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ABSTRACT The Basic Skills Program described in this report was developed by Macomb County Community College (MCCC) as a semester-long pre-vocational program for Comprehensive Employment and Training Act (CETA) students. Following introductory material, Part I presents a general review of postsecondary developmental education programs for vocational/technical education. Next, six CETA basic skills programs are compared, and a summary is provided of the program modifications suggested by John Roueche and Martha Maxwell, two external consultants. Part IV describes the MCCC program design and sequence and includes student and tutor evaluations and comments. In the next ten sections, detailed descriptions of the Basic Skills Program's reading, writing, mathematics, counseling, and introduction to technical careers courses are paired with reviews of the literature on research and theory and other programs and instructional methods used in these areas. While each descriptive section varies, most contain information on the objectives, content, instructional methods, and organization of the courses and several contain data on student progress and other evaluative information. In Parts XV and XVI, conclusions and recommendations regarding CETA basic skills programs are offered. Appendices cover textbook readability, facilities, intake, courses, record-keeping, and student assessment. (KL)

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A MODEL FOR TEACHING BASIC SKILLS
IN A COMMUNITY COLLEGE SETTING

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September 1981

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STATEMENT OF THE PROBLEM

Macomb County Community College has traditionally offered vocational/technical training to CETA funded students. To prepare them for their training, MCCC has given CETA students about thirty hours of instruction in the form of a short orientation to the college and a refresher course in basic study skills.

However, many CETA prospects lack the basic academic and coping skills essential to success in technical/vocational programs. They are critically deficient in reading, writing, computational and study skills. Their Nelson-Denny "Comprehension" score would fall below the tenth-grade level. Furthermore, their academic problems would often be compounded by personal problems.

A short orientation and study skills review, however beneficial, would not be enough to prepare many CETA students for successful experiences in vocational/technical classes.

Reliable program designs to improve pre-vocational training have been few. A curriculum development effort therefore seemed necessary. It was felt that the effort should include a consideration of the population to be served, the identification of appropriate diagnostic instruments, the design of a basic skills curriculum, and the development of a teaching strategy. The hope was that such a model could be applied to CETA programs generally. This model came to be called the "Basic Skills Program" as it is referred to throughout this report.

INITIAL ASSUMPTIONS

Some philosophical and pedagogical assumptions underlay Macomb's Basic Skills Program:

- A. A team approach to diagnosis and instruction would insure the integration of academic and career objectives thereby improving chances for success.
- B. The primary components of the team effort would be developed by a counselor, a reading/study skills instructor, a writing instructor, and a mathematics instructor.
- C. Continuous monitoring of student progress would provide immediate feedback which would improve achievement.
- D. Individualization of student progress within a group activity would improve achievement.
- E. Division of course work into units would create a model which could provide multiple entry and exit points.
- F. The program design would provide a systematic technique for following up student achievement.
- G. The program design would provide a systematic technique for evaluating its components and for evaluating the total program.

I. GENERAL REVIEW OF POST-SECONDARY DEVELOPMENTAL PROGRAMS

The assumptions of the MCCC Basic Skills Program were given some encouragement by a review of pertinent literature and research.

However, as Roueche and Snow (1977) noted, compensatory programs have often "neither specified in enough detail their methods to achieve success nor determined which of the many student, program, or staff factors contributed to their success or failure." Though Roueche and Snow observed that developmental programs, in general, had received increasing documentation throughout the 1970's, Murphy (1974) stated that stringent research techniques had not been applied to the performance of basic skills classes for vocational/technical students:

...vocational educators concerned with a postsecondary setting have said relatively little about remedial education. All located statements on this topic deal with the proposed goals for such a program. Apparently no evaluation studies exist.

An Eric search by the Project Team during the summer of 1980 discovered little more. One broad-scale survey of developmental programs for occupational students in New York State (Cornell Institute for Research and Development, 1976) appeared useful in several ways; nonetheless, it was based upon subjective responses to a questionnaire.

A. Perceived Needs of Postsecondary Developmental Students in Vocational/Technical Programs

The New York survey, Overview of Developmental Studies for Occupational Students: A Sourcebook for Post-Secondary Programs, drew responses from staff members involved in developmental programs in five agricultural and technical colleges, six private colleges, four EOC centers, and twenty community colleges. The responses were used as criteria to develop a composite college. Within that mythical composite college, the needs of the developmental students were perceived to be these:

...reading, communication, and study skills are the highest priority, closely followed by self-awareness and motivation. Skill in mathematics, personal goal setting, career decision-making and cultural differences are identified as less pressing needs.

Such perceptions seemed to resemble those of teachers and administrators throughout the nation, for scores of developmental programs were designed to respond to the same needs.

There likewise seemed to be a rough consensus on who needed the developmental programs. The extremes of those students who were admitted to the programs were far apart. The beginning achievement levels ranged from kindergarten to college. Yet Eric documents describing programs in many

states--including New York, Ohio, Texas, California, and others--indicated that the usual beginning level was from about the sixth to tenth-grade reading level. This range was not surprising, for it included the top edge of the Adult Basic Education (ABE) level--those who had deficiencies in literacy and in basic skills subjects necessary for a high school diploma--and the bottom edge of those who could presumably cope with college courses. The Macomb Basic Skills course was planned for students who achieved from the seventh through the ninth grade level on the Nelson-Denny "Composite" score. This determination was influenced by a study of James Smarr, the MCCC program's Reading/Study Skills instructor. Smarr analyzed the academic preparedness of CETA students at MCCC from 1977-1979. He noted the difference between the students' "composite" grade level in the Nelson-Denny test and the reading level of their occupational texts as determined by Gunning's FOG index (Smarr, 1979).

One important intention of the Basic Skills program was, of course, to raise the students' academic capabilities to the point where they could make use of the texts and other materials of their future classes.

B. Integration of Courses

Program designs to improve students' academic and personal skills seemed to vary almost as much as the histories of the institutions which had created them. An examination of Eric reports of developmental programs across the country revealed these forms:

- isolated academic courses
- a combination of two or more academic courses
- a combination of academic courses with formalized learning center support
- a combination of academic courses with formalized counseling support
- a combination of academic courses and at least one vocational course
- a combination of academic courses, formalized counseling support, and at least one vocational course
- vocational courses which systematically employed learning labs to improve particular academic skills as needed

Though the most frequent pattern of developmental courses still appeared to be those of isolated classes (as it is at MCCC), many programs seemed to have followed the advice of Roueche and Snow: "Total integrated programs yield better results than isolated courses" (Roueche and Snow, 1977). An integrated program was a feature of "Composite College," an institution invented as the consequence of the Cornell survey of developmental studies for occupational students. A "composite of a mythical most successful program" followed this design:

...a developmental studies program was organized using the block scheduling design and supplemented by a skills center operation managed by volunteer faculty. The block schedule includes elective courses in reading, composition, and

study skills in a class/lab format. Counseling and tutoring assistance are available, and in addition, course instructors infuse attitudinal and interpersonal experiences with cognitive/basic skills and applied field experiences.... Most courses meet four hours weekly with an additional hour in the lab being the norm rather than the exception (Cornell Institute for Research and Development in Occupational Education, 1976).

An actual block system which has had wide employment was that of the Thirteen College Curriculum Program (TCCP). The TCCP was originally a consortium of thirteen predominantly black colleges which had been expanded to include three new consortia and over forty institutions. A TCCP institution would assign freshmen to a set of four courses: English, math, social science, and physical science and biology. The set was team taught, and the team would include a counselor. "A central methodology that emphasized student participation and discussion was established in all courses." (Donovan, 1976)

C. Integration with Occupational Goals

For occupational teachers and students, "integration" often meant integrating career searches or vocational pursuits with academic lessons. Murphy cited a recommendation by Robertson to build curriculum material around occupational themes in order to add interest to subject matter for occupational students (Murphy, 1974). Subsequently, Murphy conducted a search for evidence of the integration of vocational learning experiences with academic courses in four Texas Postsecondary Institutions. One particular focus was the English/Communications course. Evidence included "the presence and use of occupationally related books and/or stated assignments in the course syllabi." Interviews with instructors and examination of syllabi, courses, and learning materials of other courses also provided documentation. Although only one program gave evidence of integration with vocational goals, Murphy recommended that this element be included in developmental programs.

The Cornell Survey noted that 10% of the respondents consciously made an "effort to integrate remedial or developmental instruction in regular course offerings as needed by students" (Cornell Institute for Research and Development in Occupational Education, 1976). Despite the small percentage of programs which practiced this sort of integration, the survey listed a consensus recommendation which paralleled Murphy's:

...to the extent possible, subject matter used in developmental courses should be drawn from regular college courses and the skills taught should be those needed by students in their occupational program areas.

(This concern was manifested in the Macomb Basic Skills Reading course and, to a greater degree, in the Basic Skills Writing course. The Basic Skills

Counseling course and Introduction to Technical Careers course addressed themselves still more directly to vocational pursuits.)

(At the conclusion of the Basic Skills Program, a related question was considered: Would vocational integration be more effective if at least one vocational class were added to the basic skills block?)

