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ABSTRACT

Sixty-six descriptions of notable programs and promising practices related to specific problems, practices, and goals in American postsecondary education are presented in this study, a continuation of Volume I. The programs are the result of searches made by the staff of the National Commission on Excellence in Education, although neither the staff nor the Commission has validated these programs. Responses to the Commission's searches were voluntary. The programs are divided into six parts: (1) academic time: calendars of institutions and individuals; (2) retention and academic work; (3) the uses of instructional technology; (4) language: expanding personal space; (5) joint ventures of colleges and employers/worker education; and (6) assessment: the bottom line. Academic time was approached in two ways: as a resource and as an alterable variable in the teaching/learning process that affects student achievement. Most of the profiles in this section address different temporal frameworks within which adults seek education. The section on language focuses on writing, but also addresses reading, listening, and speaking skills, as well as some foreign language programs. The section on assessment covers both student evaluation and the use of assessment information to improve performance measurements. Included is an index listing each institution (as presented in both Volume I and Volume II) with addresses. A letter from the American Council on Education is appended. It explains the categories chosen by the National Commission on Excellence in Education for the identification of notable academic programs. Lists of these categories and of the items to be covered in determining notable programs are presented as an attachment to the letter. (SW)

STARTING WITH STUDENTS:

Notable Programs, Promising Approaches, and Other Improvement Efforts in American Postsecondary Education

Volume II

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Prepared from Materials Submitted to the
National Commission on Excellence in Education

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STARTING WITH STUDENTS:
Notable Programs, Promising Approaches, and Other Improvement Efforts in American Postsecondary Education

VOLUME II

Introduction to Volume II

The purposes and processes of the project reflected in these pages were explained in the "Introduction" to Volume I, but bear repeating. They bear repeating even more given the year that has passed between the actual completion of not only the text but all the editorial details of the two volumes.

This project was originally executed under the auspices of the National Commission on Excellence in Education, whose Charter included a provision "to review and to describe educational programs that are recognized as preparing students who . . . meet with uncommon success the demands placed upon them by the nation's colleges and universities." With the assistance of a variety of organizations (principally the American Council on Education), the staff of the Commission thus conducted publicly announced searches for examples of notable programs and promising approaches to thirty (30) specific problems, practices and goals in American postsecondary education. It is important to note that these were not "Federal Surveys." Had they been so, the response might have been more substantial, but so would the red tape, and hence, the results less timely. And i s more important to note that though all the cooperating organizatio ought profiles that responded to 11 key questions designed to help anyone understand the purpose, content, organization, impact and transferrability of a program (see Appendix A), neither those organizations, the Commission, nor its staff was in any position to validate those programs.

In other words, in no place in either Volume I or Volume II does anyone intend to stamp the "Good Housekeeping Seal of Approval," so to speak, on the materials prepared and submitted by others. The reviews in these volumes are secondary sources. The primary sources are the programs themselves. We looked at prepared profiles--which are artifacts of the programs. When we make judgments, it is of the claims or assertions or descriptions contained in the artifacts. Where the evidence is curious, we say so; where it is contradictory, we say so; where it is convincing, we say so. But in no case are we judging anything more than the representation of the reality in the profiles submitted. What you read, then, is loosely analogous to literary criticism.

What Do We Have Here?

As one might expect, there is an extraordinary range in the quality of the documents and in the apparent quality of the programs presented to the Commission. Some of these programs appear to be landmarks in the improvement of American education and speak eloquently to the emerging

themes and particulars of the national discussion stimulated by A Nation at Risk. Other profiles and documents are no less instructive in their unintentional revelation of the occasional paucity of imagination in American higher education and the difficulty it has in describing both the objectives and the effects of its work.

After all, given the wording of Secretary Bell's charge to the Commission, we were most interested in measures of program success (particularly measures of student learning); and our unwritten guideline in judging those measures was only that they be appropriate to the objectives of a program or strategy. Unfortunately, this is an area in which higher education is very weak, as it has traditionally measured quality by inputs, not learning outcomes, and hence is unaccustomed to thinking through the relationship between clear educational objectives, discrete teaching and learning activities, and assessment to determine whether those clear objectives have been met.

We have too often accepted the claims of higher education on blind faith. But one has to demonstrate success, not claim it; one has to present adequate and appropriate evidence, not intuitions, "vibrations," or self-judgments. And while there may be multiple measures of program success (not all of them quantitative or textbook models of pre/post assessment), some are more convincing than others. The reader will note that I place considerable emphasis on these issuus in the reviews. This was a pattern we set very early in this process, and with the intention of helping the Commissioners discern what is appropriate to context and constituency, what is hackneyed, and what is creative. In keeping with that intention, I take full responsibility for all the judgments (and there are plenty of them) offered in these pages.

What Programs are Reviewed in Volume II?

In the Introduction to Volume I, we provided substantial detail concerning the ways in which programs that submitted profiles and other documents were selected for review. Basically, we separated out unworkable submissions (e.g. two volumes of curricular materials with a one paragraph covering letter), most graduate programs (our focus was clearly on undergraduate education, and we include graduate programs for review only when they provided a unique illustration of a promising approach to a generic problem in higher education), and programs in planning or early implementation phases (for which the evidence of impact was insufficient).

The remaining program reviews were organized in categories such that a brief but coherent introduction could be written for each. These introductory essays are intended simply to highlight the tenor of the materials received and/or the general character of the problem addressed by the programs reviewed. These essays do not set out to be definitive guidelines to the problem, nor to review the extant literature.

Since these Volumes blend profiles from a number of searches, we reconstituted ACE's original distribution, and, in the process, reduced

the number of categories from 30 to 15. The reader will note that a third of the major reviews in Volume II are of programs at community and technical colleges (v. less than 10% of the major reviews in Volume I). The principal reason has much to do with the topics covered. That is, when one looks at variations on academic time, retention and persistence, instructional technology, and joint ventures of colleges and employers, it is inevitable that one will see a reflection of the changing demographics of higher education that have led to dramatic growth in community college enrollments. At the same time, community colleges have moved away from their historical transfer function to emphasize occupational degree programs and community service educational functions for adults, and, in the process, inevitably tested many approaches to the topics addressed in Volume II. Only in the area of creative approaches to assessment (Section M) are these institutions noticeably underrepresented. While that may be disappointing, we must remember that what is in this collection is dependent on what was voluntarily submitted.

Textual Notations

The materials reviewed in most topic categories were of three types: (1) those profiles presenting information sufficient to write a substantive analysis; (2) those that lacked adequate information on key issues or which were excessively confusing; and (3) those describing programs implemented so recently that convincing results were not yet apparent. Programs in the first group received full write-ups and are numbered. With few exceptions, programs in the other two groups received shorter treatments and are not numbered. We did not make this distinction to judge the first group of programs successful and the others less so, rather because we wished to point the reader who is interested in further constructive information to those who evidently could provide it.

It is important to note that unless indicated in an introductory essay to a section, no interpretation should be made of the order in which reviews are presented.

Lastly, Elaine Reuben, a Washington-based educational consultant, assisted in the drafting of a number of profile abstracts. Where her drafts became largely the final form of the review, the fact is so indicated by her initials (ER).

Index to Programs

When Volume I was issued a year ago, we received many requests for names, addresses and telephone numbers of program directors. In a way, that was very gratifying. But we were swiftly reminded of the paradox of permanent mutability in the Academy. Directors and phone numbers for virtually half the programs reviewed in Volume I changed from the time the profiles were submitted in 1982 to the time excerpts were published in The Chronicle of Higher Education and The AAHE Bulletin in early 1984 (and, indeed, a few programs no longer existed).

I thus chose not to include a telephone book as an appendix to Volume II. Instead, the Index lists simply the name and address of each institution whose programs are represented in the entire collection. I suggest that, for further information, the reader correspond directly with the president or chief executive officer (as indicated in the Index) of those institutions. Since it was the office of the president in all 3200 colleges, community colleges and universities in the United States that received the original solicitation from ACE, I am sure someone in those offices will know precisely where to forward inquiries.

A Final Word: "Involvement in Learning"

The national debate on the quality of American education stimulated by the work of the Commission inevitably moved on to focus on higher education. Within a few months of the issuance of A Nation at Risk, NIE had established a Study Group on the Conditions of Excellence in American Higher Education charged with making suggestions concerning the ways in which the findings of research and the lessons of practice could be utilized by college faculty and administrators in their efforts to improve curriculum and instruction. This group, selected on the basis of their diverse knowledge and experience, functioned as a seminar, and spent a year analyzing all the background materials on higher education--including these Volumes--prepared for the Commission, as well as other recent reports and studies, and a quarter-century of syntheses of research and practice. The product of their analysis, Involvement in Learning: Realizing the Potential of American Higher Education, was released in October of 1984. Based on the initial responses to the report in the media and in the higher education community, it is fair to say that the materials in these volumes will likely be used by many faculty and administrators in addressing the many challenging recommendations offered by the NIE Study Group.

Early in the Study Group's work, one member observed that a report such as what became Involvement in Learning can perform a national leadership role if it catches a tide that is already rising, coalescing the existing interests and energies of its natural constituents. The nearly 200 institutions whose work is reported and reviewed in Starting with Students have provided adequate evidence that the tide is rising, that there is concern and energy, and that American higher education has a remarkable capacity for renewal.

Part H: ACADEMIC TIME: CALENDARS OF INSTITUTIONS AND INDIVIDUALS

Time in education was one of the major themes of the National Commission's work, and was approached in two ways. First, time was considered as a resource that is allocated, used, and subsequently accounted for by institutions and individuals; second, it was approached as an alterable variable in the teaching and learning process that affects student achievement.

Whether considered from an economic or psychological perspective (i.e. resource or variable), time in postsecondary education is different from time at the school level. There are obvious reasons: postsecondary education is not set in a particular stage of life by external forces such as compulsory school laws. Rather, time in postsecondary education is an element of adult choice. The tradition of the lock-step (the agenda of a full-time, four-year baccalaureate program immediately following high school) has passed. Individuals now enter and re-enter postsecondary education at different stages of their lives. It is thus not surprising that the mean age of college students has risen from 22 to 26 since 1970, that nearly one-third of students in American colleges, community colleges and universities are over 35, and that the proportion of part-time students now stands at 42%--and is rising.

These changes occurred during a period of rapid expansion of higher education in the 1960s and early 1970s, a period during which the accounting system that granted "credits" (proxy measures for time) became more than a certification mechanism. Offering the actuarial formulas beloved by bureaucrats and understood by state legislators, this accounting system moved to center stage in the funding of higher education; and our managerial language is now dominated by "Student Credit Hours" and "Full-Time Equivalents." Time was thus transformed into a weapon in institutional politics; and our attention was distracted from more useful ways of thinking about time as a resource and a variable in education. We should have been watching the students who, during this period, started to reallocate personal time for the very purposes of higher education. As costs rose, for example, students worked more and cut back on their academic schedules. And as more and more adults entered higher education, they flooded the "odd" times for course offerings, thus forcing colleges to schedule more courses on weekends, in the evenings, and in large blocks of time on a single day.

Adults require tremendous flexibility in their allocation and use of time for education. Indeed, most of the profiles in this section address different temporal frameworks within which adults seek education. But it would not be heretical to suggest that the traditional age student is also making increased use of these frameworks.

There is a very significant by-product of these changes that may affect our accounting system in ways that go to the heart of what education is about. As it stands, the credit system substitutes time for performance as a measure of learning. Students get "block-knowledge-on-the-installment-plan," move through courses designed for 10 or 13 weeks in classes meeting 3-4 hours per week, and in which the subject matter is shaped by the allocation of time. They pass a test and/or write a paper or two and

receive some chits in exchange. When they have enough chits, a bell rings and they get a degree. There is no guarantee in this system that every student has mastered the course material--let alone allied material that may be the stuff of true learning. And some of those chits may be dubiously awarded for subjects that students can pursue in their discretionary time (of which there is far more in higher education than in elementary and secondary school).

But when institutions change the way they allocate time for learning toward more flexible modes, it is almost inevitable that the credit system will be challenged. Thus, in many of the programs reviewed here (as well as those in Section M, "Assessment"), attainment is displacing time as the ground of academic credentials; and with attainment comes Mastery Learning. This is a way of recognizing that individuals learn at different speeds, and that what matters is the bottom line--demonstration of what you have learned, no matter how long it took you to get there. In fact, attainment-based credentials may allow for far more learning in the same amount of time.

Mastery Learning also implies that students are efficient managers of their own time. Certainly we expect that in higher education; but most students in the traditional age cohort are not particularly good managers of time. This executive ability is critical to their persistence; and though it occasionally turns up in the course of the reviews in this section, it receives major emphasis in the course of discussing retention strategies in Section I below.

118. Colorado College

In 1970, and after a period of consideration of the best means to revitalize its academic program and to take advantage of a favorable student/faculty ratio, Colorado College developed and adopted the single-course curriculum known as the Block Plan. The academic calendar is now divided into nine (9) blocks of 3½ weeks each. Under the assumption that more intense periods of student involvement with a subject yield greater learning, students take--and faculty teach--one and only one academic course per time block. Even so, class size averages 14, and is held to a maximum of 25.

The "one-course-at-a-time" curriculum has not appreciably changed the traditional liberal arts education offered at Colorado College. But it has led to some extensions of curriculum and modifications of pedagogy: more field-based courses and special topics classes and fewer general surveys; more computer simulations and fewer labs; greater use of audio-visual materials and journal articles and lesser use of standard textbooks; more quizzes than final examinations; more short essays than term papers. Most of these changes follow logically from the design, though since some courses cover two or three blocks of time, there is still room e.g. for science labs and term papers.

A program such as this requires considerable administrative adjustments: in facilities use, student services, registration procedures, etc. A library, for example, has to replan for the intensive use of specific

materials during given time periods. But, even more significantly, a program such as this requires students and faculty to use their daily time in different ways within the same context: lectures, discussions, breaks for lab or library work, etc.

Faculty, student and administrative satisfaction with the program is high; and the number of students applying to transfer to Colorado College has risen along with the retention rate. An elaborate long-term evaluation plan (in place since 1973) centers on surveys of alumni--over 75% of whom consistently rate the plan--and their experiences--very highly. Alumni have particularly noted that they participated more and prepared more for classes--matching the judgments of those faculty who experienced both the traditional semester and block plan arrangements. And the skills in managing discretionary time that were born of the pressure of the block plan, alumni reported, carried over into their adult lives (e.g. they were far less inclined to procrastinate than the rest of us). Continuing review and evaluation processes are underway, and some modifications of the program (e.g. faculty teaching load) have already been made. Unintended consequences include a significant increase in student participation in extra-curricular activities. The College also expects a lower failure rate and a greater sense of community. (ER)

119. Sinclair Community College (Ohio)

Semesters and quarters are often the Procrustean bed of higher education, particularly for adult learners. The divisions of academic time are traditional creatures, but are wholly alien to the rhythms of adult life. The Sinclair "College without Walls" program, derived from the model of the Union of Experimenting Colleges and Universities, is designed to integrate the rhythms of education into those of life.

Perhaps that is a too grand way of putting it. But as soon as one places performance--or competence--at the core of higher education, time ceases to be the driving force. The Sinclair program is like many other performance-based degree programs--flexible and fluid, placing the principal responsibility for defining the process and management of time in education on students. Students must define not only the various competences to be achieved, but also the learning strategies by which their goals will be accomplished and measured. A degree plan embodying a time-and-action calendar is the starting point: when achieved, the Associate of Arts degree is awarded.

The program, which began in 1976, recognizes that not all students would benefit from its challenges. The admissions procedure is rigorous in its own way: only students at the most elite and selective of colleges have to go through the same amount of reflection and analysis of both previous experiences and future learning objectives in their applications. Who says that community colleges cannot develop selective admissions policies? If you have to prove that you are a self-directed learner on entrance to college, a majority of Ivy League candidates probably could not pass.

As should be obvious, this program proceeds under the rubric of learning contracts. To guide the contract to completion, the student forms a "resource group," including a faculty member, a student peer, and two "community resource" faculty. This group provides both support and quality control as students progress at their own speed to master learning objectives. Of course there is a tremendous burden of honesty on this group--it is a "buddy system" that cannot become too buddy-buddy. Indeed, there was no indication of how the college itself controls for quality in the "resource groups."

Mastery learning (the Benjamin Bloom model that informs efforts such as this) is fine enough; but it tells us more about the process than it does about content. The examples we examined, however--which included such subjects as labor relations, macroeconomics, general Sociology, and marketing--included as much (if not more) "stuff" as would be on the syllabi of very traditional survey courses. That, in itself, is testimony to what this kind of program can produce. And the modes of learning evidenced in those materials indicate that--absent the bed of the traditional academic calendar--students can learn in very diverse contexts.

120. Saint Mary College (Kans.)

This cooperative B.A. program is offered jointly by Donnelly College (a junior college in Kansas City, Kansas) and Saint Mary, in adjacent Leavenworth. The aim of the "2 Plus Two Program" is to provide baccalaureate opportunities for community college graduates and working adults. It is the kind of program that is particularly applicable in a rural state--where the four year colleges are located at considerable distances from major cities. Inner city residents with some college experience would not continue their education unless a program came to them.

What distinguishes this program is that the four year college (Saint Mary) offers the upper division curriculum at the two year college campus. The programs offered are in business administration, public affairs, accounting and computer science--all rather conventional, career-oriented programs that one would expect adult community college graduates to elect. The programs operate in the evenings and on weekends, and have yielded 125 graduates over the past decade, with 15% of those continuing their education in graduate school.

The number of graduates is not as important to us as the calendar and scheduling variations. Weekend courses meet six times in four hour sessions on alternate Saturdays. Not only does that allow the institution to develop two separate Saturday schedules, but also allows the individual with family responsibilities to plan his/her discretionary time better for academic purposes.

121. Univ. of Wisconsin at River Falls

The concept and reality of extension programs--and the inevitable variations in academic time that accompany them--originated in the land grant universities which had particular responsibilities to farm-based

populations. The Extended Degree Program in "Broad Area Agriculture" at U.W./River Falls is in this tradition. It is designed for adults who wish to complete upper-division courses that will qualify them for the B.S. in agriculture, but who cannot take advantage of a campus-based program.

However traditional in motivation, the form and processes of the program reflect modern advances in delivery. A two-year Kellog Foundation grant allowed faculty to prepare competency-based courses for self-paced learning. The requirements for each course can be met through evaluation of prior learning, participation in a cooperative internship, independent study, completion of audio-tutorial units and successful testing.

Although the program has not been in operation long enough for a full evaluation, preliminary indications are that it both meets student needs and enhances instructional development in other areas of the college. (ER)

122. Moorhead State University (Minn.)

The External Studies Program at Moorhead State represents a particularly sensitive and sensible approach to adult learners with a wide range of goals and abilities. It explicitly rejected relying heavily on so-called "alternative delivery systems" (i.e. technology) on the grounds that an absence of personal contact with faculty leaves students alienated. While TV courses and "telelecturing" are utilized by External Studies students, the emphasis in delivery in clearly in another direction.

One of the key requirements of the program that illustrates how a university can combine faculty contact with flexibility in the student's use of time is an "Area Study," a 16-credit project (related to--but distinct from--the major) that leads to a quasi-thesis. The student works with a faculty member on this project in much the same way as a doctoral candidate--at mutually agreed times.

The other components of the degree program are a 64 credit General Studies requirement (including 12 credits of English composition) and a major. Faculty have developed learning packages for courses that students can pace themselves through at home, then meeting in groups (with the faculty member) on four Saturdays during a semester. Evidently (though it is not exactly clear from the materials we examined), credit can be awarded in both traditional ways and/or by assessment of competences. The latter is a particularly rigorous process, demanding much time from both students and faculty.

Once a year, the University holds a conference for all its External Studies students, alumni, and faculty. This event, providing community and continuity, offers participants the chance to evaluate the program, suggest improvements, and renew its status in the institution. It is the type of event that all regional universities with external or extension programs should strongly consider.

123. University of Dayton

The "Fast-Track Late Entry Program for Women in Engineering" is a very different kind of variation on the academic calendar from those we have examined above, and for a very different kind of constituency. Its objectives are to bring women who already hold bachelor's degrees in chemistry, physics, mathematics or computer science to a level of engineering education comparable to that for B.S.E. holders in appropriate sub-fields (e.g. chemical engineering or electrical engineering). It is a non-degree "fifth year" program that qualifies its "graduates" either for employment or for further study at the Master's level.

The program has been offered four times since 1976 to highly motivated adults who wanted to realign their skills to compete in the job market in engineering. The condensed curriculum design, adapted from prototype "late-entry" programs previously developed at Dayton, uses shortened "summer school type" courses, self-paced courses, one-week total immersion courses, and regular 15-week term courses. Starting in January and ending in December, students complete the equivalent of 1½ years of college level engineering work. The program also includes a "professional development" course designed to maximize women's self-concept as engineers through panel discussions, workshops, counseling, and contact with employers.

Formative and final evaluations of the program have been extensive. The data indicate what seems less surprising after the fact: Fast Track students consistently performed at levels higher than traditional undergraduate engineering students, are received better in the marketplace, and consistently express higher job satisfaction.

Formative evaluations resulted in curricular adjustments including: (a) the addition of laboratory courses for more "hands on" experience; (b) the addition of six hours of engineering courses in each track (chemical and electrical) that could be applied toward a second bachelor's degree; (c) integrating Fast Track students with undergraduate students in the regular engineering curricula; and (d) removing a six hour mathematics review sequence for the electrical engineering track students (most of whom had been mathematics majors).

This very rich and well-presented profile also highlights unintended consequences of the program that are well-worth pondering by all who would contemplate similar program models. The students have motivated the faculty to make very significant commitments to teaching; facilities have been utilized beyond the point at which the University thought possible; faculty themselves have broken away from traditional instructional assumptions dictated by the traditional academic calendar; and a Women's Reentry Consortium, involving 100 colleges and universities, was born of this effort.

