical frontier is universal access to two years of college.

The debate over the desirability of universal access to postsecondary education started with studies and commissions charged with determining how many people could profit from a college education. The first study group came up with the magic figure of 29 percent; some years later the Truman Commission thought 49 percent was more likely. Today we are likely to be somewhat amused by the naivete of commissions that assumed that they could define what was meant by "profit from a college education." That, of course, depends on what the college is teaching--which might be anything from cosmetology to Greek philosophy--and whether it is relevant to the goals of the students taught.

The horizontal frontier of egalitarian education is illustrated by the expansion of higher education to new segments of the population. The first colleges in this country were small, collegial communities, limited in curricula and serving a very small constituency who came largely from what would be called "good families." By the mid-1800s, the land grant institutions represented the new educational frontier. With greatly expanded curricula and

a mission to broaden a college education to serve the children of farmers and factory workers, the land grant institutions forged an entirely new culture, suited to life on the frontier. Their educational pragmatism was very different from the colleges of the past, and some people steeped in the tradition of the more aristocratic liberal arts colleges, found the new land grant frontier just a bit crude. Almost exactly one century later, the community colleges came along, pushing with renewed vigor the egalitarian frontier of higher education. Unlike the aristocratic colleges of the 18th Century which were largely self-selective or the land grant colleges which became institutionally selective, the community colleges were not selective at all. Life on their frontier was not completely acceptable to old world higher education, but once again a new culture had to be built for life on the advancing frontier.

The open admissions frontier was opened in American higher education by a small but dedicated band of frontiersmen, many of whom are now retired or no longer living. Some of the excitement and spirit of adventure generated by opening a new frontier are gone. Whereas the original pioneers never knew what lay beyond the frontier because no one had ever preceded them, second generation pioneers can see only too clearly the obstacles of subsistence rations and disputed turf that lie on the visible frontier. The simple fact is that living on the new frontier is frequently more difficult than opening it. In the case of the community colleges, it is far easier to open admissions than to teach the students that enter as a result. Here I refer not just to New Students with low academic skills, but rather to the diversity of student backgrounds and goals inherent in the open admissions concept.

It is not very easy to teach a group of 18 year olds with fifth grade competencies in reading, but it is far easier to teach a homogeneous group of even very poor students than it is to teach a heterogeneous mixture of students ranging from very weak academic preparation to very strong. The challenge of open admissions now lies, not primarily in developmental studies programs, although that is clearly part of it, but rather in dealing effectively with educational diversity. That I submit is the new frontier in higher education. It requires totally new tools, some good strong leadership, and a spirit of adventure. American higher education is going to have to conquer that frontier, and it is going to be as inappropriate to transplant traditional practices in higher education to this new frontier as it was to transplant European culture to the westward frontier of America.

There is a rule-of-thumb that says that the range of academic ability in the classroom increases by approximately one grade level for each grade advanced. That would mean that third grade teachers should expect a three grade level range, with some children with second grade skills and some performing at the fourth grade level. In the sixth grade there are apt to be six years of difference in student abilities in a given classroom. In the community college, it is quite possible to see a twelve grade spread in academic achievement, from let us say fourth to sixteenth grade levels in mastery of the basic skills. That is not a range that any classroom teacher knows how to deal with, and the situation is going to get much worse as adults from all walks of life enter the learning force. There is good agreement among research studies that diversity continues to increase with age, at least up to age 50 or 60. A representative sample of 50 year olds will show greater variability in learning ability than a representative sample of 20 year olds (Knox, 1977).

As we advance toward the learning society, the frontier that must be conquered is the diversity of the learning force. Unfortunately the traditional practices of education are totally inadequate as tools for this new frontier.

The structure of our current education was designed for homogeneity rather than diversity. The entire system rests on group instruction with fixed time boundaries. The assumption is that all students can complete the same work in the same amount of time. That assumption, while not true, is at least not ridiculous in the lower grades where the ceiling of accomplishment is not very high--or in moderately selective colleges where the floor can be raised a little to narrow the range of academic background. But group instruction, rigidly confined to semesters, is not working, and I think it will not work given the academic diversity of community colleges today.