D. Integration with Vocational Classes

Several programs assume that a vocational class or classes should accompany developmental instruction for academic skills. Murphy described a technical Development curriculum in one institution which included Social Foundations, Preparatory Mathematics, General Concepts of Science, Communications Skills, and Reading Improvement plus Basic Electricity or Basic Drafting or Basic Photography (Murphy, 1974).

In another Texas institution, an Applied Studies program offered a core of academic courses for pre-business students. The core consisted of Applied Communications, College Reading and Human Relations. In addition, the students enrolled in two business electives.

Variations of the Texas patterns of integrating vocational classes with academic studies have been developed across the nation. At one extreme were eight Kansas vocational-technical schools (Briley, 1976). Each of these schools employed a basic skills center which taught reading, mathematics, technical writing, and oral and written communications. These skills were taught to students, "as needed," in order to help them succeed in vocational classes. Scheduling in the learning centers was usually informal. The instructors developed "self-directional" materials to give students a sense of responsibility for their learning process. The basic skills centers were funded on a yearly basis by the Kansas State Department of Vocational Education. Moreover, the State evaluated the centers according to its objectives:

- (1) Seventy-five percent of the students enrolled should gain two grade levels in reading a year.
- (2) A student will solve mathematical problems pertinent to his vocational field.
- (3) The student will read and understand resource materials in his vocational field.
- (4) The student will write clearly and concisely materials necessary for success in his vocational field i.e., reports, forms, charts, etc.
- (5) The student will accept the responsibility for his actions in both spoken and written communication.
- (6) The student will listen to and comprehend oral communications in his vocational field.

The author of the Kansas document, Paula Briley, reported that instructors were able to use some conventional materials, but she admired their ability to adapt or improvise individualized materials to supplement training for a wide variety of vocational classes.

E. Adapting Teaching Materials to Vocational Training and Vocational Needs

The importance of adapting teaching materials to skills which students would need for vocational classes and which they would need on their jobs has been addressed by several researchers. Reports from Purdue and from Wisconsin seemed especially ambitious and detailed.

The Purdue reports were addressed to the needs of adults with minimal academic skills who wished to enter skilled or semi-skilled occupations (Moe and others, 1979). The reports covered requirements of reading, writing, listening, speaking, and mathematics for the training and practice of ten occupations. The researchers derived their information for each report from materials collected during visits to three job sites and three vocational college courses. Each of the ten reports concluded with a table summarizing the reading and mathematics requirements for all ten occupations.

The Wisconsin report concentrated on communication skills which students in postsecondary vocational/technical institutes should possess upon graduation (Farnig and Boyce, 1976). The report generated by the Mid-State Vocational, Technical, and Adult Education District, Wisconsin Rapids, Wisconsin -- surveyed employees and graduates involved in eleven different industrial and service areas. Useful competencies were defined and ranked for each type of occupation. The conclusion of this report stated that "...these skills can be presented in the classrooms and/or learning laboratories and can be learned by students." And the recommendation was that the "instructional materials which can be utilized to teach/learn these competencies be identified and categorized." Finally, the report recommended that similar research be conducted for physics, chemistry, mathematics, and social science.

Both the Wisconsin and the Purdue reports listed extensive bibliographies pertaining to basic skills requirements for occupations and occupational training.

F. Career and Personal Guidance in a Counseling Course

In some developmental programs, the connection of academic studies to vocations is not made in a course like reading, writing, or mathematics so much as it is in a counseling component. Murphy described an Occupational Relations course, taught by a counselor (Murphy, 1974). The course "provides students the opportunity to explore their interests, abilities and personality traits as they relate to on-the-job demands such as punctuality." More often, a counseling course will not concentrate to such a degree on vocations. Rather, the counselor will introduce matters of personal adjustment as well as career training. Murphy discussed a Human Relations course in another Texas program which taught the students to analyze the job market, to fill out applications, and to develop a resume. Additionally, the course employed the transactional analysis model to "assist students in understanding themselves as well as interpersonal relationships."

Sometimes, the Counselor does not teach a separate course but is closely and continually involved in the developmental effort. In the widely employed Thirteen College Curriculum Program model, "...the counselor was established as an integral part of the new educational team with responsibility for recruiting students, arranging campus and financial aid packets and for helping students with personal, social and academic matters" (Donovan, 1976).

What appeared to be an extremely pervasive system of "Aggressive Counseling" was adopted by the People Center program of Staten Island Community College (Donovan, 1976). "Each Counselor is required to have two personal contacts as well as two telephone contacts per month with each of his students." Furthermore, "Each semester students rate counselors on such variables as concern, empathy, respect, support, etc. and on more specific factors such as help in studying, staying in school, with registration, courses, instructors, and financial aid procedures." Moreover, "Counselors are held responsible for the academic performance of students on their caseload...."

In the preparation of Macomb's Basic Skills Program, the question of whether to integrate counseling with the academic courses or to present a distinct counseling course became an issue. The counselor, Bart Fiumano, preferred to work within the parameter of the other courses. The other team members, who could not easily imagine how the counseling could be interwoven with their courses, encouraged him to develop a separate counseling course. As developed, that course concentrated on personal assistance. An additional course, taught by a technical division teacher, Chris Panos, concentrated upon career orientation.

G. Orientation

An orientation period to introduce developmental training was usually one of the most important responsibilities of a counselor. Roueche and Snow (1977) urged consideration of an entire semester-long orientation "course" which resembled some "counseling courses." The orientation course would include diagnostic testing and would confer institutional credit. Roueche and Snow believed that the orientation course "would ease the transition from non-student to student and provide an opportunity for assessing the facilities and faculty of the college." In her discussion of "Programs that Work," Slade (1977) referred approvingly to orientation sessions "which propose to demystify all aspects of college life."

The orientation sessions in several developmental programs varied in length and content, but most were much shorter than a semester. At Bronx Community College, an initial slide presentation was followed by a six-session, no-credit orientation program (Donovan, 1976). At Staten Island Community College, orientation occurred during the months preceding classes when students meet "several times" with program counselors. The most elaborate orientation system noted had been developed by Southeastern Community College, Whiteville, North Carolina, for its "Resources for Student Learning" program:

Before classes begin students are oriented to the program and to college by spending three days in a

retreat that is far away from the college campus. Workshops, led by RSL faculty, serve to introduce students to each other, to the faculty, and to what will be expected of them in college. Activities are structured to improve self-concept and to introduce students to contracting. Orientation is continued in the Fall quarter in "Orientation 101" which meets twice a week. Study skills and personal adjustment are emphasized in this segment.

For Macomb's Basic Skills students, some orientation was provided by Macomb County's CETA office in Mount Clemens, Michigan. All but two of the students attended a five-day session at the office's assessment center where they were given a battery of tests, some vocational advising, and some instruction in study skills. Prior to the beginning of the semester, the students came to the MCCC campus where they were helped to register and given some familiarization with the college. During the first-day activities of the program, they were introduced to the instructors, were introduced to the courses, and were encouraged to get to know one another.

H. Structured Learning Environment

The system most conducive to the progress of developmental students - especially during initial stages - was presumed to be supportive yet structured.

In his consideration of one program that had a higher rate of retention than others Murphy (1974) surmised that a contributing variable may have been "a tightly knit supportive environment."

A similar thought was expressed by Slade (1977) in her description of "programs that work":

Nearly every program has concluded that students require an extremely structured environment upon entrance to college.

At the workshop on Educational Contracting it became clear that rules, mandates, and penalties, once considered counter-educational appear in all these programs. The structure often takes the form of educational contracting, a system wherein students contract ... to perform a specific task in a specified amount of time...

(The Contract's) purpose is to demonstrate to students that their own actions rather than external forces, such as luck or the professor's whims, will produce failure or success and to build self-discipline and internal direction.

Parallel inferences were made by Rouech and Snow in regard to the "Systems approach" (1977).

We do find indications that the use of instructional

objectives and criterion-referenced tests, as well, as flexible time frames, aids in the success of developmental students.

The negative side of a loosely structured self-paced system is expressed by Cross (1976):

Students who have not experienced success in school-related tasks are especially likely candidates for problems with procrastination and subsequent withdrawal.

None of these comments were intended to disparage individualization or mastery learning. They do, however, point to some problems which prompted a more closely structured schedule in the last half of the Basic Skills program.

I. Individualized Instruction

Cross believed that "mastery learning is the critical link in the education of low achievers." Two concepts essential to mastery learning are, of course, the achievement of "performance objectives" and the ability of the student to move at his "own pace." These concepts influenced the development of the Basic Skills Program, especially the early stages of the Math and Writing classes:

Yet Cross qualified her recommendations concerning mastery learning in several ways. One significant qualification was that mastery learning could be applied most effectively in elementary phases of a subject. Another qualification was that mastery learning would work best with subjects which could be "sequentially learned, such as reading and mathematics."