We also referred to "final evaluation," and should explain. The Fast Track Program was one of a series funded by the National Science Foundation to facilitate career changes and/or updating of skills in women previously trained in mathematics and science. NSF eliminated

funding for Career Facilitation programs after FY 81; but Dayton has been able to continue at least the electrical engineering track through 1985 under a contract with the Air Force Logistics Command. This new contract includes men and involves more coursework in electronics to match employer specifications.

124. Minneapolis Community College

The College for Working Adults is a new division of Minneapolis Community College, but has already grown to account for 13% of total enrollment. Approximately 400 students take 12 credits per quarter in a Liberal Education program leading to the A.A. degree.

Modelled on the Weekend College of Wayne State University in Detroit, CWA presents a thematic curriculum structured around topics related to adult life experience, e.g. "Work and Society," or "Conflict" (from household to international). The delivery system includes televised courses, weekend conference-seminar courses, and weekly workshop courses held at times and places convenient to students. Under such arrangements, students can complete the A.A. in 2-3 years--compared with longer periods if they confined their course-taking to evening classes.

Academic advising and support services are provided in the community and in workplaces during the evening, on weekends, and by telephone. During its first few years, the College has had to address issues related to articulation between CWA and other organizational processes in areas of budget, faculty workload, and coordination of services. The absence of a state subsidy for public television has resulted in financial strain for the broadcast and leasing of telecourses. However, evaluations by third-parties (as well as faculty and students) are all extremely positive. (ER)

125. Daytona Beach Community College

Eight General Education courses--ranging from Freshman English to General Psychology to College Algebra--are presented on the Keller Personalized System of Instruction Model at Daytona Beach Community College. Sections are offered on a correspondence basis as well as on campus, and in recognition that the work schedules of many community college students preclude regular attendance in courses given in the traditional academic time blocks.

The program has been in operation since 1976, and was developed for students with average or above-average reading skills (as measured by the Nelson-Denny Reading Test). Initially, the college also included a cognitive style inventory to match these students with appropriate instructors and courses, but widely discontinued this fine-tuning practice "because the process became unwieldy."

What distinguishes this approach to the student's allocation of time for academic learning is not so much the method but the setting. The Personalized Education Program has its own suite of rooms (for study, discussions, testing), its own staff of instructors (who come from the regular departments), its own "course managers" (who maintain records

and instructional materials), and its own "proctors" (who both grade unit tests and assist students in tutorial roles).

The program evaluates its success primarily by comparing course grades and completion rates of students choosing the PSI method with those students in regular sections. Completion rates are more instructive than grades in this regard, as the PSI program allows students to enter courses late and finish on time or to finish before the end of the academic semester. But one problem noted by the staff is that, in the process, students tend "to exaggerate the value of tests," an inevitable consequence of the method.

126. Lewis-Clark State College (Idaho)

A combination of variations on traditional academic time distinguishes the Management Technology Program at Lewis-Clark. This is a two-stage bachelor's degree program in business, and designed principally for employed adults in rural areas who have previous business experience. The upper division years are offered on campus or at four satellite centers. Lower division requirements may be met through traditional classes at the satellite centers or at a cooperating community college and/or by an experiential credit portfolio evaluation (under which up to 56 credit hours may be granted).

Although the content of upper division courses is traditional, scheduling and format are not. Extensive use of part-time faculty (many of whom are drawn from the community of retired professionals in the area) provides flexibility in scheduling. In addition, students at several locations can take advantage of telecourses; and individualized learning laboratories and computer assisted instruction now available on campus will be added to the rural satellite centers as funding permits.

The Management Technology Program appears to be providing access for students who would not otherwise have been able to participate in an equivalent program. Originally approved as an alternative option within the Business Administration program in 1975, this program made its first major outreach efforts in 1979, and, at present, enrolls more degree students than does the traditional program. (ER)

127. Gannon University (Pa.)

For many years, medical schools have admitted students who do not possess baccalaureate degrees. While the percentage of students who enter medical schools with only three years of undergraduate work is small, the practice is an established one, and results in a seven-year program to the M.D. degree.

In cooperation with the Hanemann Medical College in Philadelphia, Gannon University offers a seven-year program than yields both the M.D. degree and the B.S. in the seventh year. The primary purpose of the program, though, is to increase the number of family physicians in northwestern Pennsylvania, and the accelerated degree program is one incentive for students. Curriculum comes in four phases: a 3 year undergraduate pre-med program at Gannon; a 3 year medical school program at Hahnemann;

a one year clinical program in northwestern Pennsylvania that completes the requirements for the M.D. and includes a seminar in health care delivery that qualifies the students to receive the B.S. from Gannon; and a 3 year residency in family practice. Nearly half the graduates of the degree program to date have taken their residencies in the target geographical area.

128. Empire State College

You don't have to be a degree-granting statewide coordinating institution to stimulate other institutions to serve adult learners in flexible enough ways so as to allow individual calendars to match the timeless tasks of learning. But you do have to adopt an approach to time in education that involves:

- o a continuous academic calendar with opportunities for enrollment at virtually any time during the year;
- o a policy for withdrawal and reenrollment which allows students to adjust the balance of work, study, and family responsibilities as individual circumstances require;
- o degree programs based on learning contracts which, in effect, organize a student's time, paralleled by a business contract ("enrollment agreement") between the student and the institution based on the number of 4-week periods during the year in which the student is enrolled;
- o a systematic approach to the assessment of prior learning at the point of initial enrollment or reenrollment; and
- o enough options for methods of study to allow for the efficient management of a student's time through the learning contract.

Students are first assessed and admitted to ESC through the College's "regional centers." They then work with "mentors" to plan an independent course of study through learning contracts that may utilize formal courses at area colleges, specially hired tutors in specific subjects, consultations with local experts in particular fields, arrangements for conducting research in laboratories and/or libraries, etc. The mentor is thus both an advisor and entrepreneur, who operates with the financial and degree-granting authorities of ESC, but who often arranges for local colleges to serve as "hosts" for specific ESC programs.

When learning contracts are drawn up, the mentor or surrogate who is to supervise the particular learning experience determines the amount of credit to be earned (a determination that is reviewed by a regional center administrator). While a number of criteria enter into that determination, ESC has promulgated the broad guideline that 1 credit should represent approximately 40 hours of total study time. But the interpretation is not so narrow, and the quality control issue is continually addressed through disciplinary area guidelines for credit and through periodic reviews of samples of student work that document different levels of learning within different time periods.

The authors of the ESC profile point out that "the time structure of learning contracts poses several difficulties." If you wish to maintain

flexibility "in the pace of study" and at the same time have an accounting system that is based on blocks of time, there are inevitable tensions that arise when students fail to complete a contracted task within the contract dates. To handle such cases, ESC has evidently developed a formula that allows for standards to be set in terms of "rate of progress," though exactly how that works was not clear

Other Programs in this Category:

Inter-American University of Puerto Rico

The Non-traditional Studies Program at Inter American University's several regional colleges offers self-paced individualized learning modules, independent study with tutorial assistance, self-study with classroom instruction supplements, and internships in business administration, accounting, secretarial science, public administration, education, and criminal justice. Most students enrolled are women who have been out of school an average of 11 years, and without the special delivery system that takes account of the time-constraints of adult life, would be unable to participate in regular academic programs. While the program is too new to be evaluated, early data indicate that the students achieved as well or better than traditional students in terms of both course grades and scores on standardized tests (administered pre- and post). (ER)

Northeastern University (Mass.)

The Management Intern Program is an accelerated 21-month course of study for MBA candidates. The time period is divided in three parts: (1) six months of structured coursework in accounting, finance, computer applications, economics, statistics, and human resources; (2) a six month internship commensurate with the student's previous training and experience; and (3) nine months of coursework, both required and elective. Before the first and third of these blocks of time, the student attends brief "residency periods" for purposes of orientation and reorientation, respectively.

The compressed time framework for a professional degree program such as this requires a significant amount of student counseling, along with the administrative time necessary to develop new internships (a standard feature of cooperative education programs).

For purposes of evaluation, Northeastern is fortunate in having a built-in control group: regular full-time MBA program students. Against this group, the Management Interns receive (a) a proportionally greater number of job offers and (b) higher initial salaries. No other measures have been used, though a longitudinal study of the career paths of alumni are underway.

LeMoyne-Owen College (Tenn)

The Cooperative Education Program at LeMoyne-Owen College in Memphis was designed with inner city minority students in mind, and hence, with a calendar that seems particularly suited to retaining that constituency in an academic program. When the College began requiring a cooperative education program for all entering freshmen in 1975, it shifted from a semester to a 12-month trimester system. At the sacrifice of summer vacation, but at the gain of earnings that can contribute toward tuition and other college fees, such a calendar enables the student to complete the bachelor's degree in the traditional four years. While this may not seem so much out of the ordinary, the College recognized that it was important for the motivation of its particular constituency to have a job experience that was tied to both the academic curriculum and career goals.

PART I: RETENTION AND ACADEMIC WORK

While persistence is a means to learning, we too often judge it as an end in itself. Our terms for those judgments are "retention" and "attrition," two sides of the same statistical coin. Even if we were interested only in gross data, we would need to take into account both student intentions and time-to-degree to help us judge retention rates in a voluntary system of higher education. If a freshman indicates a goal of receiving the Bachelor's degree within 5-6 years of entering college, and subsequently drops out after one or two years (or the equivalent in credits), then we have an attrition problem; but if no such goal is indicated, we may not have that problem.

The National Longitudinal Survey data on the High School Class of 1972 demonstrate that 53.% of those who entered college (two-year or four-year) with the intention of receiving a Bachelor's degree actually achieved their goal within 7½ years of high school graduation. One can argue whether 7½ years is a reasonable period within which to complete a Bachelor's degree, particularly as part-time college study becomes the norm. One can certainly argue that our system of data gathering does not allow us to figure out what percentage of the "drop outs" are "recovered" by other types of educational programs or by the higher education system itself 5 or 10 years later. And other data bases (e.g. that of the Cooperative Institutional Research Project of ACE) strongly indicate that students who begin their college careers as full-time students in four-year institutions are far more likely to achieve the Bachelor's degree than those who meet neither condition. Nonetheless, the data suggest that if we regard persistence as a major educational outcome, we have a retention problem in American higher education.

Individual colleges and community colleges are concerned with retention for a number of reasons, some to do with student learning and others to do with maintaining enrollments. It is to their credit that most of the programs reviewed in this section seem driven principally by their concern for student learning. In the main, they see persistence as reflecting motivation and aspiration. More than that, they see persistence as the result of an involvement in learning that is strong enough to withstand other environmental and personal pressures on a student, be he or she full or part-time, traditional age or adult. And even more, they recognize that it is the quality and intensity of involvement in a student's first experiences in an institution that make the greatest difference in terms of retention. While we were thus tempted to classify many of these programs under "The Freshman Year Experience" (see Volume I, Section B), not all of them deal with "freshmen" per se. Retention, the reader will discover, has many faces.

Any approach to increasing retention that is based on the quality and intensity of involvement in learning results in a programmatic focus on the nature of academic work. And, in many respects, "work" is what it is, the regular execution of different kinds of tasks to achieve specific ends. The ability to exercise developed skills to bear on those tasks and the serious desire to do so, is what many of these programs address. Since these abilities and desires are basic to education, it is not surprising that the subject population in most of

the programs reviewed here is classified as "developmental" or "remedial." Retention is about tactics to develop academic work skills and de facto workplace attitudes in these students. The programs all recognize that if all we do is to make students feel good, if all--or most--of what we offer in special programs directed toward a potential attrition problem is affective learning, the chances for a measurable impact on the skills and sweat that yield productive knowledge are nil.

In her commissioned paper for the National Commission on Excellence, Deborah Stipek of UCLA suggested that the characteristics of the pre-school age learner, who has internalized the rewards of discovery, "seem ideally suited for academic excellence in college," and went on to delineate a number of ways to reinforce those characteristics: value-added measures, mastery learning, and the freedom to make mistakes. The principal problem with the retention strategies reflected in these profiles is that they do not provide for the freedom to make mistakes. And yet that freedom is critical to internalizing the rewards of learning, and hence adding an affective dimension to the otherwise bloodless--but necessary-- efficiency of academic work.

129. Bronx Community College

The Bronx Community College approach to retention is embracing and systematic, involving reform of institutional processes, change in the institutional environment, and a high degree of consciousness of the elements of academic work.

Most de facto open-enrollment colleges (community colleges, many state colleges) know that there is a group of students who enroll for a full load of courses but do not attend classes. They are not serious students; and Bronx Community College felt that in order to improve the academic environment of the college, the first task was to get rid of students who simply hung around. In 1979, a system was devised for the automatic dropping of students who either do not attend class at all during the first three weeks of a term or attend sporadically and do not attend at all in the fourth and fifth week. Such a step took great courage in an institution funded by enrollment-driven formulas. Indeed, FTE enrollment dropped nearly 20% in the semester following implementation of the policy. But the fact that FTE enrollment has since returned to its previous level indicates that the message--reinforced by a new freshman orientation program--has taken hold: students are more serious (a prerequisite for retention) and the college can devote its energies to their learning.

The attendance problem was but the first step. A Learning Resource Center added computer-assisted-instruction in Chemistry, Physics, and Nursing (and is in the process of extending the CAI program to Mathematics and Biology). Each department developed a tutorial program. Advisement was centralized for first semester freshmen to insure that they received course schedules of preference--a very important move that most institutions overlook. That is, freshmen are likely to become discouraged (and hence, more likely to drop out of college) when they are treated as the bottom of the barrel at registration.

But a schedule of preference means little unless the courses are realistic; and to the end of matching student abilities and learning needs to courses, an elaborate diagnostic testing program was initiated in 1978. Each department was then asked to review its entry level courses in terms of the academic competencies and skills measured by the examinations. As a result, it is possible to place remedial students in course packages according to their abilities, and preclude them from registering for courses requiring skill levels above those for which they were tested.

While a special remedial course program was put in place, BCC does not abandon those students who pass through the remedial courses into the regular curriculum. The faculty in the disciplinary departments have been trained to reinforce and extend students' communications skills in a manner analogous to the writing-across-the-curriculum models.

Results? The college is justly interested in rate-of-progress toward the degree as it is in retention per se; and a formula involving GPA and numbers of credits attempted determines students "in good academic standing." Since the program was initiated in 1979-1980, the percentage of students meeting those criteria has risen from 67.6% to 73.8%, and the percentage of students suspended has declined from 19.2% to 14.3%. These are promising trajectories, and, given the comprehensive approach employed by the College, are bound to evidence further gains.

130. University of Minnesota

The General College of the University of Minnesota has been in existence since 1932. It is one of 22 undergraduate colleges in the University, and its distinctive mission has been to address the needs of open admissions students who would not be well served by the other colleges. It offers a variety of certificate and degree programs--both Associate and Bachelors. Despite such options, retention is a particular problem among first year students, and even more so among first year minority students. A 1978 study revealed that despite the availability of special skills courses and tutorials, the drop-out rate among underprepared minority students was nearly 50%.

These students dropped out for reasons that subsume deficiencies in previous preparation but that go far beyond that rather conventional analysis. They were students with less specific goals (educational or career) than other freshmen; they were less likely to participate in or form peer study groups or to seek and use supportive services; they were less likely to perceive any relationship between academic subject matter and their life experiences; and they evidenced great difficulty in both managing their time and in coping with the complexity of a large university. In short, they were fairly well alienated from the processes and culture of the institution.

The program developed by the General College to respond to this analysis may be considered controversial by some: separate, full academic-year plans (courses, modules, support services and tutorials) were developed for each of four racial minority groups (Black, Asian, Amerind, and Chicano), along with a multi-racial plan directed at high risk white or

minority students. The theory is that courses in language skills directed at a homogeneous group will be more productive, that modules using materials from literature and the social sciences to explore the cultural values of an ethnic group will engage students' imaginative sympathies, and that tutorial and support services provided by appropriate ethnic personnel all will have positive effects. To reinforce those anticipated effects, each of these "packages" is "delivered" by a teaching team, assisted by an advisory committee that recruits both students and minority faculty to the enterprise.

The General College refers to this approach as an initial "sheltering," but expects that by the end of the freshman year, the student will have been "mainstreamed," i.e. moved into ever increasing numbers of courses in the regular curriculum and with reduced dependence on the special program.

In terms of retention data on these alienated students, the approach seems to work. General College students who are not in the program (about 3300) have a 70% retention rate through the first year of college. Students in the racial/ethnic plans evidence a 79% retention rate; and students in the special multi-racial plan (approximately 1/3rd of the 200 program students) showed an 84% retention rate. More to the point, as a two-year evaluation study recently demonstrated, the retention rates of high-risk minority students increased dramatically.

131. University of Calif. at Berkeley

Retention has many faces and objectives. Helping students persist to the attainment of a degree is one. Helping them to persist in a demanding academic program of their choice is another; and it is this second notion of retention that is well illustrated by the Math/Science Workshop of the Professional Development Program at UC/Berkeley.

The program is directed at entering Black and Chicano freshmen who wish to pursue degrees and careers in science, engineering and other mathematics-based fields. The most significant barrier for these students--most of whom come from high schools that are mediocre, at best, in mathematics and science education--is a one year Calculus sequence. Prior to the creation of the Math/Science Workshop in 1978, 25% of the minority students dropped out of the sequence in the first quarter, and the average grades of those who remained were below 2.0 (the minimum acceptable level at the University). With data like that, the chances of program retention are low, indeed.

The Professional Development Program staff analyzed the situation and offered a number of plausible hypotheses, some fairly standard, some not-so-standard (but, as other reviews in this section show, increasingly cited by sensitive and skilled observers). Minority students, they concluded:

- o enter college with less exposure to mathematics than others;
- o tend to overestimate their understanding in mathematics, hence prepare less for classes (a sad inheritance of experience in high schools with low academic standards);

- o do not manage discretionary time effectively for study and are unaccustomed to the pace and intensity of math and science courses in a major university;
- o rarely study with their classmates--even fellow minority classmates--thus isolating themselves from informal and supportive learning communities that have proven to have powerful and positive effects on academic achievement;
- o have unrealistic perceptions of academic requirements and social norms in a university setting; and
- o misunderstand and mistrust such supportive services as counseling, advisement, and tutoring--even those services designed specifically for minorities (another tragic heritage of poor high schools).

Each component of the Math/Science workshop is designed to address one or more of these problems. The overriding strategy, though, is to create formal communities of learners, "study groups," that are established even before freshman classes begin, and that demand 15 hours per week in academic and social activities. The processes of these study groups are designed to develop self-sufficiency in students; and the time spent becomes more productive through a greater quality of effort. Students who have to work together to squeeze concepts out of primary material play instructional roles; and the master learner is always the most efficient learner.

The Workshop also includes an intense interview with staff during orientation period in which all the unrealistic expectations and inflated self-assessments are exploded, and an appropriate overall academic plan designed for each student. Needless to say, students are carefully monitored from that point on: by sophomores who serve as "buddies," by Workshop staff, and by classroom instructors. And supplementary instruction in reading the technical language of texts and in learning standard mathematical forms for homework and lab assignments is required. The tenor of this instruction is hardly remedial; and to reinforce that approach, students are placed only in courses for which they have adequate preparation.

The results of this carefully thought-through effort are impressive. The performance of Black and Chicano Workshop students in the Calculus sequence has leaped nearly a full point on the 4.0 GPA scale, and remains a full point above the performance of non-workshop minority students. By the second semester of the Calculus sequence, Workshop participants' average GPA is 3.0, a grade equal to or greater than that of their non-minority classmates. The attrition rate for Workshop students in the Calculus sequence since 1979 has been less than 2%.

From the perspective of retention more broadly conceived, PDP staff note that "the proportion of Black and Chicano Workshop [illegible]nts completing four and seven academic terms at Berkeley is higher [illegible]n that of both their minority and their non-minority classmates." And the proportion of Workshop students completing their tenth term is higher than the mean for all Berkeley undergraduates.

What is also promising about this pr gram is its attempt to link up with high schools in order to draw promising minority students into the pipeline. The efforts go beyond "outreach" (as described in Volume I, Section A.2) to exemplary case.

132. University of West Florida

Retention has many faces and objectives. Yet another retention strategy applies to the student who transfers from a community college to a four year institution. Science programs present special problems for these transfer students, since junior and senior level courses build extensively and directly on material taught in the first two years of college. The Chemistry Department of the University of West Florida (until very recently, a wholly upper-division, two-year institution) has developed a program for students with varied preparation who transfer from community colleges.

The Department has been a leader in community college/university articulation in the state, working with two-year college faculty to improve curriculum and instruction and counseling community college students who wish to major in Chemistry, inviting them to open houses, and offering them a standing opportunity to use the University laboratories. The preparation of entering students has improved, and their transition to the university has been facilitated.

However, community college students who do not choose a Chemistry major until their second year are inadequately prepared when they enter the upper division. In fact, if they lack prerequisite courses in organic chemistry, mathematics and physics, it is impossible for them to graduate in two years. To address that problem--and to anticipate and preclude attrition--the Department uses a number of de facto "catch-up" strategies. These emphasize laboratory use and access; assistance from student instrument technicians; a course in "Chemical Calculations Using a Microcomputer"; the mastery and use of technical literature; the writing of 14-18 laboratory reports per course (with 25% of the grades on those reports being based on the quality of writing); and an instructional practice by which the first lecture sessions in each upper division course cover an extensive review of lower level course material, particularly in organic and physical chemistry.

As a result of these steps, over 90% of the transfer students graduate with a B.S.; 90% of these receive A.C.S. certified degrees, and 45% (versus a national average of 25%) are accepted into graduate programs. (ER)

133. University of Redlands (Calif.)

Retention applies to different populations. One population of growing importance to higher education is composed of working adults. And in programs held at off-campus sites for working adults, the quality of teaching faculty is critical to student involvement, hence retention.