So far, open admissions community colleges have attempted to deal with their diversity through adapting tools of traditional education to their needs. Except for some exceptionally well-designed programs, most developmental instruction does not usually renounce group instruction and fixed time boundaries. It simply tries to establish smaller, more homogeneous groups, with a restricted range of ability, so that the old tools can be used by teachers on the new frontier. Most old tools, applied to a new task, aren't very adequate, but their very familiarity works as a temporary measure until better tools are invented. What we ought to be talking about is how can the community colleges develop the tools appropriate to the new frontier--without, it should be added, calling on the folks back home for money to create the new tools. I make no claim to being the patent medicine salesman who seemed always to be a fixture on the early American frontier,

with his elixirs and promises for quick cures. But I do think there are some tools that can be created by the pioneers of diversity in higher education that are more appropriate for work on the new frontier than the tools we have been handed by traditional education.

Since I believe that the new frontier in American higher education lies in providing each student the best education possible for that student, I believe that we are going to have to develop effective and inexpensive ways to individualize instruction. Ultimately I think the fixed time boundaries of semesters or terms of traditional education will have to go. They cannot be defended on any pedagogical grounds, and even their presumed economic advantages are crumbling in the face of student diversity, new technology, and improved concepts of teaching and learning. I have developed that thesis thoroughly elsewhere (Cross, 1978), and I will not repeat it here today. I do want to say, however, that for the real pioneers among you, there is much excitement and adventure, and I think ultimate satisfaction, to be won on the frontier of the individualization of education through the abolition of fixed time boundaries. There has been some exploration of the territory that lies beyond the fences of traditional education, and advance scouts indicate that the introduction of individualized pacing permits many more people to learn to high levels of achievement than does the group pacing of traditional education (Bloom, 1976). The problems that are holding up the advance of individualized education, which I think is ultimately inevitable, are not pedagogical barriers, but administrative barriers of funding, credentials, and grading.

I think those administrative barriers are straining under pressure from the adult learning movement. There is a special urgency now to experiment with new schedules for adult learners--ranging all the way from the minor modifications illustrated in evening and weekend colleges to the revolutionary concept of offering college credit for learning done outside the auspices of any college. As soon as we begin to think of education as a competency of the learner instead of a course offered by the college, the fixed time boundaries of higher education are doomed. It is already the norm rather than the exception for colleges of all kinds to grant credit if students can demonstrate on a test that they learned as much through a method of their own choosing as students taking a semester-long course on campus. It is already possible for adults to earn associate and bachelor's degrees completely outside the fixed time boundaries of traditional education. Indeed in 1976, there were over 200 accredited external degree programs in this country, granting degrees to some 54,000 adults (Sosdian, 1978). Most of those adults earned their degrees outside the fences of semesters or terms. I think the movement will grow because it makes sense. But before it can become widespread, there will have to be breakthroughs with respect to funding and credentialing and faculty development. My prediction is that major breakthroughs will occur on those fronts before the turn of the century, and when they do, education will take a quantum leap into the future.

In the meantime, there is the question of how to live on the frontier of student diversity. We have some good tools for life on the frontier that we are not using very well, and other tools that are under development and will benefit from the complementary cycle of development, application, and evaluation.

The first underutilized tool on the open-admissions frontier is students themselves. Students can, to everyone's advantage, assume more responsibility for their own learning. If there is one thing we have learned from the research on learning, it is that the person who does the work is the person who does the learning. In the jargon of psychology "time on task" is the most significant factor in learning, and that means that learning activities should be designed to engage the active participation of the learner. That in turn requires that learners know the destination, i.e., the expected outcome of the learning unit, that checkpoints be provided to help them gauge their progress, and that it be clearly understood that the responsibility of the teacher is to facilitate learning. It also requires that the learning task be set realistically for the level of ability of the learner.

Those requirements are not met in the usual classroom. All too often the teacher is more actively engaged in the task than the students; the destination may be known by the teacher, but students usually know only the ground to be covered; and given today's diversity, learning tasks are often too simple for some students and too difficult for others.

I suggest that far more use be made of learning materials developed to take advantage of the new knowledge in instructional design that calls for maximum activity on the part of the learner. The use of class time primarily for the dissemination of information by the teacher is pedagogically ineffective, and it is also economically inefficient. The major expense of traditional education currently goes into subject matter presentation by teachers rather than into learning for students. Most faculty are still struggling to design

their own materials and are understandably disappointed and frustrated when there is no time or energy left over to deal with the diversity of individuals trying to learn their course. Straight presentation of subject matter should probably be done out of class, through multimedia materials that are self-pacing, self-evaluating, and self-propelling, if possible. Class time should be reserved for quality human interaction between teacher and students and between students and students.