Several sources concurred with both Cross's recommendations and her qualifications. The most frequent term used to describe a system of self-paced achievement of objectives, however, was not "mastery learning" but "individualized instruction." Slade's description of "programs that work," Murphy's recommendation following his study of Texas programs, and the "consensus recommendations" of the Cornell survey all encourage "individualized instruction." Sometimes, this term seemed to be strictly applied to self-pacing through a defined sequence. Sometimes - as in the cases of Slade's description of leading a student to use his own experiences to apply to a lesson, in Murphy's concern with "how's of control," and in the Cornell survey's concern with "exit skills" - the phrase "individualized instruction" seemed to mean giving the individual as much attention as possible.

As the subject matter became more complex, as the desirability of miniscule steps became less obvious, and as the terminal point of the course became a consideration, the theory of teaching "modules" became more applicable to the Macomb experience.



J. Modules

According to Cross (1976), "a learning module is a self-contained learning unit with well-defined objectives. Usually it consists of learning materials, a sequence of activities, and provisions for evaluation." She believes, "The learning module can be used to present the concepts and interrelationships of higher-level learning, and students generally find modules more interesting and appropriate for college-level study."

The components of a module could be diagrammed in several ways. Young and VanMondfrans (1973) listed several components which correspond to the usual pattern:

The teacher sets the goals and objectives. The student is told what they are and is often allowed some choice of objective or goal.

Students often have a choice of alternative routes to pursue toward a goal or objective.

The teacher ensures that evaluation procedures are consistent with the objective. The student may have a choice of ways to demonstrate that he can perform as expected.

Evaluation takes place when the student indicates he is ready.

Another sort of description was listed by Zucker (1966). This description applied to successful behavior in remedial English classes. It is more conventional than the preceding "module" because it omits the element of self-pacing. After defining the objective, the teacher practices these successful techniques:

Teacher encourages class discussion and refrains from lecturing.

Teacher gives specific, detailed examples to illustrate each major concept taught.

Teacher constantly asks and answers questions.

Teacher allows students to participate constantly.

Teacher uses audio-visual materials.

Teacher gives individualized help in class.

Teacher corrects exercises quickly.

Such quick, individualized, and constant methods would obviously be difficult for a single instructor to manage. Intensive developmental programs nearly always employed the assistance of tutors.

K. Tutorial Assistance

No recommendation was more consistent in discussions of developmental programs that that tutors be used to enhance individualization. One consensus recommendation of the Cornell (1976) survey was that, "a peer tutoring or tutoring program should be professionally organized and managed as part of the developmental effort." In reference to "programs that work" Slade (1977) stated, "Because one faculty member cannot provide such individualized attention for an entire class, professional and peer tutors supplement the teacher's work."

Across the nation, tutors took the form of those contacted by individual students in tutorial assistance offices, learning center assistants, peer tutors recruited within classes, experienced students recruited by instructors to serve as tutors within particular classes, professional tutors recruited for developmental programs by the institutions, peer counselors recruited by a counseling division, and many others.

In Improving Learning Skills, Martha Maxwell (1979) presented a thorough and well documented chapter on "Creating Tutoring Services" which discussed the recruitment, organization, and training of tutors.

The Macomb Basic Skills program engaged two tutors. These tutors were used a little differently than other tutors for they usually assisted throughout the classes and labs of the Reading/Study Skills, Mathematics and Writing courses of each class day. Their presence was valuable in several ways; for, as Slade remarked, "...underprepared students need more contact to succeed in college than do other students."

L. Length of Developmental Program

Most of the developmental programs covered one conventional quarter or semester. Murphy referred to one developmental program for technical students, but the program was integrated with regular vocational courses. The TCCP program (Donovan, 1976) lasted for two years, but in the second year the program was integrated with conventional liberal arts courses.

At the opposite extreme would be the scheduling of instruction for the Kansas Learning Skills Centers which occurred "as needed" sometimes for very brief periods (Briley, 1976). This system generally corresponded to one "consensus recommendation" of the Cornell Survey:

Institutional course scheduling should be sufficiently flexible to allow students to take advantage of segments of developmental programs as needed.

In the three specific programs cited above, the basic skills programs either lead directly to a general education program, or accompanied conventional general education classes, or accompanied vocational classes. Whether or not a student should be expected to defer vocational or technical classes for as long as a semester in order to acquire basic skills became a question both before and after the Macomb program.

M. Measurements and Objectives

The achievement of a developmental program could be evaluated in several ways.

Pre-post tests provided the most obvious measures within the course of study. Most of the twenty Ohio postsecondary institutions, which responded to a request from the Subcommittee of the Ohio State-wide Advisory Committee on Developmental Education in 1976, justified their developmental programs by pointing to gains in reading, English, or Math tests (Subcommittee on Measurement of Effectiveness of the Ohio State-wide Advisory Committee on Developmental Education, 1976). Pre-post tests of academic skills also provided the most substantial evidence of student progress in the programs of some institutions participating as associates for the Fund for the Improvement of Postsecondary Education (FIPSE) National Project II.

More extensive evaluations compared the test gains, or grade point averages, or retention rates of developmental programs to those of control groups. Such comparisons of various sorts were made by some Ohio programs and by some FIPSE programs.

Of the FIPSE institutions, only Malcolm King and Oscar Rose Junior College attempted to measure the influence of its program on its students' job status (Donovan, 1976).

While noting the hazards of each type of measurement, Webb (1977) concedes that the most widely used and important standards for developmental programs remain retention, grade point averages, and standardized test scores.

In addition, the inclusion of some "soft evaluation" - appropriate to the purpose of the program - was encouraged by Ball's (1977) discussion of practices in FIPSE reports. He cited questionnaires which were used to obtain evidence of student responses to programs in such institutions as Southeastern Community College and the University of Florida.

The importance of systematic and pertinent data collection was emphasized by the survey of the New York State developmental staffs. One consensus recommendation was this:

A diagnostic testing program should be used as the basis for assessing student progress through performance objectives, or competencies identified for all components of developmental programs.

In order to make such rigorous evaluation possible, "The teaching assignment of developmental instructors should include time allocation for joint planning and follow-up activities" (Cornell Institute for Research and Development in Occupational Education, 1976).

One of the most important functions of those activities would be to determine "a realistic range of entrance and exit measures" which would be "in accordance with institutional policy." However, the consensus on what a developmental exit criterion should be was not clear-cut. Many, but not all, developmental staff members thought that an eleventh-grade reading level

would be an appropriate criterion. Other staff members referred to "a well-written essay," "discrete writing skills," "success on an interdepartmental mathematics test," "improved self-concept," "increased skill in decision-making," and the setting of "a firm career goal."

Because of the diversity, the Cornell survey defined the consensus on exit standards to be "general improvement" which was interpreted to mean "the instructor's judgment that improvement in skills and attitudes has taken place to the extent that the student now has a reasonable chance to succeed in his or her chosen course of study." The final test of the instructors' judgments would seem to be retention.

Macomb's Basic Skills team will measure retention of its students through the next semester of their occupational program, though that measure of success cannot be provided for this report. This report will present comparative retention rates through the Spring semester of 1981. In addition, the report will compare the gains of the Basic Skills students to conventional classes in terms of standardized tests. Furthermore, the report will present the subjective evaluations of Basic Skills students and their tutors of the several program components.

N. Follow Up

For the sake of the developmental students who have passed through a program, Roueche and Snow urged a continuance of student-to-student, student-to-counselor, and student-to-instructor relationships. For the sake of future students and for their institutions, they urged long-term evaluation. Murphy argued for a longitudinal study which would follow students until they had functioned in a work setting for at least six months. Similarly, Mackenzie (1977) recommended an evaluation system which would track "long term retention; further educational and occupational careers of students; benefits related to project staff experience in the quality of life for students and their families."

Research of this nature goes beyond the limits of the Macomb program. It will follow the Basic Skills students up to the end of the semester beginning in the fall of 1981. The Macomb Basic Skills teachers, in the fashion of other developmental teachers whom they have visited, have given most of their attention to immediate methods and results.

O. Summary

Several points emphasized by the research or description of developmental efforts across the nation either influenced or related to the design of the MCCC Basic Skills program.

1. Little specific research conclusively defined methods or staff factors which contributed to success in compensatory programs.
2. Little specific research of developmental education for vocational/technical students - except in the form of surveys - had been published.

3. The usual pattern of a developmental block included reading, study skills, writing, and math.
4. The usual range of achievement levels for beginning developmental students was from the sixth to tenth grades.
5. The most frequent pattern for developmental training still consisted of isolated courses.
6. Blocks of developmental classes, of several patterns, were frequently described.
7. Developmental programs often integrated vocational matter with academic studies.
8. Sometimes developmental programs integrated vocational classes with academic classes.
9. In extreme cases, academic teaching was used merely to supplement vocational teaching.
10. Some studies examined the literate or mathematical skills which vocational/technical students actually used in classes and in their jobs.
11. Counseling courses were frequently used to relate academic and vocational pursuits.
12. Counseling courses frequently provided personal assistance and guidance toward more positive self-images.
13. Counseling was sometimes interwoven with other developmental activities rather than being presented in a distinct course.
14. Orientation was often treated as an important segment of developmental education.
15. Developmental students were assumed to profit most, especially in early stages, from a "structured learning environment."
16. "Self-paced mastery learning" was frequently considered to be the best system for developmental students.
17. Mastery learning was described as working best in early stages and with subjects which can be "sequentially learned."
18. "Individualized instruction" was a term more frequently employed than "mastery learning" in recent publications.
19. Teaching in small units - often called "modules" - was frequently recommended.