The Whitehead Center for Lifelong Learning, a division of the University of Redlands, serves over 1000 adults in six Bachelors and Masters degree

programs. While students traditionally evaluated the programs well, the attrition rates were appalling. For 1978, for example, 52% of the first-year enrollees in the Management programs dropped out, as did 30% of the first-year students in the M.A. in Education program. This disturbing trend resulted in two studies that looked more carefully at student opinion, and allowed program staff to conclude that the qualifications of instructors and the quality of teaching were not judged very favorably by students in comparison to other factors that normally encourage persistence for this particular constituency (e.g. course content, convenience, time scope, use of work project).

What resulted was a program for faculty selection and evaluation. It was established that the instructors most likely to be successful in this program were those who were: (1) masters of group processes; (2) strong in writing skills; (3) both decisive and tactful; (4) capable of motivating--but not overawing--students; and (5) both patient and supportive. How does one find faculty who both know their subject matter and possess these attributes? First, Redlands uses a four-hour assessment, in which groups of 20-30 candidates are involved in exercises including writing responses to student research proposals, leaderless discussions, and personal interviews. Following appointment, there is a training process (though it was difficult to determine precisely what goes on in this "training"); and every faculty member is evaluated by students at the conclusion of every course.

The results are difficult to attribute directly to changes in faculty hiring policy, but they are significant: within two years of implementing the selection process, the attrition rate dropped from 52% to 27% in Management, and from 30% to 20% in Education. Overall, the undergraduate program completion rate is now 80%--an impressive figure by any criteria.

134. Tennessee State University

A majority of students entering Tennessee State have taken only one year of high school mathematics--usually general or business math. For many years their average ACT math scores have been less than 10 (compared to national means of over 17.5). Because students entered so poorly prepared, and because methods and materials for remediation were limited, over 50% failed freshman mathematics courses. Budgetary and staffing problems prevented establishment of a structured remediation program until 1977, when the Mathematics Laboratory was established under the University's AIDP grant.

The Math Lab Program seeks to rid students of both deficiencies and anxieties. The Lab provides services to students enrolled in all math courses, from Remedial through Calculus, as well as to those who need assistance with basic mathematical concepts in statistics, the sciences, business, psychology and other disciplines. Over 700 students participate in approximately 5,000 individual and group tutorial sessions at the Lab each year.

The processes of the Math Lab place tremendous responsibility on the student: approximately 95% of the students are self-referred; and it is

the student who determines how often and for how long he/she will attend. The only external pressures seem indirect: faculty provide weekly reports on students in their classes who are attending Lab, and evaluate those students against those who did not attend. Over the past five years, 88% of students who attended the Lab regularly completed and passed their mathematics courses versus 69% of students who attended irregularly versus 55% of the students who never attended. Staff credit this success rate to an informal, pressure-free atmosphere, supportive and dedicated personnel, and appropriate educational materials and technology--though the profile did not indicate what these were. (ER)

135. Iowa Lakes Community College

For reasons of both institutional economics and mission, student retention is a matter of great concern at Iowa Lakes Community College. Faculty studied drop-outs over a period of time, and concluded that one of the most persistent reasons for attrition was not academic: students felt that they "did not belong." And the more non-traditional the student, the more intense this feeling.

Thus "The Velkommen Experience" was instituted in 1979, with a special emphasis on the beginning student. The program presents 10 hour-long sessions dealing with human relations during the orientation period in order to put students on the road to becoming more comfortable with themselves, other students, faculty and college life in general. Faculty prepare for these sessions by working in groups, studying such problems as "mainstreaming the non-traditional student."

The 10 sessions, stretching through the fall term, include role-playing exercises, naturalistic expression, construction of life style inventories, self-evaluation, identification of hostilities, discussions of friendship, and sharings of personal goals and feelings. The entire program is evaluated by both students and faculty; and results to date seem to be positive--though the measure of success will lie in improved retention rates, an issue the profile oddly did not discuss.

136. University of Louisville

"Developmental education" usually implies almost basal level work for extremely remedial students. While it is difficult to determine the academic abilities of the students served by the Developmental Education Center at the University of Louisville, the courses offered by the Center seem to imply something else.

On the one hand, there is a group of remedial courses carrying non-additive credit (i.e. while you get credit, it does not apply toward the B.A. degree). These courses focus on language skills (spelling, standard usage and listening) and critical thinking at the level of assisting students in accurate observation and reporting, basic inferential reasoning and the ability to separate fact from opinion. These course are designed for "open admissions students," though the profile we examined never specified whether open admissions is a policy for the entire institution or simply for a special category of entering freshmen. What is clear is that students are referred to the program or

self-select, a rather odd procedure if the student needs remedial work. Why wait until the open-admissions student has trouble and has to be referred? By that time, one could lose half the target student population.

The Center also offers a group of very interesting competency-based General Education courses that recognize the vast potential of the research paradigm for instruction. The courses ask less what a social scientist or humanist knows than what they do. They are specifically labelled "Ideas and Research" and "Case Studies in Research" in the social sciences and humanities, and involve students in research projects that expose them to the methods of academic work in these two broad curricular areas (why sciences are not included, though, is somewhat of a mystery). All these course carry degree credit and, as far as we can tell, seem open to anyone in the University.

The profile we examined talks about functions of the Center such as identifying academic skills, developing measures to diagnose those skills, and evaluating existing and proposed courses "according to competency criteria." These are all fascinating objectives, but unfortunately we were not told anything about the ways in which they work themselves out in practice. Nor do we have any indication of the impact of the courses on student persistence and achievement.

137. Penn Valley Community College (Missouri)

Retention is a particular problem for the non-native speaker of English--not merely because of the language barrier but also due to socio-cultural difficulties in adapting to the college environment. As the Penn Valley staff notes, these students tend to overestimate their abilities in English and underestimate the demands of a community college degree program. Furthermore, the language barrier is doubly complicating, as it hides the critical support service levers--counseling, tutoring--from the students who need those services most. As a consequence, the attrition rate is very high (though exactly how high was not indicated in the profile we received).

One of the critical issues in retention is identifying the vulnerable student. At Penn Valley, all language minority students are identified and tracked by computer so that their status is known at all times. The Limited English Speaking Ability program (LESA) can thus recruit more effectively (though we are told that most of the students taking advantage of the program do so on a walk-in basis).

The LESA program focuses foremost on language skills. and uses something very much akin to the total immersion approach: 26 hours per week of instruction in the four language skills, by ability grouping, and in combinations of classroom instruction and one-on-one tutorials. What are known in the research literature as Cognitive Academic Language skills are stressed over grammar. In addition, there is a particular focus on assisting students in history, speech and composition courses, all of which require a high degree of English language proficiency, and all of which are required for the degree at Penn Valley. This emphasis places high demands on a tutorial program; but it was unclear from the

materials we examined how many students and tutors were involved or how much time was allocated for tutorial sessions.

A notable feature of the LESA program involves testing and placement. This mechanism insures that students pursue a realistic program in light of their abilities and language proficiency. The program staff that performs testing and placement also guarantees to ESL students individuals upon whom to draw for assistance in career planning and matching academic programs (let alone for help in dealing with the "normal" bureaucratic processes of large educational organizations).

138. Daytona Beach Community College

The Learning Support Center provides three major services for inadequately prepared, culturally disadvantaged, and under-performing students in a two-year college setting. The first of these consists of non-credit, individualized learning activities, at the core of which lies something called the "Individualized Manpower Training System," a highly structured diagnostic/prescriptive basic skills programmed instruction package that covers mathematics (through Trigonometry), English, reading, and human relations skills. Other allied opportunities include tutorials for any college course and study modules to help students prepare for the required statewide academic progression examination (CLAST).

A second set of services is described as "enrichment," and includes short-term workshops and study groups on such critical features of efficient academic work as test-taking skills and time management, academic games and discussion groups, and the sponsorship of visits to Universities for students planning on transferring into a four-year degree program. The third service, counseling, covers not only guidance in developing life goals and educational plans, but also assistance to students in negotiating bureaucratic barriers.

The Center has been in operation since 1977. While it was unclear from the profile we examined how students get to the Center (required on the basis of placement tests? referred by faculty? self-selected?), or how many students use what services, we know that the retention rate for students who use tutorial services is 90-95% (versus 30-50% for those who do not). We also know that the increases in grade level competence for students using the Individualized Manpower Training System range from 0.6 levels in Reading to 1.6 levels in Math (but since no baselines were offered, and since there were no control groups, it is hard to judge those measures). Evidence of success might look better if the data collection and reporting were more rigorous.

139. Ramapo College of New Jersey

After the introduction of a statewide Basic Skills testing program for entering college freshmen in 1978. the Remedial/Developmental Mathematics Program at Ramapo recognized that its existing single remedial course was inefficient. That is, the range of abilities displayed by entering freshmen in both numeration skills and Algebraic

reasoning was so great that only different courses matched to ability groups could possibly prevent massive failure, discouragement and attrition.

Four options were thus created for students on the basis of test results: (1) a one semester course combining a review of computation with elementary Algebra; (2) a one semester course involving a short review of computation and a major emphasis on elementary Algebra; (3) a half-semester elementary Algebra course for students who demonstrate competence in computational skills; and (4) a one semester remedial course in computation only, after which the student moves to option #1, 2, or 3 depending on the results of retesting. Options #1, 2, and 3 are called "developmental," and are very intense: 200 minutes of instruction per week. All sections employ a Piagetian approach that moves from the concrete to the abstract, from illustrative models through patterns to abstract relationships.

Alternate versions of the New Jersey Basic Skills Test (which is normed for 7th grade arithmetic and 9th grade Algebra) are used to certify proficiency. A student must score 80% on the test to pass the course--the same score that would have exempted him/her in the first place. Some 90% of the students who take the "developmental" options succeed in doing so.

140. Mass. Inst. of Technology and Others

The Strategic Mathematics Pedagogy Consortium (including both school systems and colleges) is grounded in some knotty notions of brain theory yet directed at a very simple observation about mathematics--it is a language, a language based in our capacity for abstraction, and yet a language that students are not encouraged to speak. No wonder, the profile observes, that a "remedial industry" has sprouted and multiplied in the field of mathematics.

Part of the reason we do not "speak" mathematics is pedagogical: students are lectured at in math courses, the dominant mode of instruction is demonstration, and the dominant mode of learning is written problem-solving. Another reason is frankly philosophical: many mathematics teachers (at all levels of education) believe, for example, that one learns arithmetic in order to develop computation skills, whereas the case is precisely the reverse. Computation, this program holds, is the mode of access to mathematical language. By reflection on this issue, the program designers reached the conclusion that abstraction is the prerequisite for applications in mathematics, and not vice-versa.

If so, then students "ought to 'speak' mathematics" more often, ought to "rehearse its abstractions in fluent language." Thus the classes in this program are offered at all levels of education, but those of particular interest to us are Algebra classes in colleges. Students "recite" in these classes, are prepared to recite, and rehearse in the same way they would in studying a foreign language. The management of classroom conversation in mathematics is difficult, and instructors must be trained so that "every recitation by every student will end in a

successful performance." That means that as an instructor, you cannot explain by using a level of mathematical language that the student has yet to learn. Instead, you need series of questions in a language to which the student can respond. Algebraic word problems are classic material for "decomposition" into such questions, as they force the student "to speak mathematics" in pieces that can be "rehearsed."

Precisely how such a fascinating approach to academic work in math is brought into being in a classroom was not rehearsed in the profile we reviewed. But the example of a number of sections of a "remedial" Algebra course at UMASS/Boston demonstrated that students in the "strategic sections" performed "better" than those in the control sections--though what "better" means was not indicated.

141. Springfield Technical Community College

The General Studies Departmental System at Springfield Technical Community College, designed for developmental education students, is a creative and sensitive approach to both the academic and financial factors in retention.

Students in need of developmental work in English and math normally find themselves in a Catch-22. They are not allowed into degree programs in academic or occupational departments that must insure continued accreditation through entrance standards. But if one is not in a degree program, one is not eligible for certain kinds of financial aid. In a community college located in an economically depressed section of a metropolitan area, that Catch-22 can swiftly result in attrition.

STCC solves the problem through a mechanism called "intra-college transfer." That is, within the College, six Cores of Study have been established for developmental education students, each Core matching one of the broad areas in which divisional curricula are arranged: Transfer/Arts & Sciences; Pre-Health; Pre-Technology; Pre-Engineering/Science Transfer; Pre-Business or Service; and Bilingual Programs. It is then possible for the student to declare a degree intention and enroll in a course of study that is pre-requisite to the degree program.

The college serves roughly 4,000 students, of whom 750-850 in any one semester are considered "high risk" enough to place in one of the Core programs. Placement is made in two stages: at the time of application to the college (and by virtue of assessment of the student's transcript) and through a testing program on entrance. The student is assigned both a career guidance counselor and an academic advisor associated with the Core in which he/she is placed. To move from the Core to the degree program (i.e. "intra-college transfer"), the student files a formal application. If that application is rejected, the student goes back for further prerequisite skill building.

The program has been in existence since 1978, so very few years of data are available on the results of this process. From the data provided, it appears that half the students in the program apply for intra-college

transfer each year. Of these, 75% are accepted. Of those who are not accepted, half (or less than 5% of the total Program enrollment) do not return to the college. And half of those turn up at other colleges. So the attrition rate is rather low. The college has also performed a longitudinal study on a sub-group of disadvantaged minority students among the developmental group. The retention rate for these particularly high-risk students was 60%; and attrition was most highly correlated (nor surprisingly) with severe deficiencies in reading comprehension.

142. Burlington County College (N.J.)

For the past decade, "Introduction to Statistics" has drawn the largest enrollment of any course above the remedial level offered at Burlington County College. Advisors and students were persuaded that a basic course in statistics is a requirement of such a range of academic and pre-professional programs that it provides an advantage in transferring to a four-year institution and thus should be included in a student's academic program.

But the range of students served by this course goes far beyond the traditional community college student, and includes students from four-year colleges, graduate students, public school teachers and even faculty members from Burlington County College itself. How does one maintain a uniform quality of instruction and student performance across a number of sections of a course with that heterogeneous enrollment? The key pieces of the answer have much to do with effective academic work. One is a series of "research exercises," eight in number, in which the students gather their own data in a field of interest to them, and in such a way as to cover the key concepts delivered in the classroom: organization of data, random sampling, measures of central tendency and dispersion, confidence intervals and testing hypotheses. A second is a differentiated staffing pattern under the aegis of a Master Teacher, and including associate teachers for the sections, and instructional assistants for testing and tutorial purposes in both a centrally-located mathematics lab and in four off-campus locations.

143. Stockton State College (N.J.)

Retention efforts, as we have seen, are particularly important for students transferring from community colleges to baccalaureate degree granting institutions. They are more important when those students are returning adults; and for these students, retention can mean developing a capacity for self-directed lifelong learning. Such an approach to academic work and motivation is thus not limited to the attainment of the Bachelor's degree.

Stockton State has developed an upper division program in nursing for those who have previously received the Associate's degree in the field, in response to the recommendation by the American Nurses' Association that the B.S.N. be the entry level degree for professional nurses, and in particular light of its geographical position in relation to five

community colleges and four nursing diploma schools in the southern part of New Jersey.

The Nursing Program at Stockton opened in 1975, and received full accreditation from the National League of Nursing in 1980. In order to be admitted to the program, an applicant must demonstrate junior standing by either earned credits or CLEP examination (for non-nursing courses only, and only at the 50th percentile or better), including 44 credits in the traditional arts and sciences disciplines and 20 in lower division nursing courses.

But prior credits are not enough to insure success. A transfer counselor visits area community colleges and schools in order to advise potential applicants and answer their questions long before they come to Stockton. Once in the college, the process of close monitoring of progress is shared by the student and a "preceptorial advisor" (who plays a decidedly secondary role). Stockton assumes that its nursing students are highly motivated, and that they can largely serve as their own counselors. This high risk strategy seems to work, at least if one judges by the testimony of students. But the key lies in clear and detailed communication about admissions, progression, retention, and course and program objectives, reinforced by systematic student involvement in course and program assessment that emphasizes the evaluation of content and format more than instruction. The more students are thus involved as members of a learning community, the more the community supports the objectives and persistence of its learning members.

To bring the benefits of the world of learning to the world of practice--and thus to extend the clear focus of the learning community that keeps students involved--senior projects designed to teach, influence or serve community groups on health-related matters are required. The impact of such work on the Nursing students is reflected, in part, in the fact that over 60% of them go on to graduate school (v. roughly 25% for the college as a whole). If that is one step toward lifelong learning, the program seems to be achieving its underlying goal.

Other Programs in this Category

Pace University.

The Pace approach to retention is very straightforward: give each student a faculty or staff advisor who will track him/her from the moment of matriculation onward, a "friend" who will intercede and advise. If data provides any indication, this rather basic formula seems to work: the attrition rate has fallen from 47% for the Classes in 1977 and 1978 to 30% for the Class of 1983. But it is unclear why the formula works: student/advisor contacts are "urged," not mandated; there is no indication of how advisors are selected, trained, or assigned to students; no data concerning the frequency, quality or results of advisement sessions were presented; and no indication of whether this relationship persists beyond the freshman year was offered.

American International College (Mass.)

College level programs for learning disabled students are fairly rare. By "learning disabled," of course, we mean students tested at an average or above average level of intelligence, but afflicted with one or more neurological impairments that hinder learning in normal ways. Unlike students with very poor educational preparation and severe cultural disadvantaged, LD students are recognized as capable of meeting standard college requirements.

Four basic services are provided for the small group (currently 72) of Learning Disabled students enrolled at AIC: (1) individualized tutorial sessions two times per week; (2) audio-taped versions of college textbooks; (3) an option under which examinations can be taken free of time constraints and under special supervision; and (4) a pass/fail option for up to 36 credits.

Thomas Nelson Community College (Virginia)

The divorced, separated or widowed woman who never worked full-time when she was married and with little or no prior college experience is referred to in the argot of our times as a "displaced homemaker." Whatever the designation, there is no question that this is a growing clientele in postsecondary education that is also likely to evidence a high rate of attrition due to the discontinuities and stress experienced by these women when they enter college.

Thomas Nelson Community College, in Hampton, Va., is located hard by three major military installations, and hence (for reasons one understands almost intuitively) serves a significant number of these women. The college found that displaced homemakers entered "largely because they were unable to enter mainstream society and find a source of support because homemaking was all they knew and all that they had been socialized to know." The College organized a task force with representation from every division to sensitize faculty and staff to the special needs of this group and to improve services and educational delivery. Unfortunately, the material we received did not provide any definition of "special needs," any indication of precisely how those needs are met, or any evidence that what looks like a noble effort has succeeded.

Daytona Beach Community College

The program for displaced homemakers at Daytona Beach Community College, "Fresh Start," is not an academic program. It is a combination counseling and referral effort. Students are recruited by outreach workers, and begin with a 34-hour "course" over a period of two weeks. The course moves students through discussions of psychological factors that limit achievement, personal values, decision-making, the management of the home (including time and finances), exploring employment possibilities, and ways of managing stress. Monthly follow-up meetings are held with the "graduates" of the course. A counselor and "job researcher" also assist the

women in both building self-confidence and locating meaningful employment. Some 82% of those who complete the program have found jobs and another 4% have entered full-time educational programs.

Part J: THE USES OF INSTRUCTIONAL TECHNOLOGY

Perhaps the most significant revolution in technology to influence higher education since World War II was the introduction of the mass paperback book; and yet when we talk about intructional technology, we usually do not include this particular change in the distribution of knowledge. The point is that any major change in the ways in which knowledge is distributed (particularly when that change is dependent on a medium or a method of using a medium), is, properly speaking, a technological change. After all, the development and use of a medium or method alters the patterns of access to information, the tasks involved in learning, the amount of time required to obtain and manipulate information, the relationships between instructor and learner, and the very idea of the university as a repository and disseminator of knowledge.

In thinking of the more contemporary uses of instructional technology, particularly those relying on telecommunications and information processing equipment, the Commission was interested in the extent to which the use of the new technologies actually yielded thoughtful approaches to instruction and improved student learning in different disciplines. We were interested, too, to see whether computer-assisted instruction in higher education

- had progressed beyond drill and practice to modelling and simulation and hence to the development of complex reasoning capacities;
- adequately served the student who tends to be a passive learner in the classroom and/or who is wary of situations demanding overt competition with peers;
- fully involved instructors in active modes of teaching.

While many of the programs reviewed in these volumes employ some of the newer instructional technologies, surprisingly few claimed, as a primary objective and focus, the development of technology for a specific learning objective. We had expected to hear about projects utilizing videodisk technologies in second language learning, or about those that emphasized the graphic representational capacities of the computer to help students grasp abstractions and models in mathematics, engineering and economics, or about those that sought to test the impact of menu-driven wordprocessing programs on the quality of student writing. We knew that such projects existed; and are sure that enough of them can be assembled so as to produce a fuller understanding of their achievements and drawbacks than the limited number of programs reviewed in this section.

Only one of the programs reviewed here illustrates the potential sharing of archival data for specific curricular purposes in more than one institution. Given the existing inequities in the distribution of archival information (in subjects ranging from history to chemistry to economics to biomedical fields), the potential of microcomputers to rectify the situation is considerable--provided that the information is accessible in ways that reinforce curricula and learning tasks in different kinds of institutions.

Very little of what you read here of computer-based instructional programs involves the use of software originally developed for management tasks in business and government. In some ways, that is encouraging, since many such menu-driven programs involve but tedious entries of data and manipulations at comparatively lower levels of logical analysis, hence do not challenge college students to new levels of learning. On the other hand, some projects reviewed in other sections of this document employ too much of the drill/assessment software that separates the learner from the instructor and the instructor from the assessment process. The involvement of the college faculty member in such cases, we noted, is often limited to designing or adapting the software and then occasionally walking through a computer lab to make sure the machines are functioning properly. Whether the students learn in anything more than a mechanical fashion is another question.

We noted, too, that technology often constrains the freedom of that instructor. As "the wired university" becomes the norm, bureaucracy multiplies. This should not be surprising to students of the history of technological innovation in organizations. But colleges are supposedly far more democratic organizations than corporations or governments, and the bureaucracy of technology seems to clash with traditional faculty work patterns and values. That is worth remembering as we seek to harness these new tools even more in the process of instruction.