This leads to my second recommendation which is that community colleges should be making far more use of other students in the educational process. The advantages are many: In the first place, peer tutors have demonstrated their usefulness in dealing with diversity in learning ability in the community college. Second, peer tutoring is an outstanding learning experience for the tutor. There is probably no better way to learn something than to try to teach it to someone else. Tutors should be trained and should receive full academic credit for the kind of learning that takes place in the tutoring experience. That learning is probably more useful in both careers and personal growth than much academic learning that automatically receives credit simply because it always has. Third, community colleges with their commuting clientele are finding it harder and harder to meet the need for human contact and interaction in education. Commuter campuses, especially, need to move to a more effective mix of self-directed study and interpersonal interactions.

The traditional classroom has a very ineffective mix; there is little student-to-student interaction and also little independent learning action on the part of the learner who spends the major portion of class time passively watching the teacher in action. Finally, traditional schooling is still geared to the reward of independence, while the labor market has shifted to demanding skills that enable people to work cooperatively with one another. Almost no one, not even the proverbial Ivory Tower researcher, works independently anymore, but traditional schools do very little to prepare students to live in our interdependent world. More people lose their jobs because they lack the ability to work cooperatively with others than because they lack job skills. Yet education rarely assigns cooperative learning projects. Worse yet, we are likely to punish cooperation by regarding it as cheating and warning students to do their own work. For all of these reasons, we should be utilizing one of the most valuable and underutilized aids known to individualization and humanization of education, namely other students.

The third tool that can be developed for use on the open-admissions frontier is the more effective use of technology. Community colleges need to capitalize on the growing potential of technology to individualize instruction and to provide high quality instruction for the masses. The RSVP computerized program at Miami-Dade Community College offers an excellent illustration of what can be done to individualize academic advising on a large campus.

Last fall Academic Alert and Advisement, which is a computer-managed academic advisory service, sent an individualized letter to each of Miami-Dade's 10,000 first-time-in-college students. The letter informed them of their progress, noted any special problems with attendance, suggested needed remedial work, warned of special problems in veteran's benefits or international visas, and suggested various campus resources for help with the problems identified in the letter (Anandam, 1978). The computer used three sources of information in individualizing the letter to students: First, student-provided information such as course load, native language, physical limitations, and age; second, test data including reading and mathematics test scores; and third, progress reports from faculty which marked class attendance and performance as "satisfactory" or "needing improvement." Miami-Dade's work with RSVP provides a glimpse into the future in utilizing technology to handle the diversity of the masses. The cost of such computer-managed systems is coming within reach of most colleges now, and for an institution the size of Miami-Dade, it is thoroughly cost-effective. It is just one example of what can be done with an imaginative use of technology.

Television and related audiovisual technologies are other examples of the uses of technology, in this case to improve the quality of presentation of subject matter. Both the advantages and disadvantages of television and its cousins have been discussed endlessly over several decades now. Used well, they offer advantages beyond mere convenience to location-bound learners. Unfortunately, the use of technology in instruction has frequently been discussed as though it were to replace human teachers rather than to supplement them.

The task of presenting information, however, is a very limited function of education, and it may be one of the few things in education that can be done better in print or by a machine than by a human teacher. Yet many, if not most, teachers still picture teaching as consisting largely of providing information about their academic speciality--a picture that may have been accurate when the academic lecture became the mainstay of college instruction centuries ago, but is now not merely inaccurate but dangerous to the education profession. If teachers continue to define their role narrowly as classroom disseminators of information, then it is likely that in the not very distant future, they will be replaced by machines because they can be.

Quality education for each individual is a frontier well worth conquering, and community colleges are the appropriate pioneers to explore new routes to individualization. I predict that most postsecondary education will be in the new territory of diversity by the year 2000 and they will need the tools and procedures developed by today's pioneers. As a society we must find ways to educate all our citizens; as educators we must accept the conditions which that new frontier furnishes or perish. . . .

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