20. Tutorial assistance was termed essential for the intensive teaching of developmental students.
21. Developmental programs which lasted as long as a semester consisted of (a) **general** education classes which led directly to other general education classes; or (b) general education classes which were accompanied by conventional general education classes; or (c) classes for vocational/technical students which accompanied vocational/technical classes.
22. A few developmental programs offered short-term segments of academic training "as needed" to assist technical training.
23. The usual measures of student progress in developmental programs were pre-posttests, retention, and grade point averages.
24. Frequently, student evaluations were employed to evaluate developmental programs.
25. Though consistent exit criteria were not clearly defined, the most frequent criterion seemed to be the instructors' judgment that the student had progressed enough to have a chance for success in the next courses.
26. Longitudinal follow-up studies to evaluate developmental programs, or particular features of developmental programs were consistently urged.

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II. COMPARISON OF CETA BASIC SKILLS PROGRAMS.

During the fall of 1980, the Macomb-Basic Skills team compared what it had learned from its survey of research to the experiences of three exemplary developmental programs in Michigan and one in a suburb of Chicago. The team also studied the results of an eight-week basic skills preparation program at MCCC for automotive apprentices.

None of the six programs which the Macomb Basic Skills Team studied could offer very broad statistical data. None of the class-sized programs began earlier than the summer of 1980.

Yet all of the programs were developed by institutions which had experience in remedial training and which had developed facilities to assist remedial training. In general, the administrators and teachers who have been involved in these efforts were convinced that they had helped their students.

(A remark must be inserted that the staffs of the institutions which the Macomb team visited - Kalamazoo Valley Community College, Southwestern Community College, Kellogg Community College, and Triton College - were enthusiastic, were knowledgeable, and were generous with their time and information. They provided admirable examples of what fellow scholars should be.)

The table below presents a quick comparison of the six programs including MCCC's Automotive Apprentice Program and Basic Skills Program. Variations in the programs have been produced by varying responses to several familiar but inevitable questions:

- (a) What are reasonable criteria for selection?
- (b) What is the right size for a basic skills section?
- (c) What is the best length of time for basic skills training?
- (d) Should basic skills training precede vocational training or accompany it?
- (e) If basic skills does precede vocational training, how can the students be encouraged to keep in mind the value of basic skills for their future vocational classes and employment?
- (f) What are the most effective components for a basic skills program?
- (g) To what extent can personal counseling forward the aims of a basic skills program?
- (h) To what extent can career counseling forward the aims of a basic skills program?
- (i) To what extent can the personal assistance of tutors enhance the achievement of basic skills students?

- (j) To what extent can systems of Mastery Learning be employed?
- (k) How can facilities best be arranged to assist Mastery Learning?

TABLE 1

CETA Program	Kellogg CC's Skills Centers	Southwestern College's COPP Program	Kalamazoo Valley CC's BEST Program	Triton College's H. E. L. P. Program	Macomb CC's Automotive Apprentice Program	Macomb CC's Basic Skills Program
Pre-Tests	(by College) Career Reading Progress Report; College Math Test; SRA Writing Test; (also referral of instructor)	(by College) Several Tests; TABE and College Boards have been used.	(by Subcontractor) Writing and Math Tests originated by college; Nelson-Denny Reading Tests	(by College) Math and Reading Tests originated by college; Essay and Sentence-Writing Tests	(by CETA Sponsor) Nelson-Denny, Reading; Comprehensive Test of Basic Skills, Math.	(by CETA Sponsor) Nelson-Denny Reading; Comprehensive Test of Basic Skills, Math
Achievement Level	No specific criteria except referral to writing clinic if achieves a raw score of below 24 on SRA Writing Test.	Capability of college-level work.	8th to 10th Grade on Nelson-Denny	From college-level to kindergarten level	6th to 9th Grade on Nelson-Denny; 6th Math	7th to 9th Grade on Nelson-Denny
Number per Section	No class-sized CETA groups 15 Students per clinic at a given hour	20	25-30	60 Total; subdivided into groups as small as five	16	24
Duration	From a few weeks to a whole semester	4 Weeks	10 Weeks	3 Days to 3 weeks depending on a student's public assistance job schedule	8 Weeks	16-Week Semester
Weekly Schedule	Optional: defined by student contract with clinic	30 Hours	30 Hours	36 Hours	24 Hours	30 Hours
Component	Reading Skills Writing Skills Math Skills (1/2 to 3 Credits from any clinic, depending on Students' contract)	Reading - 3 Credits Writing - 3 Credits Math - 3 Credits Career Exploration - 2 Credits	Reading - 2 Credits Study Skills - 3 Credits English - 3 Credits Math - 1 Credit Career Decisions - 1 Credit	Monday - Thursday Reading 1-1/4 hr/day Writing 1-1/4 hr/day Math - 1-1/4 hr/day Communication/ Computation 1-1/4-day Plus 1 hr/day for each class No College Credit	Reading - 3 Credits English - 3 Credits Math - 2 Credits Counseling Seminar - 2 contact hrs., no Academic Credit	Reading - 4 Credits Writing - 4 Credits Math - 4 Credits Counseling - 3 Credits Introduction to Technical Careers - 3 Credits
Support Staff	Student Assistants to keep records and help with machines	Tutorial Assistants	Experienced students employed as tutors in lab	Tutors, Student Aides	No Tutors Programmed Learning Instruction	Tutors, internal consultants; Guest speakers for Counseling and Introduction to Technical Career Courses
Facilities	Writing Lab Reading Lab Audio/Tutorial Reading Lab Math Lab	Learning Center Lecture Hall, Classroom	Writing Lab and Math Lab Classroom	Learning Assistance Center including Reading, Writing, and Math Areas Plus Counseling Offices	Classroom, Programmed Learning Center Visitation to Automotive Facilities	Classroom, Programmed Learning Center

A. Components

As the table indicates, all six programs had some elements in common: reading, writing, and math components. These components did not appear to be closely correlated.

B. Counseling

Except for the program at Kellogg Community College - which did not teach class-sized CETA groups - all programs offered components which presented a greater or lesser degree of personal counseling and career counseling.

In fact, Kalamazoo Valley Community College provided two sorts of counselors: CETA Counselors, who gave personal counseling plus assistance in terms of benefits, transportation, and CETA program information; and Kalamazoo Valley Community College staff counselors, who also gave personal counseling in addition to teaching a career awareness course.

In MCCC's Basic Skills Program, personal counseling and some career counseling was undertaken by the Counseling course. The Introduction to Technical Careers course attempted to acquaint the students with different possibilities for vocational advancement.

C. Tutors and Teaching Assistants

Most of the programs provided another sort of personalized assistance in the form of tutors. At Kellogg Community College, student assistants were used only to keep records and manage the teaching machines in the learning skills centers.

In three other programs, tutors were considered essential teaching assistants. Kalamazoo Valley Community College utilized the help of experienced students, including ex-CETA students, in the learning labs. Southwestern Community College employed tutors who had some experience as teachers. Triton college employed both types of assistants - tutors with some professional training and experienced students.

Macomb's Automotive Apprentice program did not involve tutors except in the case of a few individuals who sought help from MCCC's tutorial office.

Macomb's Basic Skills Program employed two tutors. These were students who were enrolled in some MCCC classes. Yet one had been an experienced teacher in a local high school who was also teaching a math class as a part-time instructor. The other tutor had some acquaintance with CETA students working as a cashier in MCCC's finance office. The use of tutors in the MCCC Basic Skills program varied from the disposition of tutors in other programs. At Kalamazoo Valley Community College, Southwestern Community College, and Triton, the tutors assisted students in the labs. At MCCC, both of the tutors usually attended the math, reading, and writing classes and then helped students in the labs which followed the classes. The help of the tutors was invaluable, not only in assisting students but also in providing suggestions about classwork and insights about students' difficulties.

D. Mastery Learning and Facilities

The MCCC students' work, with the help of the tutors, was individualized as much as possible. But their lessons, as the semester progressed, deviated from the methods of mastery learning. In part the deviation occurred because of the nature of MCCC's facilities.

The facilities of the other institutions seemed to have been designed for a more direct commitment to mastery learning. The arrangements of Kalamazoo Valley Community College, Kellogg Community College, and Triton resembled one another in some respects. Kellogg had separate rooms for the reading, writing, and math skills centers. Each room had teaching machines and software. Each had files of materials which might be used for individualized mastery learning.

Similarly, Kalamazoo Valley had separate rooms for writing and math labs. Each of these rooms had teaching machines, software, and files for individualized learning. However, the reading component was taught in a conventional classroom setting.

Southwestern used only one large room for reading, writing, and math work. The software, hardware, and lesson files were, again, available for mastery learning. Placing all the labs in one room, nevertheless, lead to a problem with which the Southwestern staff apparently felt it had learned to cope. A student who was working on math, for instance, would turn for help to the first teacher or tutor who was free. As a result, the teachers and tutors felt that they had to learn to assist in all the academic areas.