144. University of California at Irvine

Large introductory science courses in universities often leave students to flounder. The Mastery Learning approach of the Computer-Based Introductory Physics course at UC/Irvine seeks to individualize learning for each student-- and hence provide greater motivation and direction--while holding down costs.

The Educational Technology Center at UC/Irvine originally tried to implement the Mastery Learning approach in this course without the managerial and tutorial capabilities of the computer. But using the computer is actually more cost-effective, and provides feedback to the student through on-line testing, The computer thus becomes an instructor, not merely an examiner.

Students registering for Introductory Physics are presented with a series of options. They first choose between taking the course in the conventional lecture-and-textbook mode or through a computer-based presentation. Those who select the latter then choose one of two "tracks": the first based on the conventional course, drawing its material from the most popular of the calculus-based Introductory Physics textbooks (Halliday and Resnick), the second grounded in a set of notes developed by Irvine faculty so that the computer can be used in a programming mode.

Whichever of the two computer-based options is selected, students first receive an outline of each of the course units, complete with indicated learning resources and sample examinations. The student then becomes a master of his/her own time, taking the exams (2 or 3 per unit) on the computer. The computer generates different examinations for each student (there are over 600 versions of each exam--and 400 students in

the course), keeps track of student performance, requires a 12 hour delay between takings of the same test, and refers students to instructors for individualized assistance if they fail to pass a given exam in four attempts.

Approximately 70% of the students in Introductory Physics elect the computer-based Mastery Learning "tracks." We are told that they "do well in succeeding courses," though exactly what that means--particularly in relation to students who take the course in its conventional delivery system--is an open question. In terms of instructional design, though, the course was selected by Change as one of four outstanding Physics courses in the country.

145. Isothermal Community College (N.C.)

As was evidenced in many programs designed to increase the rate of retention and transfer of community college students (see Section I above), technology is often used as a means of individualizing instruction. The more diverse the student population, the greater the efficacy--i.e. the instructional multiplier effect--of technology.

The Business Department of Isothermal Community College established an Individualized Instruction Center in 1979 with programmed courses centered on self-paced audio-visual materials (slide/tape presentations with instructors working as tutors with students).

The process was illustrated for us by a 3-quarter Principles of Accounting course into which students can enter at any one of 10 dates during a given academic quarter. What was stressed, though, was not so much what actually happens in the course (nor the relationship--if any--between the classroom and the Center) as how many sections could be offered and how many students could be reached. Indeed, the figures were impressive. As the technology allows all three pieces of the course to be offered every hour the Center is open, the number of sections jumped from 3 to 33 per quarter and student enrollment increased 70%. At the same time, the failure and withdrawal rate dropped 50%, a wholly expected outcome of a program based on performance, not seat time. Costs are modest in relation to outputs, and the method allows for advanced subjects to be offered to very small groups of students.

146. Ohio State University

Faculties of baccalaureate degree programs in Nursing continue to face the problem of evaluating the competences of RNs who enter their programs with diplomas or Associate's degrees in Nursing. Short of requiring these RNs to take clinical courses that may be repetitious in terms of their experience, acceptable ways of awarding credit for their prior learning have been hard to identify.

"The Registered Nurse Student: a Facilitation Option for the B.S. in Nursing" at Ohio State provides a unique means of assessing clinical

decision-making through the use of computer-based simulations of clinical nursing situations. In this program, RNs may obtain credit for sophomore level lecture courses through proficiency examinations; may meet the requirements of the senior level course in "Nursing History: Issues and Trends" with an independent study project; and may demonstrate their ability to apply the "nursing process" taught in junior and senior level courses through a series of four computer based nursing simulations. While we might have analyzed this program under the category of Assessment (see Section M, below), we felt it better illustrated a promising option in the use of educational technology.

Each simulation provides information on the client's state of health and mind, the nurse's level of responsibility and the duration of the nurse/client interaction. This information is followed by a series of strategic options. The computer program branches according to the option selected, providing the student with feedback on all consequences and setting up a new set of strategic options based on the consequences. The branching process continues until the limits of nursing care of the client have been reached or until the student short-circuits for unsafe application of this decision-making mode.

Evidently, each option is criterion-referenced in such a way that it can be assigned a weighted score. Both faculty and enrolled students were involved in validating the options and scores and in assessing the congruence of the simulations with existing course objectives. The passing score selected for each simulation is one standard deviation below the mean score of enrolled students involved in the validation.

This evaluation system was made easier to develop by a division of Ohio State's College of Medicine that possesses both programmers and technical experts in simulation development (a more and more frequent mode of instruction in medical schools and hospitals). The programs are secured in a system requiring three distinct access codes and yet provide off-line feedback to the students.

Since the program was initiated in 1981, eight students have made 34 attempts to challenge junior level nursing courses through the simulation process. All eight have been successful, with only two having to repeat a simulation. OSU faculty have offered workshops on this strategy to nursing educators from 21 states and Puerto Rico; and have pointed out that once the simulations are no longer in use for evaluation, they can be modified for instructional purposes and made available to others.

147. University of Rochester

The Integrated Chemical Information Curriculum is addressed to science majors in an elite university, and involves a multi-dimensional notion of educational technology that is not frequently used in college-level instruction. The program proceeds from the premise that while college and university students are taught scientific fundamentals, they generally do not learn how to locate information hidden in books and journals or in certain data bases. Separate library instruction at Rochester had previously failed to meet the needs of science majors, so

a strategy of integrating information resources into the undergraduate curriculum was developed.

The first phase of the curriculum involves students in the principal source materials in organic, inorganic, organometallic, physical and nuclear chemistry in the context of their regular laboratory activities, while Chemical Abstracts computer searching is taught in separate Saturday lectures. In the second phase, students are exposed to a series of advanced topics in chemical information which emphasize on-line computer retrieval of both bibliographic and non-bibliographic resources, and which are integrated with independent research. Trained undergraduate tutors assist in individualized instruction.

Each phase involves information problem-solving experiences using both printed and computerized sources. Students are judged on how they prioritize potentially useful citations from sufficient numbers of sources and on their ability to distinguish optimum from representative information. The immediate result in terms of student learning is indicated by the fact that chemistry undergraduate test scores on the Library Skills Test have been consistently higher than those for entering graduate students. Student attitudes are positive, and more than passingly endorse the notion that the habit of being connected to current developments in the field and of being able to locate relevant references and background for research is central to learning in the sciences. A noteworthy unintended consequence has been the reacclimation of faculty to information searches.

148. University of Delaware

It is helpful to receive at least one profile of an all-university Office of Computer-Based Instruction, even if the information tells us much about organization and general processes and virtually nothing about content.

The University of Delaware's OCBI has used the PLATO system since 1974, delivering instruction through 132 terminals on campus and an additional 70 off-campus. There are program libraries in over 80 subject areas and half the materials utilized are on-shelf. Delaware faculty in 30 departments have developed the rest of the programs in cooperation with OCBI programmers. In addition to programmed instruction, the system is also used for student evaluations of computer-based materials and in faculty research.

Reporting to the Provost, the Office has four components: Operations (maintenance, training, communications, resource management, data storage and transfer); Outside User Services (under subscriptions and contracts); Research; and Program Development. It is the last of these which bears most closely on instruction and does so through teams composed of faculty project leaders, office programmers and coordinators. All instructional program proposals are reviewed by a faculty advisory committee which makes recommendations to the Provost on their implementation. Faculty have found that the task of developing computer based instructional materials involves them in intense study of

their own objectives and curricula, and thus eventually improves instruction by clarifying that often muddled relationship.

The profile we read also implies that the computer system is used in personal counseling, providing students "an anonymous way of asking questions about sensitive matters." Despite the seemingly impersonal nature of receiving such advice from a machine, for some students, this may hold more important benefits than the authors of the profile hint.

149. San Antonio College

The Multimedia Personalized Systems Laboratory directs its efforts toward developing competence in English among disadvantaged students with severe academic deficiencies. Between 1967 and 1982, the percentage of students entering San Antonio College with ACT/Verbal scores below 15 (18.2 is the current national mean for all entering freshmen, with 15.7 the mean for entering two-year college freshmen) had increased from 28% to 75%. It became obvious that students were unable to handle the basic reading and writing demands of either academic or occupational courses.

The Laboratory was established in 1979 as an integral part of the Basic English course. It utilizes multiple technologies and an open instructional schedule to accomodate different learning styles, the requirements of teaching time, and the attendance patterns of many part-time and adult students. The ideals of this approach are self-pacing and individualization.

The stuff of learning lies principally in the area of writing; and the "software" in the Laboratory is focused on five units of study: punctuation, grammar, sentence structure, diction and style, and logic and organization. The technology is organized around 50 carrels and a larger classroom for group instruction using a large, multicolor video beam display screen in conjunction with other media. Each carrel is equipped with a slide projector and cassette player so as to engage the visual and auditory senses in learning (separate special facilities are available for the vision and/or hearing-impaired). A more limited number of typewriters and computer terminals provide an individualized testing system that draws on a data bank with random access that allows for immediate feedback. If students run into difficulty in the course of working through a study unit, a "dial-a-tutor" learning line is available.

With a plethora of technology and open hours, it is not surprising that "student contacts" with the Lab increased more than 50% between 1979 and 1982. During that same period, the percentage of students receiving Ds and Fs in Basic English fell from 54% to 11%--which, in terms of program evaluation, is a strong coincidental indicator. (ER)

150. Georgia State University

"Decision sciences" is a term used to describe the study and use of interactive computer capabilities in the processes of problem solving in a variety of fields, but particularly in business and industry. The

Decision Sciences Laboratory (and the related Master of Science degree program) at Georgia State illustrate a rather sophisticated approach to what others refer rather glibly when talking about instructional technology. In the context of our interests, this is a "meta-program." That is, both the research and the instructional process reflect on and develop the technologies themselves as tools in the context of different kinds of organizations.

To read the profile of this program is to understand--however indirectly--how technologies can change colleges (as one of those "different kinds of organizations"). As the authors point out, however, the introduction of technology in an organization is not effective if all it does is to improve "the efficiency of isolated tasks," or if it is considered apart from the changes it brings in human behavior and interaction, as well as in the technical, legal and economic status and functions of the organization.

The Decision Sciences Laboratory, as an organizational unit of the university, performs applied research concerning office automation, telecommunications, and computer-based decision support systems that reduce the degree of technical expertise necessary to build models for managerial decision-making. Its basic line of inquiry seems to be the organizational impact of information technology, which means that it will look carefully, for example, at how office workers respond to different configurations of an electronic information network.

Workers in education (such as students and faculty), like those in offices, are knowledge workers who are constantly making decisions based on their perception, interpretation and reshaping of raw information. To judge the quality of their performance and the nature of their response to an environment changed by technology is very difficult because the variables appear mushy. But students in the M.S. program who work with challenging questions from the Decision Support field such as "how do you generate models that will find problems?" or "what are the most effective models for generating alternative scenarios dependent on the solution(s) to the problems found?" are, in fact, engaging in activities that can be judged in terms of the effective transfer of information.

The degree program is divided into required background courses such as an introduction to decision models, core courses in a specific field such as business information management, and electives that allow students to reinforce business administration specialties such as finance, accounting or marketing. Instruction is braced with interactive computer models that present decision-making games, case studies in organization systems, and computer simulations for strategic planning in complex organizations. The authors describe the graduates of such a program as "technologically sophisticated MBAs." While that may represent a necessary background for specific jobs in a changing workplace, one wonders whether it is sufficient for a changing world.

Other Programs in This Category

Univ. of California/Santa Barbara

The Program in Quantitative Decision-Making at UCSB is a very new undertaking designed to provide subject-specific text materials for use in microcomputer labs in lower-division Applied Math courses. While it is difficult to tell from the profile we received, we infer that the Math Department works with faculty from Business, Education, and Science departments to develop these materials (as well as software) and to integrate the use of microcomputers into the curriculum.

There is a basic quantitative decision-making package involving instructional modules in logic, set theory, relations and functions, computing with functions, Monte Carlo optimization, combinatorial analysis, probability theory, matrix theory and linear programming. Each module opens with a narrative, proceeds through a sequence of computer-based problems, offers a test and concludes with an additional set of problems to be worked out on paper. These materials have been used in "several courses"--but we're not sure which ones. UCSB reports that these courses attract many students, who, evidently, are given a choice as to whether they want to use the computer-based materials or work through the traditional course syllabus. Exactly how that works, though, is an open question of instructional management.

Benedict College (S.C.)

The Kenan Project at Benedict College is a supplementary computer-assisted instructional system for lower level science courses serving students from rural areas who enter college with very limited backgrounds in science and technology. The objectives of the program, which seem related more to exposure and participation in the sciences than performance, should remind us that rural high schools have limitations as severe as their urban counterparts, and more so in core curricular areas such as math and sciences (and foreign languages, too).

The program has been in operation since 1979, and serves the entire freshman class (for whom two science courses are required during that year), as well as all majors in the division of Health and Science. The system itself is fairly mechanical: the software consists primarily of multiple choice and/or completion questions designed by faculty and inserted into the programs; and students are told only than an answer is right or wrong (and, if wrong, the correct answer is displayed). The results of each student's recognition-and-recall computer lab sessions are automatically recorded by master management software, and instructors can access each student's file to determine progress. The program is voluntary; but students who take advantage of it have consistently received higher grades in their basic science courses (which, given the nature of the process, is not surprising). A secondary consequence of the program has been a notable increase in the percentage of undergraduates majoring in science and mathematics.

Part K: LANGUAGE: EXPANDING PERSONAL SPACE

The national concern with decline in the verbal skills of students at the secondary and postsecondary levels usually focuses on writing. Some claim that the act of writing in society--particularly in the workplace--is passe, so a decline in performance really does not matter. But there is no evidence whatsoever that the age of information technology has eliminated the necessity for writing--and writing well. In fact, the deficiencies of college graduates that were cited most frequently by employers testifying to the National Commission on the educational preparation of all new employees were those in communication skills. Employers know that the more technological our economy and the more we process information as a commodity, the more writing will be required in a changed workplace where academic skills are superseding manual skills. Thus, those who possess a high level of competence in communication skills will be able to participate in the information economy. Those who don't, won't.

Notice, though, that employers cited communications skills in general, and not writing in particular. There are four language skills, not one; and they are all related, though in ways we understand too imperfectly. While there are philosophical arguments and psychological evidence about the issue, many of us believe that all four language skills--reading, listening and speaking, as well as writing--should be active ones, engaging the mind and involving decoding, interpretive and encoding processes. But because writing requires a greater investment of time, reflection and energy, we tend to think of writing more as a performance than the others.

Our uses of language form the boundaries of our personal, social, economic and cultural space. The spaces are complex; and the boundaries are elastic, so that by expanding our language facility, we can fill the spaces. The advanced command of language that colleges seek should perform this role of expansion for individuals. Colleges emphasize writing in this process, partly because it is the principal medium of academic business, so to speak. This makes sense, as writing involves the structuring of concepts, the composing of patterns, the development of linguistic and cognitive relationships. As the same time, the other language skills should reinforce the processes of writing; and some of the programs reviewed here attempt to do that.

I admit that the collection of profiles received in this category is limited (though other communication skills programs are reviewed in Sections A, B, I, J, and M). What I sought to do in this selection was to illustrate a range of program types, to make sure that all four language skills were covered, and to include the only profiles on foreign language instruction we received--as well as a very important program on the preparation of future college professors as teachers of language.

The question one ought to ask about all these programs, though, is precisely how colleges emphasize and develop the various language skills, and, in the case of writing, to ask what forms college writing takes and in what contexts college writing in these different forms

occurs. The "writing-across-the-curriculum" movement, for example, can achieve only so much if the dominant form is expository, analytical, and formulaic. If may go much further if the Biology professor knows how to encourage a Lewis Thomas or the Physics professor an Italo Calvino or the Management professor a Peter Drucker. Using forms of writing associated with fiction or drama--dialogue or narrative, for example--will stretch the boundaries of a student's language space, and are appropriate to many disciplines.

Of course, much of the energy expended in college English programs these days focuses on remedial work. There is a serious question about how fast the lack of prior preparation and practice in language skills can be overcome. It has been suggested that if we want language--and writing, in particular--to be taken very seriously in both schools and colleges, we ought to transform all our de facto national examinations (the College Board Achievement Tests, the ACTs, the Graduate Record Exams, etc) from multiple choice to written formats. By such means, it is held, would writing be restored to the center of the curriculum--very fast, indeed. Maybe so; but as one of our profiles explicity acknowledges, there are "no quick fixes" here.

Nonetheless, in this section and others, we witness numerous attempts at swift remediation through so-called "Language Skill Laboratories," and that is sometimes troublesome. The more mechanical and behavioristic the instructional methods in those Labs, the less the chance that they will produce good writing. Beneath the surfaces of the language that can be programmed into a computer lie nuance and context and the broader idea of "understanding" that the shared use of language represents. Writing is a social act that is best directed to and shared with others. That does not happen with most technologies designed for individualized instruction. It takes a good writer--not a mechanical writer--to teach good writing, to expand the complex language space of our students.

151. Virginia Community College System

The Virginia Community College System Writing Project is based, in part, on the Bay Area model used by the National Writing Project, but is focused wholly on the needs of community college writing teachers in upgrading their teaching skills.

The program operates principally through a five-week residential summer institute for writing teachers from each community college campus in the state system. A continuing dissemination component runs through the academic year, providing materials and in-service seminars in different areas of the state. Funding from the State Council for Higher Education in Virginia covers stipends and housing costs for participants.

While the program is undergoing formative evaluation, the analyses to date indicate a renewed respect for the writing and teaching profession among community college faculty, and more positive attitudes toward colleagues and students. Many of the faculty have been actively involved in research stimulated by the summer program and have published articles on the teaching of writing. Whether their students improve

their writing skills and develop more position attitudes toward writing, however, is an unanswered question.

152. Michigan Technological University

The Writing-Across-the-Curriculum program at MTU is a comprehensive institutional development effort to restore writing to the center of the academic enterprise. But, as is characteristic of similar programs, students are the secondary beneficiaries. The program focuses principally on faculty in all disciplines in order to influence student achievement through improved pedagogical practice.

Begun in 1977, the MTU project integrates a required one-year course in freshman composition with upper-division specialized courses in business writing, technical writing, creative writing and advanced expository writing. In addition, enrollment in humanities courses has been limited in order to permit more frequent assignment and evaluation of student writing. A language skills laboratory, faculty writing workshops and faculty seminars on writing issues in various departments round out the basic program components.

Faculty workshops are the heart of the matter: four-day, off-campus sessions offered twice a year. Leaders and participants are recompensed for their time, and follow an inductive approach to the composing process through experiential exercises, problem-solving discussions and collaborative writing practice. Nearly half the faculty of the institution have participated--no mean achievement in itself.

During 1982-1983, the Humanities Department conducted an extensive evaluation, of which three components are especially worth noting: (1) a survey of actual writing practices in the classrooms; (2) alternate year senior writing sample assessments (holistically scored); and (3) individual class experiments controlling for particular pedagogical practices. While the results of these evaluations are incomplete, we know that the secondary benefits of the program have been substantial. In fact, one might say that this has proven to be a successful exercise in organizational development analogous to the Computer Literacy project at Wheaton College (see #102). The National Council of Teachers of English has published the project design in book form, and project staff have served as consultants and workshop leaders at other institutions. Within MTU itself, faculty report increased collegial interaction in areas outside the scope of the project.

From 1979-1983, the program was supported by a grant from the General Motors Foundation. Although external funding was important to the development of the program, it appears that prior institutional commitment was even more important. That commitment is likely to continue. Indeed, the authors of the profile advise others that there are no "quick fixes" to the problems addressed, and that faculty engaging in such an effort should be prepared to do so for the long haul.

153. Beaver College (Pa.)

The theoretical base of this Writing-Across-the-Curriculum program, supported by an NEH institutional development grant, assumes that writing is a cooperative, interactive process and a form of social behavior in each discipline. Given that process and behavior, the responsibility of the institution is (1) to model the processes, wherever they may be found, and (2) to foster collaborative learning in all settings.

The program implements these assumptions in a Freshman composition class, through the teaching of writing in all courses, and through a graduate program in the teaching of writing. The result is a comprehensive, connected approach at all levels.

An initial placement test determines whether a student takes 2 or 3 semesters of Freshman composition. The Freshman course itself requires writing practice at a minimum rate of 1000 words per week and four major writing assignments, one of which is coordinated with a student's assignment in another freshman course. In subsequent courses in all disciplines, students learn to do multiple drafts of papers and to critique the work-in-progress of their classmates. In addition, all instructors require in-class writing; and trained undergraduate writing "consultants" are available to assist students in both a Writing Center and during scheduled "dormitory hours."

Assessments of the program have focused on surveys to determine what students do in writing in different courses, how they define and understand writing, what aspects of writing instruction they find particularly valuable, what kind of comments they receive from faculty about their writing, and where their major problems in writing arise. This effort has been fairly systematic, and the results demonstrate the value of this approach in a field in which the task of measuring improvement strikes many faculty as formidable. (ER)

154. Lake City Community College (Fla.)

The Interrelated Language Skills program at Lake City Community College focuses on the underprepared adult learner, an increasingly important constituent of American community colleges which, as the profile notes, "became the centers of remediation" in higher education in the 1960s.

Sensitive to the abilities, needs and frustrations of its rural constituency in northern Florida, the Lake City faculty examined the early efforts of the community college remediation movement, and concluded that

> "the time, money, and effort devoted to redeeming the underprepared student have been wasted on poorly designed curricular models, short-sighted goals, and inappropriate materials and methods. Traditional remedial courses are mainly attenuated versions of the regular college-level courses. Diagnostic testing and accurate screening often are overlooked as students are placed in programs based on vague objectives and unsubstantiated philosophies. A deficiency in verbal skills has plagued the underprepared student,

yet few remedial programs have focused on the development of these skills."