MCCC's facilities contributed to different sorts of strengths and weaknesses. MCCC's Basic Skills team enjoyed the use of a large Programmed Learning Center which was located next to the Basic Skills classroom. Both the Basic Skills program and the Automotive Apprentice program made considerable use of the Programmed Learning Center.

Nonetheless, the layout did not make Mastery Learning as easy to pursue at MCCC as at the other colleges. Mastery learning necessitates files of lessons which are organized and readily assessable. The other colleges had file rooms or areas which were usually managed by a student assistant. The lessons and records for the reading and writing classes were kept in the MCCC classroom (J-229). But a file cabinet can become easily disorganized if a class of students tries to search through it.

E. Mastery Learning Materials

Still another problem of introducing mastery learning at MCCC was the necessity of providing enough materials to fit the level and interests of the class.

Kellogg, Kalamazoo Valley, Southwestern, and Triton had accumulated large blocks of such materials. They had originated many of their materials and had learned from experience which other materials were effective. The Macomb team was in the process of learning about and originating materials. So its stock of available lessons was not as large as those of the other programs.

F. Length of Programs

One of the difficulties of practicing self-paced mastery learning is that the faster students keep getting farther ahead and the slower students keep falling farther behind. Probably the MCCC difficulty was exaggerated by the sixteen-week course. The Basic Skills Program was longer than any other of the class-sized CETA programs.

The Kellogg learning centers, which did not serve groups made up entirely of CETA students, worked out individual contracts with students to achieve certain skills. The achievement of these skills might take as little as three weeks for one student and as long as a whole semester for another. But the choice was that of the particular student.

Triton College's H.E.L.P. program would also vary its schedule. Unfortunately, the controlling factor would be the student's public assistance job schedule. Depending on when the student would need to return to work, he might receive from three days to three weeks in his basic skills classes. The Triton staff could demonstrate some achievement with the 1980 H.E.L.P. program, but it was happier with the summer 1981 system. In 1981, Triton was giving a two-week job-upgrading course to CETA students. The Learning Center tutors would visit the job-training classrooms to help the students acquire skills they would need with the class materials.

A pre-vocational class-sized CETA program was presented by Southwestern Community College. It lasted four weeks. Also pre-vocational was MCCC's Automotive Apprenticeship program. The Automotive Apprenticeship program lasted eight weeks. Kalamazoo Valley Community College's pre-vocational program lasted ten weeks.

Teachers and administrators of the other programs favored courses of less than a semester's length. They reminded the MCCC Basic Skills teachers that the CETA students were putting off vocational courses, which seemed to lead to employment, for the sake of reading, writing, and math classes which would not lead directly to jobs.

So a distinguishing feature of the Basic Skills program - its sixteen-week length - seemed to be of questionable value. Yet the student evaluations of the program did not indicate that the students considered the course to be too long. Fifteen out of seventeen students "strongly agreed" or "agreed" that, if the course were taught again, it should last sixteen weeks. This finding could be questioned and it is discussed at greater length in the final recommendations.

G. Summary of Distinguishing Features

The most distinctive features of MCCC's Basic Skills program appeared to be these:

- (1) It was taught for a greater length of time than the other programs.
- (2) It employed mastery learning techniques somewhat less than the other programs.

- (3) It used tutors differently, by having the same two help in all the Math, Reading/Study Skills, and Writing classes and labs.
- (4) The program introduced two different courses which gave some help with career orientations. The Introduction to Technical Careers Course presented career possibilities and the Counseling course presented help with personal and career planning.

III. EXTERNAL CONSULTANTS

The Macomb Basic Skills team was fortunate to obtain two notable authorities as external consultants.

Team members had a lengthy interview with John E. Roueche, co-author of Catching Up: Remedial Education and Overcoming Learning Problems, at the Atlanta Developmental Conference, November 6, 1980.

On November 25, the MCCC Campus was visited by Martha Maxwell, author of Improving Student Learning Skills and Skimming and Scanning Improvement.

Prior to the meeting with each authority, the team had forwarded an eighteen-page description of the proposed project. The description included data on student characteristics, MCCC resources, the projected schedule, the initial testing program, the program evaluation systems, and the semester designs for the counseling, mathematics, reading/study skills, and writing components.

The last section presented a list of questions pertaining to the segments of the course:

- A. Are the evaluation instruments the most useful?
- B. Would the current plan result in overtesting?
- C. Should a "self-concept" scale be added?
- D. Should the career awareness lessons be integrated into the other courses rather than being presented in a separate course?
- E. Would a closer integration of all the courses be useful?
- F. Is the current weekly schedule as useful as it could be?
- G. Should the students' work be scheduled, as much as it is, in one room?
- H. Should an attempt be made to integrate the CETA students more fully into the student body?
- I. To what extent should the CETA students' judgments be solicited to influence the program's design?
- J. What is the current consensus on the problem of math anxiety?
- K. What would be the practical considerations of attempting to balance individualized instruction with self-pacing?
- L. What is the current judgment of the importance of discovering and planning for learning styles?
- M. What would be some sources for useful computer-taught programs?
- N. Should other features be added to the means of evaluating the program?

Neither Roueche nor Maxwell responded to the list in a question-by-question manner. Nevertheless, they did address the Macomb Team's concerns.

Their remarks, though varying in particulars, were encouraging. Their cautions and recommendations did suggest similar sorts of modifications.

1. Both were concerned about motivation. They stimulated renewed attention to the problem of convincing the students that reading, writing, and math would be useful for their vocations.
2. Each encouraged the use of materials which the students could directly relate to jobs and interests.
3. Both suggested a clear definition of course objectives for the students.
4. Both suggested a clear structuring of schedules and rules about punctuality and attendance.
5. Both reminded the team that rewards and penalties should be administered to all the students in exactly the same way.
6. Both encouraged short-range incremental lessons.
7. Roueche believed that students should not be given many choices about pace.
8. He recommended that the courses should follow class objectives. For those students needing more time, lessons could be expanded "horizontally."
9. Both were concerned that the assessment package might result in overtesting.

The advice of Doctor Maxwell and Doctor Roueche influenced the program design in the direction of more careful structuring of policies and lessons and resulted in a little less testing than had been originally planned. Their concern about motivation corresponded to a team concern which resulted in the addition of the Introduction to Technical Careers Course to the program.

IV. PROGRAM DESIGN AND SEQUENCE

A program for twenty-five CETA students was planned to begin on January 16, 1981, and to end on May 15. To increase basic skills the program presented mathematics, reading/study skills and writing courses, plus working labs. To provide personal and vocational support, the program presented a Counseling and an Introduction to Technical Careers course.

If the program were successful, the students should, at its conclusion, be able to succeed in a variety of occupational classes at a higher rate than the CETA clients who had not undergone the program.

A. Questions of Design

The plan had been questioned by instructors and administrators who had some experience with CETA students for two important reasons.

First, a semester was considered to be too long for pre-vocational students. The thought was that unemployed adults would not want to sit through sixteen-weeks of basic skills before getting some training which would lead to jobs.

The second apprehension was that an entire class of CETA students would reinforce one another's personal and behavior problems. This fear had some basis in experience. In fact, after a few bad experiences some years before, the technical areas had argued against enrolling entire sections of CETA students. An exception was the section of CETA students which had received basic skills training in the Fall 1980 semester. However, that section enrolled only sixteen students, it lasted only eight weeks, and it was intended for students who shared a common interest in the Automotive Apprenticeship program.

B. Selection Criteria

For the June 17, 1980, Progress Report, the Basic Skills team had worked out a definition of the students for whom its program was being planned.

General Definition of Students for whom the course is intended:

The course will be designed for those students it can help to prepare for (1) success in further college courses or for (2) entrance-level employment skills.

The course will not be designed for students whose skills are so lacking that they would be better served by a more elementary system.

The course will not be designed for students whose skills are developed to the point where they would be better served by orthodox college courses.

The course will not be designed for students who cannot give attention to learning problems because of emotional problems.

The course will not be designed for students who cannot be asked to give several hours a week for personal progress.

The course will be designed for those who have achieved the basic rudiments of reading, writing, and mathematics, who can be expected to give time to their personal progress, and who can cope with sympathetic demands for their attention.

This definition had been influenced by the Purdue study of literary requirements for the occupations (see Moe and others, in the "References" following the "General Review," p. 16). The definition had been even more directly influenced by the Smarr study of CETA students in Macomb Occupational classes. (See Appendix A, p. 197). These studies encouraged the inference that the program should attempt to serve students ranging from the top edge of the Adult Basic Education group to the bottom edge of those who could probably cope with college reading materials.

Consequently, the following specific criteria were presented to the Macomb County CETA office in Mt. Clemens, Michigan, and to the Warren CETA office in Warren, Michigan.

The students for whom the course is designed will conform to the following criteria:

1. The candidate must read between the 3rd and 12th percentiles (7th through 9th grade) total score on the Nelson-Denny Reading Test.
2. The candidate must express an interest in pursuing a certificate (and/or degree) curriculum at Macomb County Community College in an occupational curriculum.
3. The candidate must be willing to spend the semester prior to his entry into a certificate program engaged in intensive development of his/her reading, writing, and study skills.
4. The candidate must be able to meet his/her financial needs from the funds supplied through his/her CETA involvement and/or other funding sources.
5. The candidate should have no serious personality or social disorders which could jeopardize the success of other candidates chosen for the project.

C. Facilities

In preparation for the program, the Basic Skills administrators scheduled what appeared to be the most advantageous classroom for the CETA group. The room (J-229) was located in the Learning Media Center downstairs from the library, across a lobby from the Periodicals Room, and across a hallway from the Programmed Learning Center. Beyond the Programmed Learning Center was located a room of computer terminals for computer-taught lessons (See Appendix B, p. 205).

Despite the advantageous location of the classroom, the teachers had some worries that it might be too confining for an all-day block of classes. According to the student evaluations, a few students would have preferred changing rooms from class to class, but most did not think of the location as a problem. (See p. 41).

Nevertheless, the instructors and tutors did observe that the atmosphere of the crowded room sometimes became stifling especially late in the afternoon.

Another limitation which has been previously noted (p. 22) was that the classroom could not readily be equipped with the files of materials necessary to practice mastery learning.

On the other hand, a file cabinet to store lessons, a steel cupboard to store supplies, and book shelves for easy-reading materials were added to J-229.

Furthermore, the confinement of the classroom was alleviated during lab periods by the usual availability of a seminar room (J-221) directly across the hall.

Under current conditions, no single classroom could have been more practical than the one which was assigned to the program.

D. Tutors)

Tutors were necessary for any attempt to individualize lessons. The program improvised a way of using tutors which had never before been employed at MCCC and which, as previously mentioned, had not been employed by any other comparable program.

Two tutors assisted the Reading/Study Skills, the Math, and the Writing classes and labs each class day. This method had some advantages and some drawbacks which the characters of the tutors minimized.

The Basic Skills Team was fortunate to discover a pair of tutors with some experience and with a good amount of tolerance and optimism. Frank Gunnip had been a high school math teacher. During the Basic Skills semester, he was also working as a part-time teacher for the MCCC math department and tutoring students of regular math classes. Linda Austerman was a sophomore taking secretarial courses. She had some experience with CETA students as a cashier in MCCC's finance office. Frank had to learn some things quickly about English, and Linda had to learn some things quickly about math.

Although the instructors held frequent meetings with them, the tutors often had to learn lessons as they were being presented to the class. This necessity may have conferred an accidental benefit because the tutors were able to tell the teachers which parts of lessons needed more attention or some modifications.

An occasional drawback was that a tutor couldn't give a student an answer or that the tutor might give an answer which would differ from the instructor's answer. In that circumstance, the student might announce to others that the tutor didn't "know." To the tutors' credit, they overrode these incidents tactfully. Such incidents merely underlined the importance

of experience for tutors and the importance of selecting tutors of appropriate character.

The presence of the tutors was vital in several ways. Most obvious was that the tutors and the instructor could give personal help to individuals.

Another significant advantage was that the tutors could often be more personal in their discussions with individuals than could the teachers. Most of the information about the students' anxieties, about their illnesses, and about many other problems came from the tutors.

The students' evaluations of the tutors give evidence of their usefulness. (See the evaluations, p. 43). The tutors' evaluations of the program give evidence of their own committed concern. (See pp. 45-47)

E. Meetings and Reports

Throughout the semester, the Basic Skills instructors held regular meetings at which they exchanged information on the progress and problems of the Basic Skills students.

In addition, they frequently held meetings with the tutors to check their impressions and to inform the tutors of the next lessons.

Three meetings during the semester were held with the internal consultants, as a group, to gain further perspectives.

Each month, the Basic Skills instructors met with the administrators and with CETA representatives. The team's activities and plans as well as the students' progress and difficulties were detailed in Progress Reports and again discussed at length.

The meetings and reports - though sometimes burdensome - helped to keep the program in focus amidst a welter of daily lessons.

F. Selection Process

In December and early January, the two CETA offices called prospects who matched the Basic Skills criteria. The students were asked if they would be interested in the program. If they were, they were directed to the MCCC South Campus to be interviewed by one of the Basic Skills teachers.

Candidates who had been processed through the Mt. Clemens CETA office had already been tested for skills and aptitudes and had been some orientation and motivation training in the office's Assessment Center. The tests included these instruments:

Nelson Denny Reading Test
C.O.A.T.S. Employability Attitudes Test
Bennetts Mechanical Test
WRATS Test (Math)
Minnesota Paper Form Board Test
M.O.I.S. Test

This testing conferred much useful information, but it also added to the Basic Skills teachers' worries about overtesting.

Unlike the Mt. Clemens office, the Warren CETA office did no testing of its own. Instead it contracted to have the Nelson Denny test administered to its clients by a private service. When candidates arrived at the Macomb Campus, the Basic Skills teachers had already received their test scores. A Basic Skills teacher would interview a candidate according to a prescribed format. (See Appendix C, p. 206). As well as he could, the instructor put the candidate at ease. Then the instructor explained the purposes of the program, and the requirements of the program. The candidate was given a set of course descriptions which the instructor further explained. (See Appendix D, p. 207). Thereafter, the instructor and candidate together filled out a "Counseling Record." (See Appendix E, p. 209).

When this process had been completed, the candidate was asked again if he or she would still be interested in undertaking the program. Most were, but a few weren't.

After the candidates had been interviewed for the day, the Basic Skills instructors discussed the possibilities. A few candidates appeared to be overqualified for the program; a few appeared underqualified. Between December 10 and January 9, the instructors interviewed thirty-six candidates of whom twenty-five were selected.

G. General Student Characteristics

The makeup of the final group was something of a surprise to the teachers. It included many more women than had been anticipated. Seventeen of the twenty-five students were women.

Another surprise was that the group included no black students. Only two black candidates had been sent for interviews, and these had been disqualified because they already had jobs.

The age range was from nineteen to forty-eight. However, the majority were in their twenties.

All had been employed, though a couple of the older women had held only unskilled jobs years earlier.

A common comment by the Instructors was that the candidates appeared to be more promising than they had planned for. These initial impressions sometimes underwent revision.

Most of the students had been out of school for some time. They had natural problems developing effective study habits. Their problems with listening skills and attention span are discussed in the Reading/Study Skills section. Such difficulties were predictable.

A common problem which the instructors could not anticipate at the beginning of the program was poor health. Three of the students were hospitalized during the course of the program. Three suffered from complications of pregnancies. Two suffered from eye problems. Others had what seemed to be genuine illnesses which interrupted their studies from a couple of days to a couple of weeks. A possible inference could be that the students hadn't learned basic skills earlier because of poor general health.

In addition, many of the students experienced the sorts of problems which could be associated with a low economic status - car breakdowns, family pressures, and court appearances.

The instructors sometimes tried to speculate whether the group was unusually unlucky or if it only seemed to be more unlucky than their other classes because they had learned so much more about the trouble of the basic skills students.

H. Student Responses to Canfield Learning Styles Inventory

On the first day of class, the students were given the Canfield Learning Styles Inventory published by Humanities Media of Ann Arbor, Michigan. Their responses indicate some further class characteristics.

1. The most striking characteristic of the class as a whole was the frequency of low self-expectancy. The "Expectancy Score" of the Inventory was registered on a scale from 1 to 5. A score of 1 would imply the expectancy of failure, and a score of 2 would imply an expectancy of low achievement such as a D grade.

Out of the twenty-two students who were present to take the Inventory almost half - ten - apparently expected to receive D's or E's. Four registered an "Expectancy" score of 2; and no fewer than six registered an "Expectancy" score of 1.

A total of ten predicted that their level of performance would be at "an average or satisfactory" level of C. Only two expected that their performance would achieve "an average or good" B level; and no student expected to achieve an "outstanding or superior level" of A.

The cluster of scores at the bottom of the "Expectancy" scale was one of the most clearly definable sets of reactions to the Inventory.

2. The conditions of learning which the students preferred also were indicated by some clearly recognizable, and rather surprising, clusters.

Each item of this part of the inventory required the student to number four choices. The "most preferred" choice would be numbered 4; the "second" would be numbered 3; the "third" would be numbered 2; and the "least preferred" would be numbered 1. However, the Inventory converted these judgments into a five-point scale with 5 indicating "most preferred" and 1 indicating "least preferred." A 3 would suggest that the students' feelings were uncertain or divided.

Student preferences for conditions of learning were unexpected. The instructors had surmised that the students had not learned well in their earlier schooling because they had disliked authority.

To the instructors' surprise, the category which received a high number of positive rankings (9) with no negative rankings was "Authority." (three 5's; six 4's; thirteen 3's; and no 2's or 1's). "Authority" is given this definition by the Inventory: "Desiring classroom discipline and maintenance of order; having informed and knowledgeable instructors." No other category received more than nine positive or negative rankings, and no other positive or negative rankings received zero.