As a result of this analysis, Lake City faculty developed a program that would integrate instruction in reading, writing, speaking and listening, that would begin with oral language skills, and that would give considerable attention to the development of students' self-concept. In a 16 week program (involving a minimum of 12 class and tutorial hours per week), Lake City covers notetaking, outlining, dictionary use, and research skills in addition to the basic canon of language development. In keeping with its philosophical approach, all classroom activities are designed to incorporate more than one communication skill, e.g. a writing assignment is preceded by listening, viewing, reading and speaking or a proofreading assignment is carried out through the oral reading of a composition.

It is important to note that this is a total immersion experience analogous to second language learning: during the 16 week period, participating students do little else (though they are encouraged to register simultaneously for music or physical education courses in order to help them with the task of integrating themselves with the regular student body). The credit they receive for the course is "institutional," i.e. non-college level credit.

Recognizing that the effectiveness of a remedial program such as this can only be assessed in subsequent coursework and retention, a control study of 26 students who had completed the program was undertaken. Compared to those in the College's Basic English course, these students scored higher in reading and vocabulary (with analysis of variance confirming the effect of the Program), and evidenced a retention rate 20% above the all-College average.

155. California State University/Fullerton

How often have we found college textbooks that end each chapter with examples and questions that strike students as more confusing than enlightening? The textbooks may not be well-written; but it is more likely that the students are not reading them well and are not organizing and integrating what they derive from the texts into the overall content of the course at issue. "Left to their own devices," faculty at Calif. State Univ./Fullerton observed, "students rely on inefficient strategies for coping with text assignments." The faculty thus sought an alternative to "the read-memorize-regurgitate-forget cycle."

The answer was the Critical Reading Program, a strategy that adds 10-week, 1-credit minicourses to basic survey courses in history and economics that are heavily reliant on textbooks.

Each minicourse is developed by a faculty team composed of the disciplinary course staff and members of the Reading Department. The team analyzes features of the textbooks such as reading level (usually 10th-11th grade), specialized vocabulary, key concepts, examples, etc.,

and then develops a reading "guide" to be used in the add-on. This guide includes:

(1) "Graphic Organizers" to help students map out the concepts being presented, and hence perceive relationships among those concepts;
(2) "Selective Reading Guides" that either (a) ask students to define, illustrate and apply key concepts presented in a specific section of the text, or (b) walk the student through a chapter with a governing question posed prior to every 2-3 pages; and
(3) Something called a "concept outline," which was neither explained nor fully illustrated in the materials we examined.

In addition to the "guide," the mini-courses allocate time for integrating text and lectures and for developing techniques of summary and synthesis. As the semester progresses, students are encouraged to develop more open-ended reading guides themselves.

Evaluation of a program such as this must be carried out along two lines of inquiry. First, student assessment of the advantages and disadvantages of the different types of guides; and second, comparisons of performance of those students who elected the mini-course and those who did not. On the first score, CSF faculty found that, as the semester progress and as students became more comfortable with a course, their preference for the more flexible and open-ended guide forms rose. On the second score, e.g., mini-course students in the basic Economics survey course achieved a slightly higher mastery of subject matter (measured by pre- and posttesting) but with a much lower standard deviation (not surprising in light of their common experience), and considerably higher course grades. Certainly, as the profile notes, the students who devote more time to a subject tend to be more motivated; but that cautionary footnote to the interpretation of grades should not detract from the overall value of this approach to college-level reading.

156. Tennessee State University

According to the analysis of Tennessee State University faculty, a majority of their students come from "culturally deprived environments" in which the dominant dialect is not the standardized American English that the University--let alone employers--demand in written and oral communications. As evidence, the writers of the profile cite 1975 data indicating that 71% of the entering freshmen scored below 15 on the ACT English examination (and 15, in turn, is well below the national mean). While we were not provided with any data after 1975, we were provided with a description of a very puzzling program that was established to respond to the deficiencies of these students.

What we have is a Writing Clinic, founded in 1977 after a two-year pilot program in the English Department. We are told a great deal about the processes of the Clinic and not too much about content: attendance is voluntary (but mandated by some freshman English instructors); tests are administered and writing samples analyzed for organization, grammar, usage, mechanics, and syntax; students work individually on one or more of these areas--and as often as they wish--with an instructor checking on their work at least once during the time they are in the Center on a

given day; most students are introduced to a 12-sentence paragraph model of composition designed by the staff; and there is an individualized retrieval system under which, using a folder, students work through a series of assignments, drawing on audio-visual aids and other self-instructional materials as they proceed.

So what is puzzling? First, if "dialect" problems are the pathologies, a supportive service devoted wholly to writing is not necessarily the proper prescription. Dialect describes a form of the spoken language; and students who both speak and are attuned to non-standard dialects require a holistic approach to language arts involving all four language skills: speaking, listening, and reading--as well as writing. The success rate of a supplementary comprehensive communication clinic for this population would be far higher than the 27% of students indicating that "they had experienced great improvement in their grades because of Clinic attendance." Of course, self-reported grades--let alone self-reported causal analyses--are hardly good measures of program impact. It strikes a reader that if Tennessee State still uses scores on the ACT English exam as the initial index of the problem, then why not use that exam as a post-test?

157. Johnson C. Smith University (N.C.)

What is called "The Writing Center" at Johnson C. Smith University (in contrast to the one at Tennessee State) involves a comprehensive approach to communication skills emphasizing writing. Many of the processes are the same: diagnostic testing and self-paced instruction. But the Center employs modular audio cassettes that help students work through 6-unit "skill packages" covering diction, vocabulary and phonetics (topics that help students who speak non-standard dialects) as well as classic topics in writing. In addition, the Center offers more structured instruction in such practical communication skills as conducting interviews, making introductions, and writing resumes; and offers its services and self-instructional materials to students in any stage of their college education. This comprehensive approach has filtering effects: the remedial student shares the same facility with the more advanced student who has come through the same valley, now stands on a higher plateau and yet is still working to improve his/her communication skills. The example can only be an inspiring one.

While the evaluation data on the nearly 1200 students who have "successfully completed the program" to date were very generalized (self-reports, feedback from instructors, etc.), the presentation is at least convincing by its enthusiasm. It would be more convincing, still, if the Center developed some external reference points with which to measure its success.

158. Peirce Junior College (Pa.)

Peirce Jr. College submitted a profile of its Associate in Science Degree program in Court Reporting for reasons other than those we chose to review it. Training a court reporter is not like training a stenographer: it involves achieving proficiency in critical language skills so as to produce clear and logical accounts of proceedings that

involve the technical language and concepts of the law and (often) the technical language of medicine. Listening skills are obviously critical (mastery of 4 voice dictation is a must), as are those of the copy editor; and a large and flexible vocabulary must be developed.

The College uses dictation material in English classes, and, in tests of correct usage, asks that students provide not only correct answers but logical explanations for their choices. This requirement involves students far more in the stuff of learning language skills than mechanistic methods or the emphasis on mere recognition and recall endemic to multiple-choice testing. Likewise, to develop the student's proficiency in medical terminology, the student does not merely use a programmed text in an adjunct fashion, but simultaneously takes a regular academic course in Anatomy and Physiology. Courses in Contract and Commercial Law, and an internship round out the program.

Can some of the methods of preparing court reporters be adapted to language skills development courses for other college students? Peirce graduates perform above the national average on their certifying exams, suggesting that there is something going on in their methods that may be worth examination by others.

159. Brooklyn College/CUNY

Nil sine magno labore ("nothing without great labor") is the motto of Brooklyn College; and it is most applicable to the Latin/Greek Institute.

We were tempted to place the Institute under the rubric of Honors Programs; but it is far more instructive as an approach to language learning. In ten-week summer sessions conducted each year since 1973, the Institute has provided high-powered, intensive instruction in ancient languages to both gifted and motivated students not only from Brooklyn but from other colleges and universities around the country. The target populations include lower classmen who have had no language training prior to college, graduate students who require facility in Latin or Greek in order to pursue their research, postdoctoral students, professionals and others who, for a variety of reasons, desire the enrichment of exposure to ancient texts in their original language.

Participating faculty are rigorously trained in the methods of team teaching in a highly structured, total immersion program (even the secretaries have degrees in Latin or Greek and also serve as tutors). They rotate from section to section, and are available to students 24 hours a day, in person or by phone. Students attend classes for 6 hours per day, with extensive preparation (5-6 additional hours expected daily). An innovative modular schedule geared to the needs of students at different stages of the learning process, and a system of daily advisement and examinations that monitor student progress all allow for attention to individual learning patterns. Despite the demands of the program, such attention no doubt reduces attrition rates (which average 25-30%--in contrast to the 80% rates recorded in most college programs in classical languages). Student achievement, as demonstrated on standardized examinations, subsequent upper division course work, and

publication, exceeds that expected even from those who can pass a rigorous admissions process.

160. Francis Marion College (S.C.)

The considerable variation in the preparation of students enrolling in introductory French courses at Francis Marion College led to anxiety among the less prepared, boredom among the better prepared, and frustration among the faculty. At the same time, the foreign language faculty were keenly aware of the fiscal impracticability of offering multiple, ability-grouped sections of their courses.

By 1979-80, faculty attempts to frame a solution led to the realization that self-paced instruction, allowing for heterogeneous grouping in the same classroom, was the most appropriate delivery mode. To match the mode, better instructional materials were required. Faculty examined materials being developed elsewhere for self-paced instruction--and across all four language skills (writing, reading, speaking, translating), and concluded that local needs required locally designed, and more student-centered materials. While the instructional modes chosen seem to emphasize the printed word over the spoken, while the examinations the student chooses to take when he/she feels ready are written and not oral, there are a separate set of language laboratories to complement this emphasis. Proficiency, and not time, is the objective of such a mastery learning approach; and students may take up to two semesters to complete a given course.

Four semesters of French are now taught in the self-paced mode at the same hour in the same classroom, with two instructors present to assist individuals and small groups as needed. Evaluation seems to rely principally on qualitative judgments; but the impact of the program can be measured, in part, by the absence of the need for grammar review in intermediate-level courses.

161. The University of Virginia

The ability of most colleges and universities to deliver the kind of instruction in language that expands students' personal space at the same time that it brings them into a society and economy of communicators is dependent on the quality of faculty training. Most graduate programs in English emphasize literature and scholarship far more than language and pedagogy. And, regardless of discipline, most graduate programs do preciously little to prepare future college teachers as teachers, assuming that the art and knowledge is acquired by osmosis and, in any event, is the responsibility of the institution-of-first-employment.

The University of Virginia offers a very distinguished and highly-ranked graduate program in English that presents the Ph.D. candidate a choice of two tracks: "Language, Literature, and Research" or "Language, Literature, and Pedagogy." While not questioning the merits of the former, it is our intention to draw attention to the latter by comparison of degree requirements.

The research Ph.D. expects students to practice teach one course per semester for a period of from 4-6 semesters. The teaching Ph.D. builds in 16 credit hours (out of 51) of requirements in pedagogical theory and practice, and another 6 in languages studies. The Program also requires both one semester of part-time teaching that is evaluated by members of the Department and one year of full-time teaching in an accredited institution (college or secondary school). The literature/criticism course requirements of the teaching Ph.D. program also recognize that college English teachers are called upon to handle more and more survey and general Humanities courses, and hence demand a far broader coverage of periods and genres than is encouraged in the research Ph.D.

The qualifying oral examinations for the Ph.D. in Language, Literature, and Pedagogy are in three parts, one of which covers the theory of composition or reading, "with pedagogical applications." Instead of a single thesis, the Program requires two "final discourses": one in literary critcism and the other on "educational theory or the teaching of English, or a case study, suitable for submission to a literary or educational journal." And the foreign language requirement for the Program allows students a number of options to demonstrate advanced reading knowledge in one language other than English.

In a 1978 article about the program in College English, Harold Kolb refers to the strategy of the Language, Literature, and Pedagogy program as "watering up the Ph.D." In light of the realities of faculty work and student needs in English, we heartily concur.

Part L: JOINT VENTURES OF COLLEGES AND EMPLOYERS/WORKER EDUCATION

Movements for worker education are not new. In fact, they date to the period of rationalization of both industry and the workforce in Europe and the United States in the early decades of the 20th Century. Nonetheless, education and training programs for employees--whether operated by employers themselves, by unions, or by colleges, community colleges and universities--have experienced spectacular growth in numbers and complexity in recent years. The estimates on employer-provided programs range widely, but the most conservative of them claim that between 5-6 million adults are enrolled in regular courses of study in the corporate sector alone, and that corporations spend between $30-50 billion per year on those programs.

Most of the vast non-system of employer and union provided education receives no input from higher education. Where that lack of input is severe--and where state law and practice permits--corporate colleges offering their own degrees have been established; and nearly all such degree-granting colleges founded to date are regionally accredited. In many ways, such developments represent a significant challenge to higher education--they say, in effect, that there is something we are not doing as well as we should be doing. What has resulted is a degree of redundancy in American education in that employers are covering some material in their courses that should have been learned earlier. Redundancy, of course, should be distinguished from necessary repetition in the provision of education. That is, there would be no second or third chance for many adults without the direct provision of educational programs by employers.

That, in fact, is part of the motive behind the continuing education of the workforce. But there are two other modes in which that continuing education is carried out, and in which our principal interests lie. In the first, employers provide "entitlements" for employees to continue their education at institutions of higher education; and these entitlements are part of the benefits package. In the second, employers contract outright with colleges to provide specific programs for specific groups of employees.

The programs taken by individuals under entitlement provisions and those taken by groups under contract can range from traditional liberal arts baccalaureate degrees to baccalaureate or associate's degrees with occupation-specific majors to training courses in very discrete occupational skills to courses of study or services that provide a liberal arts context for a specific occupation or industry. Our selections in this section are designed to illustrate each of these program types--though the most interesting to us were baccalaureate degree programs that sought to develop the employee as a whole person and not merely to serve the narrow needs of the employer.

It is very important to note that the clients for these programs are not merely occasional or part-time students--they are workers. Given the rapid changes in the workplace, some will be changing careers three or four times; others will be seeking advancement within a career or within an organization. But one of the persistent patterns we noticed--here

and in other sections of this document in which programs for adult learners are described--is the tendency for the employee to seek (and the colleges to offer) business curricula to meet this objective of "advancement within a career." For those in dead-end blue and pink collar jobs, this strategy may work. At least it opens the door to lower level white collar positions. For others, however, it is a questionable approach, as the AT&T "Management Progress Study" cited in #164 demonstrates. One might offer the same advice to these students as one would offer to full-time, traditional age undergraduates: if you want to meet the ideal expectations for college graduates as expressed by employers (see the introduction to Part D, in Volume I of Starting with Students), there are far better routes than Business Administration curricula.

That issue aside, what do we learn from this very limited sample of programs in terms of making cooperative educational ventures, particularly those of the contract type, work? One has to read between the lines of the profiles we received; but I think that six factors are key:

1) The initiative for establishing the program should come from the employer or union, not the institution of higher education. There is an understandable degree of skepticism among employers when colleges behave in blatantly entrepreneurial fashion in response to the availability of employee educational entitlements. On the other hand, the proprietary interest of the employer or union is critical to a strong foundation for a program.

2) Once the initiative has been taken, however, the college should insist on both a core curriculum of liberal education--no matter what the employer or union wants to add to that core--and appropriate academic standards. And by a process of assessment similar to that used for regular entering freshmen, the college should determine which employees are equipped to undertake the program and which need special preparatory work.

3) The development phase ought to involve joint seminars devoted to an understanding of the ways in which academic work enhances productivity in the workplace. Both the personnel departments of corporations and public agencies and college faculty and administrators have much to learn about the context in which the other parties operate.

4) Colleges should seek a balance between the "group degree" program model in which a large segment of the curriculum is prescribed and the individualized degree model that provides the adult students with a reinforcing sense of uniqueness.

5) As much as possible, these programs should lead to degrees, not certificates or diplomas.

6) Balanced responsibility for program administration. The role of the college should not be limited to record-keeping, and that of

the employer or union not limited to signing checks for educational services.

While there may be other elements in a formula for success, on the basis of reading profiles of the programs reviewed below, these strike me as strong initial guidelines.

162. Memphis State University

Our particular interest in the comprehensive operations of University College at Memphis State lies in three Bachelor of Professional Studies degrees offered in group programs to employees in cooperation with employers and a union; but these can best be understood in light of the overall operations of the College.

University College was established in 1975 to serve the needs of mature students through alternatives to traditional degree programs. Over 90% of its 500 students are 25 or older, and an equal percentage have previously attended college. All students develop a "Baccalaureate Contract" in such a way as to articulate their academic objectives and design their program to assure advising committees that those objectives will be met. Whether programs are individualized or group, the Contracts are required to include:

- o 37 credit hours of lower division interdisciplinary liberal studies courses, e.g. Verbal and Visual Communication, International Studies, Heredity and Ecology;

- o 6-12 credit hours of "Thematic Studies" upper division interdisciplinary courses such as Political Economy, Language and Mind, or Technical and Instrumentation Theory;

- o a 9 credit hour independent study project; and

- o a minimum of 30 upper division credits in an interdisciplinary major that may include internships and credit for experiential learning through a rigorous portfolio assessment process (see #s 170-173 for other examples of portfolio assessment). Students may also use CLEP or credit by departmental examination in both their major and electives.

Some 60% of University College students design individualized degree programs; the other 40% are involved in group curricula. One fourth of this group are taking informally organized programs, principally in human services and health care fields. The remaining 3/4th are in formal programs requested by and designed for their employers or union. All these programs are delivered on-site through both formal courses and independent study. With their key variations, they are:

(1) An Aviation Administration degree program for employees of the Federal Aviation Administration, and for which the college awards 34 credits for learning represented by the Journeyman's license.

(2) A degree program in Nuclear Industrial Operations to employees in the nuclear power industry in New Hampshire, Arizona, Connecticut and Mississippi. In this program, courses are offered on a total immersion model for time periods ranging from 1-6 weeks; and students are expected to take some General Education courses (unspecified) at a local college. This strategy respects the often very intense work schedules of employees in this industry.

(3) A degree program In Fire Prevention Technology and Fire Administration for members of the International Association of Firefighters in Tennessee and four neighboring states. Out of state students take some General Education courses (again, unspecified) at a local college. The balance of their work--including Liberal Education and Thematic Studies--is pursued via independent study.

Evidently (though nowhere in the profile was it stated directly), the Liberal Education and Thematic Studies requirements apply in all three of these programs. If so, we have a real breakthrough, as these components provide the stuff by which career-oriented curricula can be integrated into larger fields of knowledge and theory, and enable students to develop the capacities for independent reasoning that are increasingly demanded in the workplace.

The very rich profile we received provided a comprehensive view of the work of University College, and thus did not dwell on these particular programs in detail. It would be helpful to know, though, how the University, the employers and the union got together, how they planned and negotiated the substance of the group degree programs, where the quality controls lie, who pays, and other such practical matters of interest to college faculty and administrators.

163. Pace University

The Associate Studies Trimester Evening Program (A-STEP) is designed for full-time white, pink and blue collar workers, and combines liberal arts and business curricula in a trimester model that allows completion of the degree in three years. The flexible 60 credit curriculum is offered two nights per week. The program also provides study skills workshops, counseling, and other support services.

Initiated in 1975 by the Women's Center for Educational and Career Advancement of the National Council of Negro Women, the program then served Black and Hispanic women employed in clerical or technical positions in banks or financial institutions who had not attended college previously. The academic year was divided into four 10-week cycles during each of which students carried a prescribed 6 credit load. The program has since been restructured to serve a broader population, and to provide more flexibility for students. Direct links with employers are not as strong as they initially were, but recruitment is carried out through direct mailings to employers--including major banks, telephone companies, brokerage houses and insurance companies. Evidently, too, some students (we are not told how many) come to the

program with employee educational entitlements or other forms of employer reimbursements.

The curriculum offers students two different schedules to work through a common core of English, Math, Sociology, History, Psychology, Art, Business, Marketing and Management courses, and allows from 4-12 credits of electives. Some courses (e.g. Report Writing and Introduction to Algebra and Statistics) are competency-based; and new students are required to attend Study Skills workshops especially designed for adults.

Admission to the program is not automatic: out of over 1500 applicants, roughly 400 students have enrolled in the program. Many students stop-out for a trimester, but return later to complete the program; and one indication of success is a 73% retention rate. There have been approximately 100 graduates, one third of whom have moved into baccalaureate programs. (ER)

164. University of Pennsylvania

"The effect of specialization has been the corruption of the notion of career," write the administrators of the Penn-CIGNA Program on Liberal Arts and Human Occupations in introducing the idea of offering a liberal education leading to the Associate's or Bachelor's degree to employees of CIGNA Corp. (formerly INA). Through the study of the traditional liberal arts, the program seeks to brings students to the ability to relate career and work to a far broader web of knowledge, including cognitive psychology, organizational sociology, and literature that is particularly illustrative of human choice and development.

What is particularly significant about this Program is that it loudly endorses the contribution of the liberal arts to the development of human capital in business and industry and to the career advancement of those whose primary academic background lies there. The Program cites a 20 year "Management Progress Study" conducted by AT&T that demonstrated that humanities and social science majors "turned in the best overall performance," ranked "highest in administrative skills, interpersonal skills, intellectual ability and advancement motivation," and evidenced "the greatest degree of management potential." Indeed, the AT&T Study showed that humanities and social science majors advanced further and faster in the corporate management hierarchy than either business majors or engineers!!! If that message has yet to reach typical undergraduate students, it certainly has reached the management of corporations such as CIGNA.

Admissions requirements are set by the University's Division of General Studies. Approximately half the applicants are accepted, with another quarter being offered a non-credit preparatory program.

The program provides on-site courses from 4:30-7:00 p.m. daily (earlier than most evening programs, thus enabling students to fulfill family responsibilities); and tuition and fees are paid directly to the University by CIGNA (unlike other employee educational entitlement programs which operate on a reimbursement basis). Initiated in 1981, the

program now enrolls over 100 students in any one semester. Classes are taught by regular University faculty; with CIGNA contributing an advisor to oversee operations, scheduling and the counseling of students.