The strong preference for "Authority" must be coupled with a distinct aversion to "Instructor". The category of "Instructor" was defined in this way: "Knowing the instructor personally; having a mutual understanding; liking one another." Nine negative rankings were recorded for this category. This was the highest number of any set of negative rankings. (The totals were two 5's; three 4's; eight 3's; seven 2's; and two 1's).

When the preference for "Authority" and the aversion to "Instructor" are combined, a certain picture emerges. A large part of the class preferred a classroom run by a strong authority figure who would know his job but who would not become personal. This picture suggests a conventional classroom system.

Nevertheless that inference must be qualified. The only other set of responses which clustered as many as nine was the group of positive responses to "Goal Setting". "Goal Setting" is defined in this way: "Setting one's own objectives; using feedback to modify goals and procedures; making one's own decisions on objectives." (The totals in this category were four 5's; five 4's; eleven 3's; two 2's; and NO 1's.) Therefore the preferred picture becomes that of an orderly classroom, run by a knowledgeable but impersonal instructor, which permits the pursuit of one's own goals.

A further qualification might be made in light of negative student responses to "Organization". "Organization" was defined in these words: "Course work logically and clearly organized; meaningful assignments and sequence of activities." This category drew more negative responses (8) than any other except "Instructor". (The totals were two 5's; one 4; eleven 3's; six 2's; and two 1's.) Possibly, the number of negative responses was prompted by the

students' inference that the organization would be someone else's. A pair of choices which distinguishes "Organization" from "Goal Setting" would be these:

(Choose the "most helpful for improving your school experience".)

- a. There were more class outlines and clearer statements about what the classes were all about.
- b. There were more opportunities to think through my capabilities and set goals for my performance.

Paralleling the dislike of "organization" was a predisposition against "Detail". The definition of "Detail" was "Specific information on assignments, requirements, rules, etc." Only three students made favorable responses to "Detail" whereas six made unfavorable responses. (One 5; two 4's; thirteen 3's; five 2's; one 1.) The independent state of mind implied by the preference for "Goal Setting" and aversion to "Organization" and "Detail" seems to be distinguished further by reactions to "Competition" and "Independence".

The instructors had surmised that the students would dislike "Competition: Desiring comparison with others; needing to know how one is doing in relation to others." Yet "Competition" drew seven favorable responses and only three unfavorable responses (two 5's; five 4's; twelve 3's; three 2's; and no 1's).

Attitudes toward "Independence" were more evenly divided. "Independence" was "working alone and independently; determining one's own study plan; doing things for oneself." Six favorable responses were recorded "Independence", but five negative ones were likewise recorded (three 5's; three 4's; eleven 3's; five 2's; no 1's).

A category which the instructors thought the students would favor was "Peer: Working in student teams; good relations with others; having student friends, etc." Yet the class was almost evenly divided in regard to this category. Six positive and seven negative responses were indicated (no 5's; six 4's; nine 3's; five 2's; and two 1's).

The class preferences for conditions could be ranked in this order:

Authority:	9+ ; 0-
Goal Setting:	9+ ; 2-
Competition:	7+ ; 3-
Independence:	6+ ; 5-
Peer:	6+ ; 7-
Detail:	3+ ; 6-
Instructor:	5+ ; 9-
Organization:	3+ ; 8-

The ranking suggested preferences for these conditions:

A setting, stabilized by knowledgeable authority, which permitted independent pursuit of personal goals but which did not necessitate personal interaction.

Some strong cautions must be inserted before these preferences are accepted. The Canfield Inventory was given the first day of the class before the students knew one another and their instructors. Furthermore, most of the students had been out of school some years.

Soon after the semester had begun, most of the class had arranged itself into informal cooperative peer groups; and eventually, a number even called for more goal setting by the instructors. Nevertheless, reactions to the conditions section of the inventory seemed enlightening and they influenced some course practices.

3. Student preferences for course content was likewise surprising considering the high proportion of females in the class.

The preferences may be ranked in this order:

"Inanimate: Working with things; building, repairing, designing, operating." (9+ ; 2-)

"Numeric: working with numbers and logic, computing; solving mathematical problems, etc." (6+ ; 4-)

"People: Working with people; interviewing, counseling; selling, helping." (4+ ; 6-)

"Qualitative: Working with words, or language; writing, editing, talking." (3+ ; 9-)

More than two-thirds of the class preferred working with things or numbers possibly because of their vocational interests. The aversion toward working with language had obvious implications for the writing and reading classes although the students preferred reading as a mode of learning.

4. Student preferences in regard to modes of learning appeared to contradict their responses to preferences in regard to course content.

The preferences for modes of learning follow this order:

"Reading: Examining the written word; reading texts, pamphlets, etc." (6+ ; 3-)

"Iconic: Viewing illustrations, movies, slides, pictures, graphs, etc." (6+ ; 5-)

"Direct Experience: Handling or performing; shop laboratory, field trips, practice exercises, etc." (4+ ; 7-)

"Listening: Hearing information; Lectures, tapes, speeches, etc." (3+ ; 6-)

Given the preferences of course content, an inference might be that "Direct Experience" would rank higher as a preferred mode; but, of course, it did not. Additionally, the preference for "Reading" as a mode was puzzling.

The downgrading of "Listening" was no surprise in retrospect. All of the instructors commented upon the students' troubles with listening to directions and explanations.

I. Acceptance and Registration

The candidates were informed by mail whether they had been accepted or rejected. On January 16 the project Counselor, Bart Fiumano, helped the candidates through the registration process and gave them a brief orientation to the college.

J. First-Day Activities

The first-day activities had been with the recommendations of the external consultants and other authorities in mind. The intention was to be welcoming and supportive and yet to create a clearly defined structure.

Activities followed this schedule:

- 8:00-9:00 The class met with all four instructors. Each instructor introduced himself to those students who had not met him and explained the purpose and usefulness of his class.
- 9:00-10:00 The Canfield Learning Styles Inventory was explained and administered.
- 10:00-11:00 The students were asked to introduce themselves to one another. Each student was asked to interview one other student. Then each student gave an interview to a third student. The interviewers were asked to take notes for a paragraph to be written later.
- 11:00-12:00 The students were taken on a tour of the Programmed Learning Center, the Computer Terminal room, the library and the Student-Community Center. From the Student-Community Center, the students could view the layout of the campus.
- 12:00-12:30 Lunch
- 12:30-2:00 A business meeting was held. The students were given copies of the Attendance Policy, the Promptness Policy, and the Assignments policies. (See Appendix F, pp. 210-211). These policies were discussed with the students. The students then signed a form which noted that they had read the policies and had understood them. Thereafter, textbooks and supplies were distributed to the students and they were assisted with the forms noting that they had received those items.
- 2:00-3:00 The students were asked to write the paragraphs based on the notes of their interviews with other students.
- 3:00-4:00 A guest speaker was introduced. He was Mr. Leonard J. Rinke, a Divisional Manager of the Fisher Body Division, General Motors. Mr. Rinke told the students of the usefulness of basic skills in business and how he had to struggle to acquire those skills in order to get ahead. The students questioned Mr. Rinke and then questioned the instructors about the college and the program.

The students seemed to share the first-day activities in good spirits, but three of them had missed it. One had reported that she would not be undertaking the program because of transportation problems.

When contacted by the Counselor, two others reported that they were ill. These two joined the program within a week.

K. Further Testing

On the second day, a Tuesday, the students were given two more diagnostic tests.

In the Reading/Study Skills class, they received the McGraw-Hill Reading Rate, Comprehension, and Skimming-Scanning Test. In the Mathematics class, they received the Mathematics Attitudes Scales test.

On Thursday, the Counseling class administered the Nowicki-Strickland "Focus of Control Scale." After all the testing they had been given, the students did appear to be reaching the limits of their tolerance.

On the following Monday, the English instructor felt obligated to remind the students of the usefulness of the testing to them and to the program. He then administered the Written English Expression test.

The testing program, therefore, seemed onerous to the students but necessary for the sake of objective data.

L. Weekly Schedule

The weekly schedule followed this pattern:

BASIC SKILLS PROJECT

WEEKLY SCHEDULE

TABLE 2

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00 a.m.	RDG 292 J-229	RDG 292 J-229	RDG 292 J-229	RDG 292 J-229		
9:00 a.m.	**RDG LAB J-229 or PLC	RDG LAB J-229 or PLC	RDG LAB J-229 or PLC	S.S.R. (Sustained Silent Reading)		
10:00 a.m.	MTH 292 J-229	MTH 292 J-229	MTH 292 J-229	MTH 292 J-229		
11:00 a.m.	**MTH LAB J-229 or PLC	MTH LAB J-229 or PLC	MTH LAB J-229 or PLC	MTH LAB J-229 or PLC		
12:00 p.m.	LUNCH	LUNCH	LUNCH	LUNCH		
12:30 p.m.	ENG 292 J-229	ENG 292 J-229	ENG 292 J-229	ENG 292 J-229		
1:30 p.m.	**ENG LAB J-229 or PLC	ITC 292 R. & T Bldg. runs to 4:30	ENG LAB J-229 or PLC	ENG LAB J-229 or PLC runs to 3:30		
2:30 p.m.- 4:00 p.m.	**COUN 292 J-229		*COUN 292 J-229			

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The lab periods offered the instructors the advantage of flexibility, and the students did not make many criticisms of the way the week was organized. (See the student evaluation, p. 42).