165. LaGuardia Community College

The thousands of food service workers in our economy, particularly those employed in schools, are locked in low-paying positions with no way to advance. In cooperation with a local of the School Food Service Workers Union, LaGuardia Community College developed an A.S. degree program in Food Service Management that has the potential to provide these workers with career mobility.

The initiative for this program came from the Union, which probably recognized that community colleges have the capacity to respond very quickly, and that LaGuardia already offered a congruent degree in its A.S. for Dietetic Technicians. At the time, there were 8,000 New York City Board of Education employees working in public and parochial school lunchrooms and 400 unfilled positions for "School Food Manager."

The Union publicizes the program and recruits the students, holding open house sessions jointly with college personnel. Students who then choose to apply are evidently accepted automatically (there was no indication otherwise), register together and are scheduled to take classes together. This scheduling is necessary so that certain generic courses, e.g. Management Systems, can be adapted to create special topical emphases for the group, e.g. "Quantity Food Purchasing." The curriculum involves 66 credits over a 2½ year period. Of these credits, 9 are in a competency-based cooperative education component, 9 are in English, 19 are in occupation-specific fiel and 29 are in various social science and management disciplines.

The grades of Program students have been higher than the mean for all LaGuardia students, the attrition rate has been much lower, and the academic self-confidence of participants has soared. Of the first 21 graduates of the program, 9 were promoted by the N.Y.C. Board of Education to Food Service Manager. Ironically, with that promotion, the students are no longer members of the Union that dreamed this program and encouraged them.

166. Nashville State Technical Institute

Nearly a quarter of a million individuals are currently employed in the Savings and Loan industry, one that has undergone rapid change in the past few years as the nature of financial services has diversified and as deregulation has intensified. Obviously, a significant portion of the workforce needs the knowledge to be productive and efficient under these changed conditions. The Institute of Financial Education has joined with Nashville Tech. to provide appropriate programs for S&L employees in the Nashville area. The IFE is the educational affiliate of the U.S. League of Savings Associations, and, since 1922 has provided multi-level professional education and training programs for industry personnel both by correspondence and in group study at local sites. National Office staff research and develop instructional materials and

examinations for approximately 50 courses, establish academic standards, train instructors, issue certificates of attainment, and provide administrative support for local chapters. The subject areas covered by the courses include economics, management, data processing, property management and finance, marketing, real estate law, appraising and effective speaking. Strictly speaking, this collection is not industry-specific; but all these courses have direct application to careers in the Savings & Loan field.

The cooperative arrangement between the college and the industry association in this case involves the offering of four courses (unfortunately, we were not told which ones) to approximately 100 students (unfortunately, we were told anything about who they are, what levels of responsibility they hold in their organizations, or anything about their previous education). Instructors come from a group (including leaders of local business and college professors) approved by the U.S. League of Savings Association, and are trained by the Institute of Financial Education. But beyond providing the space and maintaining students records, it is unclear what role Nashville Tech plays in this program.

167. Fox Valley Technical Institute (Wisc.)

Conducted jointly by the Fox Valley Technical Institute and area Chambers of Commerce, the Small Business Management Clinics seek to harness the resources of the small business community to improve the performance of its members and to create mutual support and accountability among business colleagues. The program enables small business managers who do not have available the training and problem-solving resources of large corporations to meet their needs by means other than conventional classes and seminars.

Using models of collegial interaction and support that have been used for a long time by medical professionals and that have also been adapted for the clergy, Fox Valley involves small business managers in a "case approach" to continuing education. A diverse and self-selected group of participants meet for several hours twice monthly in groups of 8-14. Each participant has the opportunity to outline a problem he or she confronts, the solutions already attempted and their results. Colleagues, who function like an "outside board of directors," ask questions, offer suggestions, and, under the guidance of a facilitator/moderator, review cases previously examined.

Since January of 1982, two such groups under one Chamber of Commerce have multiplied to five under the joint auspices of three Chambers and Fox Valley. Chambers collect $35 per participant for 12 sessions, part of which is paid in tuition to Fox Valley.

The success of the program is ascribed, in part, to its fundamental philosophy of education: that for adults whose chief social role lies in their work, problem solving is the manifest objective of education and "learning" the latent objective. Thus, grasp of theory and principle follow engaged confrontation with problems. Fox Valley is currently

exploring the potential of this model for employees of hospitals, school systems and municipal governments. (ER)

168. Claremont Colleges (Calif.)

The Mathematics Clinic of the Claremont Colleges is an example of a different kind of cooperation between colleges and employers. It is part course, part consulting mechanism, and a quasi-internship. Its subject matter consists of mathematical problems that have arisen in industry or government; and since 1973, some 27 corporations and government agencies have submitted such problems to the Clinic for solution. The students in the Clinic--undergraduate, graduate and post-doctoral--seek to solve the problems; but unlike contract research, they can promise only that they will make the best effort they can. Clients pay a fee that partially offsets the costs of operation. In the process of sponsorship, the clients often find future employees.

The Clinic-as-Course is required for Master's degree candidates in Applied Math and for certain undergraduate concentrations--though it is generally an option for undergraduate majors in their junior and/or senior years. Each Clinic seminar lasts for a year, and involves a team approach to problem solving (a mode of work more common in industry than in the Academy), with the team consisting of a graduate student team leader, students, liaison personnel from the client, post-doctoral or faculty consultants and a faculty supervisor. The faculty supervisor often provides "mini-seminars," i.e. intensive, short investigations of very current mathematic areas--precisely the kind of "crash courses" that are frequent in business, industry and government.

Students gain the experience of developing the modeling and analytic tools necessary to solve real world applied mathematics problems; and also the experience of interacting with a heterogeneous group of colleagues and a feeling for both the marketplace and the workplace. The measure of success of this program has been in its replication--at some half dozen colleges and universities in the U.S. and Great Britain.

169. Central Virginia Community College

It is a paradox observed by too many that the more internationalized our economy becomes, the more dependent we are on exports, the greater competition we face in world trade, and the more foreign corporations establish operations in the United States, the less our college students study foreign languages and cultures. Partly for that reason, both large corporations and small businesses contract for short language and culture courses for employees in "language-sensitive jobs." The Cross Cultural and Foreign Language Resource Center at Central Virginia Community College performs a number of public service functions and engages in precisely this kind of contract education--principally in foreign languages--to area employers.

The academic functions of the Center within the Community College include the maintenance of instructional programs in German, Spanish and ESL, and the development and offering of courses in Area Studies and in Language and Culture. The ESL programs are provided principally to

Indochinese refugees, Middle Eastern students, and employees and families associated with German/American corporations located in the area. The Center has also developed an "area language bank," containing individualized, self-paced materials in seven (7) major languages, augmented by cultural/historical/political information "packages" on the countries in which those languages are spoken. The "bank" is an intriguing notion; and we were disappointed that the College provided no information on how it has been used and by whom.

Of potentially greater interest for our purposes here, the Center has provided a special Spanish language course for secretaries in an international division of General Electric and a Danish language course taught at a local G.E. plant (though to whom was not clear). The paucity of detail was frustrating, as the potential of similar efforts by other colleges and community colleges may be great. What is it that employers want from foreign language education? Which of the language skills tend to be emphasized in these programs and how are they taught? How is proficiency determined? How have employees responded to these programs? And is there any opportunity to create foreign language learning environments in the workplace? If those--and other questions--could be answered, we would all have stronger guidance than we now possess.

Other Programs in this Category

Idaho State University

Small community hospitals in rural areas face a problem of developing and training a trained workforce of Licensed Practical Nurses. The problem is analogous to recruiting physicians for such communities, but the solution is a bit easier in the case of nurses: through an outreach effort, recruit and train LPNs from the indigenous population. That is exactly what Idaho State does for three rural areas and as a joint venture with affected hospitals.

The program accepts 10 students per year for an intensive 11 month curriculum with 570 classroom hours and 1040 clinical hours. The curriculum is standard preparation for the licensure examination, although precisely what that means was not indicated. Courses are evidently delivered on site by travelling University faculty. Of the first eight graduates, all passed the licensure exam and all scored above the mean on something called the "national pool test."

Nashville State Technical Institute

Since 1979, and under contract with the Tennessee Valley Public Power Association, Nashville Tech has provided course in Basic Mathematics and Electricity, Fundamentals of Alternating Current, and Substation Equipment and Maintenance to employees of the Association. While oriented toward a specific industry and occupational cluster, the courses provide some theoretical background and skills development that are more generic in nature. The program first delivers the course by correspondence, then brings students together for a 30 hour laboratory over a period of

five days. The texts used in all three courses were developed by Westinghouse. Students are awarded a certificate and college credit on completion of the program; but there is no viable evaluation system to determine its effectiveness.

Part M: ASSESSMENT: THE BOTTOM LINE

The condition of American education is usually measured with reference to the achievement of our students at all levels. And well it should be, since the type, focus and amount of learning are most appropriate to the primary objectives of education. After all, the bottom line of schooling is what students learn.

In its background discussions, the National Commission noted that students receive many conflicting messages concerning what is expected of learning and performance. The less the clarity of expectations, the less likely learning can be improved. More explicitly, the Commission concluded that we have failed to use our most widely recognized measures of learning to upgrade our expectations for student performance. Partly for that reason, A Nation at Risk recommended that

> "Standardized tests of achievement (not to be confused with aptitude tests) should be administered at major transition points from one level of schooling to another . . . . The purpose of these tests would be to: (a) certify the student's credentials; (b) identify the need for remedial intervention; and (c) identify the opportunity for advanced or accelerated work. The tests should be administered as part of a nationwide (but not Federal) system . . . This system should include other diagnostic procedures that assist teachers and students to evaluate student progress."

The Commission thus recognized that while there is virtue in our existing national measures of student achievement to help clarify our expectations, the measures themselves, and, more importantly, our uses of the measures, need to be improved first. Testing without assessment, the Commission would say, is blind.

In a broad sense, all of Starting with Students is about assessment. Our basic question about any program reviewed in these pages has been "What's the bottom line?" What happens as a result of what you do? What happens, in particular, to student learning and growth? Does your program meet its objectives? How do you know?

Assessment is a process that enables programs and institutions to answer those questions, and that becomes an instrument of instruction and learning. But with the exception of using standardized test scores in the admissions process, most American colleges and graduate schools do not think much about assessment. As things stand today, our colleges and universities employ an "input approach" to the measurement of their academic worth: the mean SAT scores of entering freshmen, the percentage of new faculty hires with Ph.D.s, the number of volumes and serials added annually to the library, and, of course, the ratio of microcomputers to students. At best, all these indicators may tell us something of the potential of an institution to influence student learning and achievement. They do not say anything about whether that potential is actualized between matriculation and graduation. And yet, with the costs of higher education rising, students, parents, legislators and the general public are starting to ask questions about

output, not input. And to ask questions about output is to require far more serious and systematic approaches to assessment.

Three movements seem to be afoot to change the traditional disregard of "bottom line questions" by our colleges. The first is the pressure of accountability emanating from state legislatures and focused on public institutions of higher education. We have academic progression tests now in the Florida system and in Georgia; and we have the example of Tennessee's incentive funding system in which colleges are rewarded for improvements in student learning as demonstrated by a variety of instruments and methods. The words have been written on the wall.

The second movement follows the first. When college faculty perceive that their traditional roles in certifying student learning may be pre-empted by a third party, they will rush to protect the academic border. They are beginning to learn about assessment and to develop their own local versions of an assessment program. The evidence of some of the programs reviewed in this section suggests that as faculty engage in this process, they will develop new forms and methods of assessment, flexible enough to cover both the incredible range of fields in higher education and the complexity of student development. We already have experimental measures of creativity and of scientific thinking, for example, and we will see measures of other heretofore elusive mental operations before long. We already have sound models of performance assessment (fine arts, technical subjects), proficiency assessment (second language learning), and portfolio assessment; and some faculty in professional fields are adapting the multifacted "assessment center" approach of many large employers (involving simulations, behavioral observations by expert judges, etc.) who have used this approach for decades.

As some of the programs reviewed in this section also demonstrate, assessment can be a comprehensive information process, not merely a mechanism for sorting and screening students. Most of what we have learned to date about assessment as an information process has emerged from experimental programs serving returning adults, whose prior learning has to be described in enough detail to map a subsequent productive academic program. Too many institutions have sneered at this process, and yet, if it is rigorous enough, not only do students and faculty learn more, but the standards of performance may be higher than those in "traditional" academic programs. As I hope some of these reviews make clear, the reason for that advantage is that the assessment process forces faculty to define their curricular objectives in discrete enough ways--and with discrete enough criteria for the assessment of student learning--that they become more confident of both the objectives and measurements.

The third movement will not be far behind. A generation of college faculty will be retiring in the late 1990s. Despite projected drops in enrollment, we will need to replace most of them. That means a bumper crop of graduate students who will be recruited into the pipeline toward the Ph.D. between now and 1990--precisely the period during which work on assessment will become far more widespread. To the extent to which our graduate schools expose their future Ph.D.s to at least some of the

tools of their trade as college teachers, a decade from now we will have a professoriate far more disposed to measure institutional quality in terms of outputs, and possessing a far greater proprietary interest in assessment than is currently the case.

170. The University of the State of New York

Compared with those of other nations, the American system of higher education is unique in its combining of instruction and certification in the same authority. While some programs in American colleges and universities use external examiners (see Vol. I, #93), and while many colleges grant credit on the basis of examination programs such as Advanced Placement and CLEP, only a handful will award degrees based largely on examination. In 1970, the University of the State of New York, acting through the authority of its Regents, became the nation's first "examination university" through the Regents External Degree Program.

The Regents External Degree (REX) provides adult learners with a flexible format for earning a college degree through proficiency examinations (both written and performance). While the institution itself provides no direct instruction to students, it employs volunteer advisors nationwide to counsel students preparing for examinations. At present, 8 degrees are offered at the Associate and Bachelor's levels. Since 1972, the program has awarded over 18,000 degrees.

Each degree program has different requirements, which are developed and monitored by a committee of faculty from colleges in both New York and other states. These and other faculty also serve as examiners under the Special Assessment program used to evaluate candidates who claim to possess college-level knowledge of a subject for which no other appropriate standardized test exists.

In addition, some 30 College Proficiency Examinations have been developed by the New York State Education Department, and are administered across the country by ACT. The process for developing these examinations is as rigorous as it is for de facto national examinations such as the Graduate Record subject area tests. The major difference is that the Regents exams may mix multiple-choice and essay questions or consist wholly of essay questions. Just how the essay questions are scored was not indicated in the material we reviewed, though it is not difficult to insure that the content specifications of an examining committee are met in essay questions. The same is true for performance-based assessments such as those required of nursing degree candidates who must demonstrate clinical expertise. The special examinations are administered through three Regional Performance Assessment Centers (in Long Beach, Calif., Atlanta, and Denver) in addition to those in New York State.

Examinations are not the only vehicle for completing degree requirements in the REX program. Students may present credits from accredited colleges and non-collegiate courses reviewed and approved for college credit by either the American Council on Education or the New York State Program on Non-collegiate Sponsored Instruction. Students may also

present scores on standardized tests such as the GRE subject area examinations.

Approximately 20,000 students are currently enrolled in the REX program Their mean age is 33, and 83% are employed full-time. A large proportion of enrollees are military personnel (20%) and nurses (35%). Others include employees in high technology industries, educational institutions, health related organizations, banks and law enforcement agencies. Although there are no admissions requirements, a majority of enrollees have previously attended colleges or community colleges.

Given the various options available to REX students, the average time (in months) for completion of the various degrees offered has been as follows:

A.A.	9.7	A.A.S. and A.S./Nursing	23.0
A.S.	12.1	B.S./Nursing	33.8
B.A.	16.4	B.S./Business	31.0
B.S.	17.1		

A 1981 survey sampling degree recipients since 1977 revealed that most have continued their education or plan on doing so. The survey results are fortified by an NIE-sponsored study showing that approximately 60% of the 1977 REX graduates applied for admission to a higher degree program, of which 87% were accepted (73% of these eventually enrolled).

As an assessment program, the REX originally assumed that most candidates would not need much counseling or advisement. This assumption was proven false, and extensive advisement is now available through printed materials, volunteers, and an Alumni Association. The program has also taken steps to develop cooperative relationships with other colleges and consortia in order to provide a wider range of learning and certification options. Similarly, liaison with both business and the military has increased, including formal agreements providing credit for approved training programs and the acceptance of proficiency examinations offered by DANTES, the military testing organization.

171. Trinity College (Vermont)

The Program for Adult Continuing Education (PACE) was initiated in 1971 to encourage adult learners who possessed a high school diploma or GED to enter or re-enter college. From its beginnings, credit for prior experiential learning was an important component of the program. The process by which this credit is awarded has evolved from an informal committee review structure to one in which students examine their knowledge and skills, articulate learning outcomes, analyze these with respect to criteria for awarding credits and complete a synthesis of college-level knowledge.

The result is a "portfolio," written by the student, that both describes and documents specific learning outcomes of prior experience. Using materials prepared by the Council for the Advancement of Experiential Learning (CAEL), students take a course in which they learn how to

describe, assess, and place value on discrete competences. For some unexplained reason, the course seems not to be required--and only 37% of the PACE students have taken it.

We are told that the locus of control of the portfolio assessment has shifted from PACE staff to faculty. But what is the assessment process? While details are thin, it appears that once the portfolio is prepared, it is circulated for review by the departments (which occasionally use external consultants) to determine whether college-level learning has occurred. The key here is the requirement for "adequate documentation," but, unfortunately, the profile does not describe the various modes of documentation that might be employed. One is encouraged by the identification of "college-level learning" with "a clear theoretical component that includes the inter-relating of the conceptual to the concrete or applied." But unless one knows how that definition is rendered operational, one has no idea of the criteria for credit. That fuzziness is counterproductive in experiential assessment programs.

Since 1971, approximately 1,000 students have entered Trinity through the PACE program. Of that number, 200 have graduated (the present enrollment is roughly 300). While it is difficult to judge those numbers as indicative of program success, there is no question that the secondary consequences of PACE have been very beneficial to the institution. The program has highlighted areas of faculty demand and hence assisted in institutional planning. Too, the progressive clarification of assessment criteria over the years has prompted faculty to move toward a competency-based curriculum that is currently being incorporated into the college's general education program.

172. Sinclair Community College (Ohio)

The "Credit for Lifelong Learning Program" is another portfolio process designed for adult learners. The average age of the 1100 students currently in the program (out of a total enrollment of 18,000 at Sinclair) is 39. The program assumes that much learning occurs in non-classroom settings, and that students can be taught to engage in a meaningful analysis and demonstration of that learning. For younger students with little or no work experience subject to such analysis, the program offers a cooperative education component; but it is the older student for whom the portfolio process exists.

The portfolio process is embodied in a course with some interesting "admissions requirements": the ability to write clearly and concisely, preliminary evidence of prior learning, and payment of both special tuition and an "administrative surcharge" for the course. The first of these is an important one if students are to be asked to write up a portfolio; the second guarantees both substance and promises; and the surcharge recognizes that the certification process for experiential learning is probably more expensive than a regular course enrollment.

The course itself requires a number of short papers dealing with personal life history, life transitions, career goals, and the relationship of experiential to academic learning. The portfolio (the culminating product of the course) requires the student to provide 3 or

4 alternatives for "documentation" of each "learning description" or competence claimed. There are thus grounds for assessment. So not only is the entire portfolio evaluated, but faculty also use a variety of criterion-referenced measurements of individual competences: performance assessments, product assessments, paper-and-pencil tests, oral interviews, and simulations. While the profile did not indicate how all of that translates into credits, it provided indirect evidence of quality control: in the period, 1976-1979, nearly 20% of the students were unfavorably assessed, and 13% of the assessments for credit in individual courses were denied.

The program attributes its success to organizational design; and indeed, the Sinclair staff has been rather thoughtful about this matter (organizational structure and processes being an area that most academic administrators and planners do not consider very carefully). The program rejected both free-standing and adjunct service status in favor of an "integrated service capability" within a traditional organization (the college) on the grounds the latter better allowed them to maintain quality control, redefine faculty roles, and provide strong fiscal underpinnings. If quality education for the adult learner is taken seriously, these characteristics are essential.

173. Pace University

Assessing prior experiential learning for credit is the basis of the Bachelor of Professional Studies degree program for adults at Pace University. The program enables students to integrate practical, problem-solving learning from their experience into a flexible curriculum that is weighted toward a particular profession but that also includes a significant liberal arts component providing the opportunity to develop conceptual and symbolic reasoning abilities. Students are evaluated for admission to the program on traditional academic criteria, and those who hold non-matriculated status are judged on their performance in previously-taken Pace courses. While providing the flexibility of a largely-external degree, the Program insists that 25% of the credits required for the degree be completed in the formal classroom--with the courses selected from regular University offerings. A 50-credit liberal arts distribution requirement results in a far higher figure than 25%. Indeed, cu ent data indicate that an average of only 20% of the credits are earned in the process of assessment of prior learning.

A "portfolio" is not required, but most stude: ts develop one. The format for the portfolio is dominated by essays that define and reflect upon skills, techniques, and knowledge acquired in previous experience. "Documentation" is here defined as "physical evidence," and the examples include letters from supervisors, job descriptions, samples of work on the job or other products. Obviously, performances are called for to supplement the portfolio in appropriate fields.

Portfolios are reviewed by selected members of the Pace faculty, who consider the degree of congruence between the learning described and the expected outcomes of individual courses. This procedure requires that course outcomes be far more precisely stated than is normally the case

in American colleges and universities; but the profile provided no examples. The Program claims a demanding review process; and 75% of the life experience credits requested are granted.

Some 80% of the students in the program major in Business--with the balance in other occupational fields such as Community Development, Performing Arts, Health Sciences, and Education. Half the graduates of the program have gone on to obtain graduate degrees in these and other professional fields, a significant testimony to the quality of their preparation.

174. Lander College (S.C.)

In 1973, Lander College underwent a transformation: from a private to a public open-admissions institution. Enrollment doubled, faculty positions increased accordingly, and new programs had to be developed. The college wisely embarked on an effort to know its incoming students well, and to advise them better. A placement testing program became the centerpiece of this effort, and, starting in 1977, was required of all incoming freshmen (the target population has since been expanded to include transfers and readmits as well).

If a placement testing program is effective in advising students into courses, it results in a de facto ability grouping: within any one course, the range of abilities and skills will narrow over time. And if courses do not exist to match critical masses of students of different skill levels, they should be created. According to anecdotal information presented in the profile, both outcomes occurred at Lander.

Incoming students are tested in groups of 100 either during one of four summer orientation sessions or during a pre-registration testing period in early fall. The tests are given on a Monday morning, scored on Monday afternoon, posted in a data base along with other information on each student, and ready for advisors to share with students and use in course planning sessions on Tuesday morning. These tests include the Nelson-Denny Reading Test (vocabulary and comprehension), a writing sample (a single 50-minute essay), and a 16 question multiple-choice mathematics test (evidently a locally-designed instrument) covering both arithmetic and elementary algebra. All these examinations are hand-scored, and are judged to be appropriate to the entering student body.

On the basis of examination results, students are classified in both gross and discrete ways. The gross categories--"Academic Advisement" and "Academic Alert"--are also based on past academic performance and SAT scores. These categories are used, in part, to assign appropriate personnel to the advisement process. The discrete categories refer to different levels of proficiency, each of which is matched with a course or a process for remediation, retest, or advanced work. Those students judged to be ready for advanced work are encouraged to take other examinations-for-credit such as the CLEP tests. Advisors use all the information at their disposal to develop realistic expectations in students, and that, in itself, is no mean achievement.

175. Alabama State University

As is the case at Lander College, the Freshman Student Assessment Program in the University College of Alabama State evidences a wise use of test batteries for placement purposes. But the context is different: University College is like a "general studies college" within a university, and governs the entire academic life of the student for roughly the first 1½ years of his/her college career. The organization of the institution is such that the other "colleges" accept a student for upper division work only when the student is certified by University College as being fully prepared to pursue a major and a baccalaureate degree.

University College is thus responsible for both the core General Education curriculum and for all remedial and developmental work. As Alabama State is an open-admissions, historically Black institution, its entering freshman class evidences a wide range of abilities. Thus the college practices ability grouping, and uses the test battery to determine placements in one of several broadly-defined "tracks"--from developmental to honors. There is even a developmental track called the "Four Year Plus" curriculum for seriously underprepared students.

At present, the test battery focuses entirely on language and mathematics, with each test matched with an appropriate post-test to assist the institution in monitoring student progress during the freshman year. The program recognizes that "the variables that determine progress are too numerous to permit mono-casual claims" (i.e. we cannot determine that a single course made the difference), but that "a consistent pattern" of change (or no change) in student achievement over the freshman year can be correlated with the track placement.

The program is comparatively new, and needs expansion into other areas of the General Education curriculum (natural and social sciences). Indeed, the College is already moving in that direction.

176. William Mitchell College of Law (Minn.)

While the Law Clinic at William Mitchell is a professional school program, we found its approach to classroom-level assessment particularly instructive. The program has received an award from the American College of Trial Lawyers for "Excellence in the Teaching of Trial Advocacy," and such an award stimulates examination of its grounds.

The Law Clinic takes the student beyond the traditional classroom modes to lawyering skills demonstrations, simulated skills performances and videotaped exercises. But it is also like a cooperative education program in that, in addition to skills courses, each student must represent a real client under the supervision of a faculty member who also tutors, advises, critiques and evaluates. Over 300 students are enrolled in the Clinic; and the supervisor/student ratio is 7:1. What is of interest to us is the four-part evaluation procedure used in the skills courses. For each oral performance and written exercise, the instructor uses:

a) an evaluation form listing 10-12 factors; and assigns a raw score to each;
b) an overall letter grade;
c) written comments to the student that elaborate and extend the critique offered at the time of the performance or exercise; and
d) written comments to a supervising professor explaining factors affecting student performance.

What these evaluation modes require is that instructors have a shared, criterion-referenced set of assessment principles and a commitment to attend carefully to student performance. The four modes preclude arbitrary or whimsical evaluation and have a built-in control feature in the form of senior professorial review.

177. Tennessee Technological University

The profile of the Assessing General Education Outcomes project at Tennessee Technological University was very frustrating to a reviewer, who looks at a promising design but cannot figure out either its workings or results.

We know that this program uses examinations and surveys and tries to get beyond the test scores to determine possible courses of action to improve curriculum and the "educational environment." At one point, we are told that 100 randomly selected seniors took both the ACT and the COMP examinations and that the same group (plus a sample of alumni) were surveyed and asked to assess their own progress toward "goals." But we are never told what those goals are, how they relate to the two examinations, or the results of this exercise.

Evidently, though, Tennessee Tech made something of the exercise (which seems to have taken place a few years ago). For at another point in the profile, the participating population of Seniors is described as a "representative" (as opposed to "random") sample. This universe is chosen by "college, grade point average, and entering ACT scores." The same procedure is followed, though with increased emphasis on the COMP exam. The results? "Tech seniors have scored well in each of the categories [of COMP]," though precisely what that means and how it relates to unspecified on-going "changes. . .in courses, curricula and educational environment" are open questions.

178. Northeast Missouri State University

A great many college educators have talked in recent years about "value-added," the idea that the best measurement of institutional or programmatic effectiveness is the distance--on publicly accessible measures-- between where students start and where they finish. While the distance is presumably the "value" that is "added" by a program, the more quantitative the measure, the more statistical analysis can refine that distance (regression analyses can tell us what part of that distance is due to the normal course of maturation, college environment, and other factors, and what part of that distance is residual, hence most probably explained by the quality of the program).

Northeast Missouri State is the longest-running laboratory for a value-added assessment program in the nation, and can provide significant guidance to those who would undertake similar efforts. Initiated in 1974, and with carefully constructed base-line measures to allow for historical comparisons, the program had proven successful enough by 1979 to serve as the basis for an appropriations request grounded in institutional performance rather than enrollment. To those looking for ways to transcend the enrollment-driven funding models that that have nothing whatsoever to do with student learning and institutional productivity, the NMSU experience should offer great encouragement. But one does not expect a system such as this to spring forth in perfect form. There was--and still is--a good deal of trial-and-error.

This is a multi-faceted program, not all of it on a value-added model. How did it develop and how does it work? The first set of tasks was to formulate operational learning goals and an on-line student record data base. The data base contains both test scores and attitudinal surveys. That combination is a constructive one, though we have to look carefully at what tests are used, for what purposes, and how they relate to the professed operational learning goals. Unfortunately, the profile we received told us nothing about the goals, so we were left in the position of imagining the relevance of the examinations.

NMSU started by using the Sequential Test of Educational Progress (STEP) on entering freshmen and on the same group of students as sophomores. The University then shifted to the ACT Residual Examination for the same populations. While the shift was unexplained, one can imagine that it was made to allow comparisons with ACT sub-test scores presented for admissions, and hence to measure the impact of the University's lower-division general education program. Given the limitations of the ACT Residual Exam (it is too generalized for this type of use), the University subsequently adopted the ACT/COMP examination, which is now given to half the freshmen, half the sophomores and a quarter of the seniors. There is thus a mechanism in place to measure the value added by the college experience--at least in the terms of the COMP exam.

The college experience, however, is not monolithic. Student profiles in NMSU's data base include virtually every variable other than courses taken. Thus, beyond the major (a variable that is included), it is difficult to determine the comparative impact of different groups or sequences of courses on change in the COMP score. The data presented in the profile were confined to the previous ACT and STEP testing, but argue indirectly for including the course information. For example, in two of three years in which the ACT Residual Examinations were used, scores in mathematics declined between the freshman and sophomore year. Since mathematics is a wholly school-learned subject, one would expect such a trend only if not many students in the testing sample had taken mathematics in college. But the existing variables do not allow NMSU to make that determination.

One significant portion of the NMSU assessment program does not involve a value-added measure. All seniors are required to take an examination in their major. For most majors, the tests required are either de facto

national standardized tests (e.g. the Graduate Record Area Test in Chemistry for chemistry majors) or sub-tests of similar exams (e.g. the NTE English exam for English majors) or occupational licensure examinations (e.g. in Nursing or Accounting). For others (strangely, Computer Science, Environmental Science, all fine arts disciplines, and Speech Pathology--for which there is a licensure exam) the ACT/COMP is used. And for still other majors, local examinations have been developed. This is a very motley collection, with no indication of how or why the different tests were chosen. Some departments, in fact, use different tests depending on the student's degree. It is difficult to understand why a history major receiving the B.A. takes the GRE Area Test in History while a history major receiving a B.S.E. takes the Social Studies section of the National Teachers' Examination. If one wishes to reflect on the quality of education the history department offers its majors, then one uses the same test for all history majors. If one wishes to predict performance in either graduate school or the first job, then there may be some justification for the different exams. But from the presentation in the profile, the purposes of the tests at NMSU are reflective, not predictive.

What do departments learn from these examinations? The answer depends on the examination and the way in which scores are reported. Subject area tests of the Undergraduate Assessment Program (some of which are used at NMSU) often report sub-test scores. So a Psychology department could glean information over time on the performance of students in social psychology and experimental psychology. If scores in one sub-field persistently lagged the other, the Department could target its improvement efforts. But most of the examinations administered in the senior year at NMSU provide only aggregate information: a department "learns" that a greater or lesser percentage of its students scores above the 50th percentile.

But there is a different--and perhaps more valuable--type of learning that takes place at NMSU, a learning which the examinations stimulate, but do not control. Because the assessment process permeates the institution, departments are in a perpetual state of self-reflection, refining instructional objectives and teaching methods. NMSU was wise to add a set of attitudinal surveys to assist in this process, surveys that follow the student body through the University and into life (the ACT Alumni Survey is distributed triennially). For the students, knowledge that the University cares about their perceptions as much as their performance is extraordinarily important, and perhaps accounts for their acceptance of what might be regarded as a very intrusive program of pulse-taking. For the faculty and administration, studen: and alumni perceptions are goads to the improvement process, and have resulted in changes such as the raising of admissions criteria, revision of audit and course withdrawal policies, the improvement of the academic advisement system, the hiring of new faculty and the purchase of instructional equipment. There is no question that all this evolves naturally from an institutional culture dominated by a commitment to documenting what happens to students in college.

179. Our Lake of the Lake University (Tex.)

The profile of the program for Assessing General Education Skill Competences at Our Lady of the Lake states the rationale for undertaking this effort in clear and compelling terms:

> ". . .the procedures and standards employed by most institutions of higher learning to certify their graduates are highly suspect and provide little evidence to substantiate either the nature of the learning acquired or the level of competence students have achieved."

The effort itself began in 1971 with a curriculum overhaul driven by competencies (not courses and credits). The assessment program grew, in time, out of the curricular change and its subsequent revisions. The outcomes of this new General Education program were stated in terms of four (4) "areas of knowledge" and ten (10) "lifetime skills." Between 1973 and 1975, most of OLLU's courses were transformed to emphasize as many of those outcomes as appropriate. And during that period, students could demonstrate competence in each of the outcomes through either an external or approved in-course assessment.

Our Lady of the Lake serves a largely non-traditional student population of 1200: 53% Hispanic, 69% female, 65% over 21, and 48% part-time. In light of its experience delivering the new curriculum to this student body, along with its participation in the development of the ACT/COMP examination, the faculty revised the program in 1979 so that student learning in six content areas could be validated in the traditional way (i.e. by course credits), while five "skill competences" and a "synoptic competence" would be validated outside the credit system, and as follows:

Competence	Assessment
1) Sending and receiving information in a variety of settings and for a variety of purposes.	COMP: "Communicating" subscore
2) Analyzing a variety of problems, selecting or creating solutions, etc.	COMP: "Problem Solving" subscore
3) Interacting effectively in a social setting.	Local Assessment: trained raters observe students in a 45 min. discussion
4) Identifying values, understanding how they develop, implications of decisions made on the basis of personal values, etc.	COMP: "Clarifying Values" subscore
5) Expressing oneself creatively in an art form.	Local Assessment: faculty judge student projects, discuss criteria with students
6) Synoptic: "Can integrate liberal knowledge and lifetime skills to produce a reasoned and consistent world view."	COMP: Total Score

While this reviewer has some reservations about using a total score on the COMP examination as a measure of "synoptic competence" as defined by OLLU, the other measurements have face validity.

Students may take the COMP exam after 60 credit hours (a testing fee of $25 covers the costs of administration). When the scores are received from ACT, students, registrar and advisers are notified. Students who fail any part of the COMP (or one of the local assessments) may turn to a Learning Center for self-instructional modules designed to prepare them for reassessment.

Critical to local uses of an examination such as COMP is the determination of the passing score. OLLU uses cut-off scores which are 1.5 standard deviation below the national mean. The current pass rate is 82% by the beginning of the junior year; and the profile noted that "virtually all students eventually achieve the desired level of competence to graduate on schedule."

The secondary benefits of this program are well articulated at OLLU. Foremost among them is faculty confidence--confidence that the credential awarded carries a "warantee." But as the assessments can be used for program evaluation (as well as degree-qualifying) purposes, the faculty has gained even greater confidence from ACT studies that demonstrated how much OLLU students exceeded statistical predictions of performance: based on entering ACT scores for a sample of 65 students, OLLU students scored 250% better than predicted on national senior year norms on the COMP. Such a difference is eloquent testimony to the potential of non-traditional students in a program with clearly defined goals, strong quality control measures, and a committed faculty.

180. Alverno College (Wisc.)

Is it fair to describe Alverno as an institutional culture dominated by assessment? Assessment often seems like such a bloodless process that the institution so committed to it would be too distant from its students to have an impact. Alverno has kept the process aspects of assessment in focus, never allowing them to so overwhelm education that learning and instruction are forgotten. Indeed, assessment is the mechanism that keeps the Alverno student in continuous contact with active learning.

Like Northeast Missouri State and Our Lady of the Lake, Alverno is a long-distance runner in the assessment innovation business, committed to student outcomes as the driving force of higher education. But unlike the others, questions of redefining institutional mission and developing a new approach to liberal education were the mold for the assessment program. Over a decade ago, Alverno redefined liberal education in terms of eight (8) general abilities--not in terms of knowledge structures. More significantly for our purposes, the College articulated six (6) levels of performance within each ability. This definition and articulation recognizes sequence and development within any curriculum, and thus is not as much at odds with traditional academic values and departmental orientation as the surfaces may suggest. In fact, it was the avowed purpose of the redefinition "to

discern the developmental patterns already embedded" in the disciplines. Such a purpose requires a reflection on curriculum and delivery to a degree of intensity in which the Academy normally does not engage.

If one reflects as the Alverno faculty did, then clear, specific and demonstrable outcomes become the ends toward which the institution works. Such outcomes know no particular time, space or conditions. Thus, everyone assesses: instructors, trained assessors, volunteer assessors from the community, peers, and, most-importantly, the student herself. The student who develops the ability of self-judgment, after all, has reached an extraordinarily advanced stage of education. Critical to this process is the articulation of specific performance criteria to students long before the actual moment of assessment. And equally as critical is the feedback mechanism.

The professional assessor, or evaluation specialist, is key. All assessors are trained by faculty volunteers in eight "Competence Departments" in such a way that examiners become examinees and in which observation, recording, judgmental and feedback skills are finely honed. The act--not merely the written word--is judged. Words themselves, vehicles of the act, also constitute (in the terms of the philosopher, J. L. Austin) a "performance." To facilitate the observation and judgment of performance, Alverno provides an assessment center with a panoply of technologies and architectures.

A comprehensive assessment system can become so individualized as to preclude monitoring and as to shatter any possibility for common meaning. Alverno claims to have overcome this problem through an Assessment Committee (as well as through the operations of an Office of Research and Evaluation), but the description we reviewed was too generalized to allow judgment of its success in providing coherence to the system. One may argue, however, that to the extent to which assessment is itself a developmental learning process, the system possesses an inherent coherence.

181. DePaul University

For some mysterious reason, the assessment and advisement of incoming freshmen are unconnected activities in many colleges and universities. Assessment and placement may be handled by a special non-instructional staff or by a small group of faculty who are largely responsible for freshman curricula, particularly in English and Math. Advisement, on the other hand, is a faculty duty; and most colleges could not cover their students with adequate advicement unless much of the faculty are involved.

The Freshman Assessment and Advisement Program at DePaul was motivated by a dissatisfaction with the comparative lack of feedback inherent in standardized tests, and by too many examples of unproductive course schedules resulting from a barn-hall style freshmam orientation and registration procedure. The keys to the program lie in (a) a sensitive battery of locally-developed skills assessment examinations which provide sub-test scores linked to the demands of particular courses, (b) a rigorous and imaginative 5 day faculty development workshop in which

the advising skills of faculty--the ability to link information about student strengths, weaknesses and needs to curriculum--are measurably enhanced, and (c) as a result, a highly individualized approach that nonetheless succeeds in covering entering freshman classes of over 1,000 with a core of about 20 trained faculty.

During the 5 day workshop, a day is spent on the theory and practice of skills assessment in reading, writing and mathematics and on the interpretation of the instruments and sub-test scores in relation to the overall academic program at DePaul. Another day involves mock interviews in which faculty pair off and play roles of student and advisor, utilizing information from student files. They are also given samples of student files representing a range of abilities and interests, and are asked to make recommendations for major, allied fields, electives, special courses (honors or developmental), workload, etc. By the fourth day of the workshop, faculty are being tested in actual one hour advisement sessions with entering freshmen.

What kinds of assessments are used in this process; and is the information they generate sufficient to the task? The writing assessment is a 50-minute essay, holistically scored by two faculty from the English Department. The results are not used in isolation, rather in combination with the student's ACT/Verbal and the vocabulary sub-test score from a special administration of the Nelson-Denny Reading Test. These three assessments provide a comprehensive picture of the student's verbal skills, and, depending on their configuration, provide for the basis of placement in a variety of course sequences. The idea is that if faculty know what it takes for a student to negotiate the curriculum successfully, they can recommend different sequences to the same end for students who start with different strengths. DePaul faculty have thus worked out seven (7) initial course placement patterns based on different configurations of scores on these three assessments.

As for mathematics, once again there are three assessments, all locally developed. The two that are used for initial placements are a Computational Skills Tests (40% word problems) and a Basic Algebra Test. In addition, a Pre-Calculus Diagnostic Test devised by the Math Department is exmployed--for advisory purposes only--for those students who pass the other two assessments.

The information entered in the student files from all these assessments consists of scores--nothing more. If the faculty are confident in what the scores represent--which is more likely with locally-developed assessments than with standardized tests--the process should work, at least as far as placement goes. Only indirectly--and only with much greater faculty participation, though--will the specifics of the assessments filter back into the classroom and to the student. A score on the Basic Algebra Test does not tell either a student or his/her advisor whether the strengths are in quadratic equations and the weaknesses in radicals, for example. A mediocre writing assessment score does not specifically direct the student toward working on a generic problem such as the organization of essays. There is space on each student's "Skills Assessment Chart" for "additional comments," but

there was no indication of how that space was used in ways that might double the impact of the assessment data. This criticism may be a bit unfair, though, since the objectives of the DePaul program are more limited, and, judging by the results of faculty and student surveys, are met in their own right.

182. Calif. State University/Long Beach

The Writing Proficiency Examination at Cal State/Long Beach seems to be as much a business enterprise as it is an educational one. Since 1979, the Examination has been a graduation requirement, one which the institution claims is not punitive. Needless to say, we found it rather ironic that students are charged a fee--not only each time they took the exam (or any portion of it that they previously failed), but also for special weekend preparation sessions. And one wonders what really matters when the profile boasts that the program is not merely self-supporting, but turns a profit!

The examination itself was locally developed for upper-division students. It consists of three parts: one objective section and two essays. Details in the profile we reviewed were thin. One of the essay is "on a topic which is personalized" [sic]. The other essay is analytical. The essays are holistically scored by trained faculty. There is a rather elaborate follow-up system for students who fail the examination (the current failure rate is just over 30%--down from 40% in 1979), but it is a system that places the responsibility for improvement squarely on the student. Tutors, CAI programs and additional composition courses are recommended to students, who are "tracked" by computer to see what they actually do. While there must be three or four years of data regarding how these students prepare to take the exam a second (or third time), and what succeeds for which students, the materials we examined provided no details. And yet such information is rather critical if one wishes to assist students of different educational and language backgrounds.

183. Jacksonville State Univ. (Ala.)

The Center for Individualized Instruction offers a very behavioristic approach to learning and assessment, evidences pride when it cites Skinner's notion that "the rat is always right," and boasts that it is "the only college level learning center in the country" using this particular approach.

The approach is called "Precision Teaching," and is employed within the Keller Personalized System of Instruction. The Center itself was developed under Title III support in 1977-78 to address problems of poor retention rates, poor student performance on tests and in upper level courses, and to encourage and support faculty development and the adaptation of new educational technologies.

All courses and non-credit services at the Center reflect the assumptions of Precision Teaching as an approach to testing student performance and measuring student progress:

(1) that students can neither reason nor solve problems in a discipline unless they are fluent in its terminology, symbolism, and basic concepts; and
(2) that student performance can be assessed more precisely using frequency of response as the unit of measurement.

In other words, accuracy is not enough--you have to answer fast. In fact, you have to answer at a rate of 10 correct responses per minute. Those who meet the grade are labelled "frequency champs," and their names are posted for all to see--presumably as a motivating device. Instruction, needless to say, is self-paced, with repeated testing and tutoring until mastery is demonstrated. Student progress is plotted on daily semi-log "celeration charts"--to allow for studying the effects of various interventions.

Courses utilizing this accuracy x frequency approach have been offered in biology, geography, psychology, history, mathematics, chemistry and basic skills. In an extended example presented in the profile, students in three different biology course chose among testing formats involving flip cards and different mastery criteria. The subject matter covered physiological processes. The point of this exercise was to demonstrate that "students perform better when given choices between testing procedures," a hardly disputable assumption.

Whether students trained in a such a quantitative rat's maze would ever choose an essay examination, whether they would ever choose to engage in the time-consuming reflection necessesary for higher-order thought, is another matter. The authors of the profile claim that students trained in this method can write more succinct essays and master word problems more quickly than traditionally-taught students; and that frequency testing in basic terminology seems to generalize to other, more complex reasoning skills. They use, as examples, essay examinations in "Pathophysiology" and "Theories of Personality." But their criteria were "correct concepts" and "frequency of words"--neither of which measures competence in complex reasoning skills.

OTHER MATERIALS RECEIVED

The following programs submitted material that could not be treated in either volume of this collection of reviews. There are a number of reasons we declined to review a program: (a) the materials submitted were unworkable; (b) the subject matter and/or principal location and primary beneficiaries of the program lay far outside the parameters of our inquiries; and/or (c) the programs had not actually been implemented or had just been implemented (in 1982, when the searches took place).

Ashland College
Boston Museum of Fine Arts
California State Libraries
University of Delaware
Fisk Univ. & Vanderbilt Univ.
Florida Atlantic Univsity
Florida State University

Fox Valley Tech. Institute
Glassboro State College
Indiana State University
Inter-American Univ. of Puerto Rico
University of Iowa

LaGuardia Community College
Lincoln Center Institute
Los Angeles Southwest College
Univ. of Missouri at Rolla
Univ. of New Mexico
Orangeburg-Calhoun Tech. College
Shippensburg State College

Skidmore College
Syracuse University
Univ.. of Tennessee/Knoxville
Utah State University

Vista College

In-Service Economic Education
Museum School

Transfer of Credit Policy
Motivation in Physics
Computer Literacy for Engineers
English Major with Business
Gerontology Program/Social Work
School of Theatre Internship
Multi-Occupational Cluster
Improving Teacher Education
Summer Honors Seminars
M.A. in TESOL
Special Support Services
Upward Bound
Services for the Handicapped
Minority Pre-Law Conference
Integrated Skills Reinforcement
Professional Materials Project
Comput. Sci. Contract Education
Cooperative Training Program
Management Masters Program
Office of Instruct. Improvement
School Improvement Program
Admin. of Justice Master's Degr.
Project PASS
Tech. Literacy for Undergrads.
Engineering Scholarships
Up-Date in Quality Parenting
Home Economics M.S.
Faculty Devel. for Part-Timers

There is another group of programs for which materials were received that were wholly adequate for review and yet which are not included in either Volume I or Volume II. Quite simply, there was no appropriate category in which they could be placed. These include:

Daytona Beach Community Coll.
Univ. of Denver College of Law
Emory University
Idaho State Univ.
Santa Rosa Jr. College
Stockton State College
Tuskeegee School of Vet. Medicine
Wilmington College

Developing Occup.Training Progs.
Natural Resources Program
Center for Internat. Studies
Doctor of Arts Program
Health Occup. Learning Resources
Community Justice Institute
Recruitment and Enrichment
Chemistry Program

And there is yet another group of programs that (on hindsight) should have been included in Volume I. As we plan to issue a revised, combined volume in the fall of 1985--with fewer reviews and more detail on each--some of these will be included then:

Murray State University
Univ. of Pittsburgh, et al
Stanford University

Presidential Scholars Program
INROADS
Program in Human Biology

Index of Institutions

For further information on the numbered program reviews, the reader should contact the program director through the institutional official indicated below.

Institution/Official	Address	Review #s
University of Alabama President	University, Ala. 35486	89
Alabama State University President	Montgomery, Ala. 36195	175
Albion College President	Albion, Mich. 49224	71
Alverno College President	3401 S. 39th Street Milwaukee, Wisc. 53215	180
Appalachian State University President	Boone, N.C. 28608	10
Arkansas College President	Batesville, Ark. 72501	67
Beaver College President	Glenside, Pa. 19038	153
Bloomfield College President	Bloomfield, N.J. 07003	8
Bowling Green State University President	Bowling Green, Ohio 43403	104
Bronx Community College President	Univ. Ave. & 181st Street Bronx, N.Y. 10453	129
Brooklyn College/CUNY President	Brooklyn, N.Y. 11210	159
Burlington County College President	Pemberton, N.J. 08068	142
John C. Calhoun Community College President	Decatur, Ala. 35602	94
Univ. of California at Berkeley Chancellor	Berkeley, Calif. 94720	131
Univ. of California at Irvine Chancellor	Irvine, Calif. 92717	37, 106, 117, 144

Institution/Official	Address	Review #s
Calif. State Univ. Coll./Fullerton President	Fullerton, Calif. 92634	155
Calif. State Univ. Coll./Long Beach President	Long Peach, Calif. 90840	182
California Council for the Humanities Executive Director	312 Sutter St. #601 San Francisco, Calif. 94108	18
Central Virginia Community College President	P.O. Box 4098 Lynchburg, Va. 24502	169
Chadron State College President	Chadron, Neb. 69337	110
University of Cincinnati President	Cincinnati, Ohio 45221	77
Clackamas Community College President	19600 S. Molalla Ave. Oregon City, Ore. 97045	6
Claremont Colleges President	Claremont, Calif. 91711	168
Clarkson School Headmaster	Potsdam, N.Y. 13676	3
Clemson University President	Clemson, S.C. 29631	17
Colorado College President	Colorado Springs, Col.80903	118
Univ. of Colo. at Colorado Springs President	Colorado Springs, Col.80933	87
University of Dayton President	Dayton, Ohio 45469	113, 123
Daytona Beach Community College President	1200 Volusia Ave. Daytona Beach, Fla. 32015	125, 138
University of Delaware President	Newark, Del. 19711	116, 148
DePaul University President	2323 N. Seminary Ave. Chicago, Ill. 60614	181
Edinboro State College President	Edinboro, Pa. 16444	27, 92

Institution/Official	Address	Review #s
Empire State College/SUNY President	2 Union Ave. Saratoga Springs, N.Y. 12866	128
Fox Valley Technical Institute President	P.O. Box 2277 Appleton, Wisc. 54913	167
Gannon University President.	University Square Erie, Pa. 16541	127
University of Georgia President	Athens, Ga. 30602	91
Georgia State University President	Atlanta, Ga. 30303	150
Henderson County Junior College President	Athens, Tex. 75751	12
College of the Holy Cross President	Worcester, Mass. 01610	57
Hood College President	Rosemont Ave. Frederick, Maryland 21701	47
Illinois Central College President	East Peoria, Ill. 61635	41
Univ. of Illinois at Chicago Chancellor	Chicago, Ill. 60612	29
Illinois Institute of Technology President	IIT Center Chicago, Ill. 60616	33
Indiana Univ. of Pennsylvania President	Indiana, Pa. 15705	97
Inter-American Univ. of Puerto Rico Chancellor	GPO 3255 San Juan, P.R. 00936	100
University of Iowa President	Iowa City, Iowa 52242	9, 13, 14 55, 56, 86
Iowa Lakes Community College President	101 N. 6th St. Estherville, Iowa 5133.	135
Isothermal Community College President	Spindale, N.C. 28160	145
Jacksonville State University President	Jacksonville, Ala. 36265	183

Institution/Official	Address	Review #s
Jefferson Community College President	109 E. Broadway Louisville, Ky. 40202	25
Kearney State College President	Kearney, Neb. 68847	85
Lafayette College President	Easton, Pa. 18042	62
LaGuardia Community College President	31-11 Thomson Ave. L.I. City, N.Y. 11101	22, 165
Lake City Community College President	Lake City, Fla. 32055	154
Lander College President	Greenwood, S.C. 29646	174
Lehigh University President	Bethlehem, Pa. 18015	105
Herbert H. Lehman College/CUNY President	Bronx, N.Y. 10468	34
Lewis Clark State College President	8th Ave. & 6th Street Lewiston, Idaho 83501	126
University of Louisville President	Louisville, Ky. 40292	111, 136
Loyola University of Chicago President	6525 N. Sheridan Road Chicago, Ill. 60626	44, 96
Lynchburg College President	Lynchburg, Va. 24501	63
Maharishi Internat. University President	Fairfield, Iowa 52556	64
Francis Marion College President	Box F7500 Florence, S.C. 29501	160
Marymount College of Virginia President	Arlington, Va. 22207	45
Massachusetts Inst. of Technology President	Cambridge, Mass. 02139	99, 140
Matteo Ricci College Dean	c/o Seattle University Seattle, Wash. 98122	1
Memphis State University President	Memphis, Tenn. 38152	162

Institution/Official	Address	Review #s
Miami University of Ohio **President**	Oxford, Ohio 45056	53
Michigan Technological University **President**	Houghton, Mich. 49931	16, 152
Millersville State College **President**	Millersville, Pa. 17551	109
Minneapolis Community College **President**	1501 Hennipin Ave.S.	124
University of Minnesota **President**	Minneapolis, Minn. 55455	130
William Mitchell Law Clinic **Director**	875 Summit Ave. St. Paul, Minn. 55105	176
Moorhead State University **President**	Moorhead, Minn. 56560	122
Mount Ida College **President**	777 Dedham Street Newton Centre, Mass. 02159	60
Muskegon Community College **President**	221 S. Quarterline Muskegon, Mich. 49442	26
Nashville State Tech. Institute **President**	120 White Bridge Road Nashville, Tenn. 37209	166
National Humanities Faculty **Executive Director**	1735 Lowergate Drive Atlanta, Ga. 30322	32
Univ. of Nebraska/Omaha **President**	Omaha, Neb. 68182	48, 82
New School for Social Research **President**	66 W. 12th St. New York City, N.Y. 10011	40
City College of New York/CUNY **President**	138th St. & Convent Ave. New York City, N.Y. 10031	23
City University of New York **Chancellor**	535 E. 80th St. New York City, N.Y. 10021	31
State University of New York **Chancellor**	Cultural Educ. Center Albany, N.Y. 12230	170
State Univ. of N.Y. at Binghamton **President**	Binghamton, N.Y. 13901	68
State Univ. of N.Y. at Stony Brook **President**	Stony Brook, N.Y. 11794	51

Institution/Official	Address	Review #s
State Univ. Coll. at Cortland/SUNY President	Cortland, N.Y. 13045	107
State Univ. Coll. at Plattsburgh/SUNY President	Plattsburgh, N.Y. 12901	39
State Univ. Coll. at Potsdam/SUNY President	Potsdam, N.Y. 13676	52
Northeast Missouri State College President	Kirksville, Missouri 63501	178
Northeastern University President	360 Huntington Ave. Boston, Mass. 02115	65, 70
Northern Virginia Community Coll. President	Sterling, Va. 22170	151
University of Notre Dame President	Notre Dame, Ind. 46556	101
Ohio State University Chancellor	Columbus, Ohio 43210	20, 146
Orange High School Principal	32000 Chagrin Blvd. Pepper Pike, Ohio 44244	19
University of Oregon President	Eugene, Ore. 97403	114
Our Lady of the Lake University President	411 S.W. 24th Street San Antonio, Tex. 78285	179
Pace University President	Pace Plaza New York City, N.Y. 10038	49,163,173
Pacific Lutheran University President	Tacoma, Wash. 98447	54
William Paterson Coll. of N.J. President	300 Pompton Rd. Wayne, N.J. 07470	24, 88
Peirce Junior College President	1420 Pine St. Philadelphia, Pa. 19102	158
Penn Valley Community College President	3201 Southwest Trafficway Kansas City, Mo. 64111	137
University of Pennsylvania President	Philadelphia, Pa. 19104	36, 164

Institution/Official	Address	Review #s
University of Pittsburgh Chancellor	Cathedral of Learning Pittsburgh, Pa. 15260	7
C.W. Post Center of L.I. Univ. Provost	Greenvale, N.Y. 11548	8
Princeton University President	Princeton, N.J. 08544	112
Providence College President	Providence, R.I. 02918	73
Queens College President	Charlotte, N.C. 28274	76
Ramapo College of New Jersey President	505 Ramapo Valley Rd. Mahwah, N.J. 07430	139
University of Redlands President	Redlands, Calif. 92373	133
University of Rochester President	Rochester, N.Y. 14627	147
Sacramento City College President	3835 Freeport Blvd. Sacramento, Calif. 95822	61
Sacred Heart High School Headmaster	6250 Sheridan Rd. Chicago, Ill. 60660	18
St. Edwards University President	3001 S. Congress Ave. Austin, Tex. 78704	30, 43
St. Joseph's College President	Rennselaer, Ind. 47978	59
Saint Mary College President	4100 S. 4th St. Trafficway Leavenworth, Kans. 66048	72, 120
Salem State College President	352 Lafayette St. Salem, Mass. 01970	50
San Antonio College President	1300 San Pedro San Antonio, Tex. 78284	149
Simon's Rock of Bard College Dean	Great Barrington, Mass. 01230	2
Sinclair Community College President	444 W. Third St. Dayton, Ohio 45402	119

Institution/Official	Address	Review #s
Smith College President	Northampton, Mass. 01063	66
Johnson C. Smith University President	100 Beatties Ford Road Charlotte, N.C. 28216	157
University of South Carolina President	Columbia, S.C. 29208	38
University of South Florida President	Tampa, Fla. 33620	15, 69
South Oklahoma City Jr. College President	7777 S. May Ave. Oklahoma City, Okla. 73159	108
Springfield Technical Comm. Coll. President	1 Armory Square Springfield, Mass. 01105	141
Staten Island Continuum of Educ. Director	130 Stuyvesant Pl., Rm.609 Staten Island, N.Y. 10301	11
Stockton State Coll. of N.J. President	Pomona, N.J. 08240	74, 143
Swarthmore College President	Swarthmore, Pa. 19081	93
Syracuse University President	Syracuse, N.Y. 13210	4, 90
Tennessee Technological Univ. President	Cookeville, Ten.. 38501	177
Tennessee State University President	3500 John A, Merritt Blvd. Nashville, Tenn. 37203	84, 134, 156
Tidewater Community College President	State Route 135 Portsmouth, Va. 23703	95
Tri-Colleges Director	P.O. Box 178 Dubuque, Iowa 52001	75
Trinity College President	Burlington, Vermont 05445	171
University School Headmaster	2785 SOM Center Rd. Chagrin Falls, Oh. 44022	5
University of Utah President	Salt Lake City, Utah 84112	58, 80

Institution/Official	Address	Review #s
Utah State University President	Logan, Utah 84322	98
University of Virginia Chancellor	Charlottesville, Va. 22903	78, 161
Washington State University President	Pullman, Wash. 99164	79
Wesleyan University President	Middletown, Conn. 06457	103
University of West Florida President	Pensacola, Fla. 32504	115, 132
Wheaton College President	Norton, Mass. 02766	102
Winston-Salem State Univ. President	1600 Wallace St. Winston-Salem, N.C. 27102	46
Univ. of Wisconsin/Parkside Chancellor	Box No. 2000 Kenosha, Wisc. 53141	21
Univ. of Wisconsin/River Falls Chancellor	River Falls, Wisc. 54022	121
Xavier University President	3800 Victory Pkwy. Cincinnati, Ohio 45207	83
Xavier Univ. of Louisiana President	Palmetto & Pine Streets New Orleans, La. 70125	28

APPENDIX A

AMERICAN COUNCIL ON EDUCATION

Office of the President

September 17, 1982

Dear Colleague: Re: Notable Academic Programs

The American Council on Education has agreed to assist the National Commission on Excellence in Education in identifying notable programs and promising approaches to key problems in postsecondary education.

The Commission was appointed in August of 1981, by U. S. Secretary of Education Terrel H. Bell to make "practical recommendations" to the nation by March of 1983, about ways and means of pursuing excellence in education. As part of its charter, Secretary Bell asked the Commission "to review and to describe educational programs that are recognized as preparing students who achieve uncommon success. . . ." The Commission has decided to include in its survey notable programs for high-achieving students, average students, and the academically disadvantaged. In addition, the Commission is interested in evidence of the long-term effects of programs on student, faculty, and institutional performance.

I know that this request is an added burden, but Secretary Bell's interest is genuine, and we have agreed to lend our good offices in this endeavor. The problems of interest to the Commission have been identified from a series of public hearings and panels and dozens of commissioned papers. The programs and approaches in which the Commission has interest are listed on the enclosed flyer.

If your institution has developed a program or approach that falls into one or more of the categories listed on the attached, and you would like to have it cited by the Commission, the Commission would be very pleased to receive a program profile. The Commission will make its final recommendations based on long established activity only; the Commission is not in a position to validate programs.

The Commission seeks to understand what elements of those programs might account for the achievement of students who complete them. The Commission intends to use this information to make recommendations encouraging the pursuit of excellence. Profiles received no later than October 29, 1982, will be presented to the Commission in its November meeting. The Commission will select some to cite in its final report. Please limit your response to not more than ten pages; there should be a separate title page with a one-paragraph abstract typed on the bottom half of the page.

If you have any questions during the time you are preparing the profile, please do not hesitate to call Clifford Adelman at the National Institute of Education (202) 254-5555. Should you choose to contribute to this undertaking, I thank you for your interest and effort.

Cordially,

J. W. Peltason

Enclosure

One Dupont Circle, Washington, D.C. 20036-1193
President (202) 833-4710 Vice Presidents (202) 833-4712

NATIONAL COMMISSION SEEKS EXAMPLES OF NOTABLE PROGRAMS IN HIGHER EDUCATION

The National Commission on Excellence in Education seeks examples of promising approaches and notable programs conducted by the nation's community colleges, colleges, and universities in the areas listed below. While the Commission recognizes that the agenda of higher education is vast, it has chosen to focus its attention on those issues and problems that both fall within its Charter and on which it must gather further information before arriving at its final report and recommendations.

I. Academic Content

1. Programs designed to reconcile the goals of career and liberal arts education;
2. Programs--conducted jointly with high schools--designed to eliminate redundancies in secondary school and college curricula;
3. Programs and approaches designed to increase the scientific and technological literacy of students outside the science and engineering fields;
4. Systematic approaches designed to increase students' creative thinking abilities;
5. Competing models of general/liberal education within the same institution;
6. Cooperative efforts with industry to improve college science education.

II. Academic Time

1. Alternatives to the time-based system of credits and credentials, i.e. ways of accounting for learning in higher education other than credits;
2. Programs for assisting students in managing their academic and study time;
3. Variations on traditional instructional time; sytematic variations on any of the traditional forms of the academic calendar.

III. Assessment

1. The use of exit examinations (degree qualifying exams) other than those in the major;
2. The use of standard college entrance examinations for purposes other than admissions;
3. The use of value-added systems of assessment;
4. Systematic approaches to assessing the outcomes of general education.

IV. Pedagogy

1. Components of graduate programs designed to train future college instructors in pedagogy and other related educational subjects;
2. Programs relying heavily on innovations in instructional technology other than those in mathematics, the sciences, and basic skills (except where "basic skills" have been redefined to include information processing).

V. Teacher Education

1. Approaches to increasing subject-matter content in teacher education programs;
2. Improving teacher education through initial selection and/or exit examinations.

VI. Special Constituencies

1. Undergraduate programs conducted jointly by colleges and employers for the benefit of employees (not college students);
2. Programs directed at increasing the rate of transfer and retention of community college students;
3. Programs directed at "gifted" students (the Commission has already gathered sufficient numbers of profiles of programs directed at underprepared students).

VII. Other

1. Institutional procedures to reward faculty for outreach activities vis-a-vis elementary and secondary education, including in-service teacher training in the content of the specific disciplines (but excluding pre-service teacher training and supervision);

2. Institutional procedures designed to encourage the development and maintenance of such public virtues as honesty and respect among students, faculty, and administrators.

APPENDIX A

The National Commission on Excellence in Education

Items to be Covered in Profile of Notable Program

1. Title of Program/Name of Institution/Address/Phone/Contact Person

2. Problem(s) addressed by the program. Please be as specific as possible. How did you identify the problem(s)?

3. Objectives of the program.

4. Program history and organization. Key dates and steps involved in planning, implementation, evaluation and revision of this specific operation. Is the program based on a model or proposal from a national, regional, statewide or other source outside the institution at which it operates?

5. Specific population(s) for whom the program was developed. What specific criteria (including academic, personal, or other considerations) are used for the inclusion of individuals in the program?

6. Essential characteristics of the program:

   (a) Who does what? where? and when?
   (b) Describe the academic content of the program, the materials and facilities employed, the system of management and organization.
   *(c) What theories or assumptions (if any) lie behind the content and method of the program?
   (d) Special characteristics and training required of instructors and other personnel.
   (e) Special strategies, methods, diagnostic tools, assessment instruments.

7. Program results: the Commission is charged with identifying and examining those programs from which students later achieve "uncommon success."

   *(a) Please cite concrete evidence of the achievement of students while they are in the program. Please note any data you have on students' success after leaving the program. How long have you been keeping data of this type?
   *(b) How does the achievement cited in (a) exceed the achievement normally expected of the target student population? How do you know? This is an extraordinarily important question.
   (c) What other measures do you use to determine how well the program is meeting its objectives? What have you found?
   (d) Who collects and analyzes information and data on the effectiveness of the program?

8. Secondary benefits

   (a) What role does this program play in terms of fulfilling the overall objectives of the institution(s) in which it operates?
   (b) What role does this program play in fulfilling the professional aspirations of teachers, administrators, or other participating parties?
   (c) What unintended consequences (positive or negative) accompanied the creation or operation of this program?

9. Which characteristics of the program do you think contribute most to its success (or, if the program failed to achieve its objectives, why do you think that happened)?

10. Transportable features

   (a) What kinds and amounts of resources, funds, facilities, etc. does the program require?
   (b) To what kinds of institutions, situations, and students is this program applicable?
   (c) What barriers to its success might exist in other settings?

*For programs in which students are the primary beneficiaries, these are the most important questions.