Nevertheless, as the tutors commented (p. 45), the three-hour English period which ended the week sometimes seemed too long to be completely effective.

M. Problem Areas

As the semester began, and throughout its length, the majority of the students appeared to be hardworking, cooperative, and optimistic. These essential points must be emphasized, for the next series of points will concern problem areas.

- (1) The "tightly knit" supportive atmosphere of the single classroom seemed to have some pluses and some minuses. The students soon developed some strong sub groups. They did not change the original accidental seating pattern of the first day for several weeks.

In part, this pattern seemed helpful. They gave one another emotional support and they gave one another permissible help in their lab periods.

On the other hand, the sub-groups occasionally generated petty jealousies and hostilities. The instructors and tutors sometimes speculated that the classroom situation had generated juvenile behavior which would not have occurred under less intensely personal conditions.

A couple of examples will suffice. On one occasion, an instructor entered the classroom to find that the students were having a paper wad fight. On another occasion, a young woman of one sub-group developed an animus toward a young man of another sub-group. She inserted a needle in the cushion of a chair where she expected him to sit. During a lab period, the chairs became switched around, and she sat on her own needle. Her mortification was such that she departed for the day.

Incidents like these could be glossed over. But a few more serious happenings as well as occasional outbursts and flare-ups were distracting. Such behavior would not be likely if the students were in a conventional remedial class.

- (2) Tardiness sometimes became another problem. The students were seldom late at the beginning of the day. But without constant prodding by the Writing instructor, some would develop habits of tardiness after the half-hour lunch break. Docking the late-comers fifteen minutes of pay for tardiness had some effect, but the effect was not absolute.

- (3) Absences became a serious concern. Most often, students would call in to report why they had missed classes. In many cases, the reasons were health problems.

Yet by the fifth week, chronic absentees were called to a special meeting and given a collective warning. Despite warnings, absences increased after the semester break. The April 22 Progress Report noted that fourteen of the twenty-one remaining students had missed at least once during the preceding two weeks. Eventually, one of the students had to be dropped for excessive absences.

The instructors concluded that they should have adhered to their own absence policy in a more severe fashion.

- (4) Drops occurred sometimes by accident and sometimes, probably, because of excessive absences.

One of the original twenty-five dropped before the program began. The reason she gave was a transportation difficulty.

Two more dropped during the first six weeks. One had moved out of the Macomb CETA district and had, therefore, become ineligible for the program. One said that she could not find anyone to care for her young children.

Yet as late as April, within five weeks of the semester ending, the program still had retained twenty-one out of the twenty-four who had began classes.

In the last weeks, one was dropped for excessive absences. Another dropped following a couple of weeks in the hospital with a back problem. One other student dropped, he told the Counselor, because he felt guilty about not looking for a job. A final student dropped within the last two weeks without giving a reason.

Despite the drops, the retention rate for the program was significantly higher than it was for the teacher's other developmental classes. This point is demonstrated by the program evaluations. (See p. 47)

- (5) Semester Break and Human Potential Workshop.

A possible decline of productive behavior may have been a consequence of a long break in the academic classes. The Spring break occurred from March 12 to March 23. The break was followed by the Human Potential Workshop led by counselors from March 23 to March 26.

The students thus had no writing classes from March 12 to March 26. And they had no Math and Reading/Study Skills classes from March 12 to March 30.

Most of the students thought that the Human Potential Workshop had helped them. Yet the Workshop might have been undertaken at a better place in the semester. The tutors, whose sympathetic judgment was invaluable, considered the two-week break "disastrous." (See the tutors' evaluations, page 46).

N. Concluding Activities

As the semester neared its conclusion, some students became increasingly anxious about their selection of their next courses and about their choice of vocational paths. The description of how the students were guided to selections of programs and courses is presented in the discussion of the Counseling course.

Another important concluding activity was the administration of post-tests and student evaluations. Again, the instructors had misgivings about giving the students too many tests and questionnaires in too brief a period of time. But the instructors could find no other time than the last week for these final necessities.

O. Student Evaluations of the Program Design and Sequence

The team spent some weeks formulating an instrument for student evaluation of the program components. The instrument obliged the student to note whether they "Strongly Agreed" (SA), "Agreed" (A), "Disagreed" (D) or "Strongly Disagreed" (SD) with statements about the design elements which were to be evaluated.

The range of four choices followed the advice of external consultant, Dr. John Roueche, to force the students into some degree of approval or disapproval. Student evaluations of the program's classes are presented at the end of the discussion of the classes. The evaluations of the overall design and sequence of the program are presented here.

- (1) The single classroom in which most of the program was conducted did not seem to create problems for most students though responses to the last item (5) indicates that it could eventually become confining. The general approval of the one-room setting came as a mild surprise to the instructors.

TABLE 3
Evaluation of Classroom

	SA	A	D	SD
1. The classroom used for instruction in reading, mathematics and composition....				
1. was comfortable.	5	9	2	1
2. permitted discussions among students.	7	10	0	0
3. made it possible for instructors and tutors to provide over-the-shoulder help to students.	9	8	0	0
4. was too crowded.	1	4	9	3
5. became confining after a while.	5	7	3	2

At the bottom of the questionnaire, the students were asked to add any further comments they might care to make. Two students commented that they would have preferred to change rooms from class to class.

- (2) Evaluations of the plan for an instructional day were puzzling. Responses to 1 and 3 suggest general approval. But 2 suggests that the students would have wanted study time in addition to the lab periods.

TABLE 4
Evaluation of Instructional Day

B. The <u>instructional day</u> for the Basic Skills Program....				
1. was about the right length of time.	4	11	1	1
2. should have included a study period during which instructors and tutors would have been available to help students who needed help.	5	9	2	1
3. included enough time for each course in the program.	4	10	3	0

No students added comments about the plan of the instructional day.

- (3) The next set of items contained responses of considerable interest to the Basic Skills Administrators and teachers.

A question from the beginning had been whether an entire semester would be too long for a pre-vocational program. The responses to (1) indicate that most students did not consider a semester too long. Another important question was whether basic skills should accompany or precede vocational training. Responses to 2 and 3 suggest that the students would not have wanted to begin an entire program without classes of reading, writing, and math but that most of them would have liked some vocational courses to accompany the basic skills courses.

TABLE 5
Evaluation of Course Length

F. If it is offered in future semesters, the Basic Skills Program....	SA	A	D	SD
1. should be offered as a semester program (16 weeks).	8	7	1	1
2. should be offered before the students enter a technical training program.	11	7	0	0
3. should be offered along with some technical courses where students can practice the skills they are learning.	3	10	1	2

No students added comments about the semester length or about adding technical courses to the program.

- (4) The role of the tutors was generally appreciated by the students. The responses to (3) in the set below indicate only that the instructors usually kept charge of the grade records.

TABLE 6
Evaluation of Tutors

D. The Tutors....				
Having tutors made it possible for				
1. me to have my questions answered quickly.	3	11	2	1
2. me to quickly find out what my errors were when I misunderstood something.	4	10	3	0
3. me to quickly find out how I was progressing through the lessons.	3	8	5	1
4. me to get the individual help I needed.	5	10	1	0
5. the teacher to do different things with different people.	8	9	0	0

No students added remarks about the tutors.

- (5) The students' overall judgement of the program was highly favorable. One student did not respond to (2) possibly because of an oversight.

TABLE 7
Overall Judgement

V. OVERALL JUDGEMENT

Overall, I am

- more confident about my chances of successfully completing a job training program as a result of my participation in the Basic Skills Program.
- glad I participated in the Basic Skills Program.

	SA	A	D	SD
1.	13	4	0	0
2.	14	2	0	0

Eight students added comments indicating satisfaction for having been a participant in the program. Thirteen students added comments in praise of the program

P. Student Comments on the Basic Skills Program in Interviews for the Final Paper

As a final assignment in the Writing class, the students were given direction to interview other students. If possible, each student was to interview the same other student whom he or she had interviewed the first day of the class.

The interview was to elicit responses to these questions:

- (1) What do you think you have gotten out of the Basic Skills Program?
- (2) What more do you think you could have gotten out of the Program?

The interviewer was to note the responses and organize them into paragraphs for the final piece of writing.

Eleven students volunteered direct comments on changes in their feelings about themselves and their schoolwork. This kind of response had not been suggested by the discussion of the assignment. When giving the assignment, the writing instructor had directed the students' attention toward what they had gained from their lessons. One of the functions of the final paper was to suggest to the instructors ways of improving the designs of future courses.

Nevertheless, the students apparently perceived personal changes to be at least as important as the gains they had made in reading, writing and math. A range of quotes has been listed.

("What do you think you have gotten out of the Basic Skills Program?")

1. "In general, (he) feels he has learned something through the four month program; in how to communicate and relate to other students in the same situation."
2. "(She) has met a lot of new people. She has made some friends that she hopes to be able to keep after the program is over."
3. "(Now she) is not afraid to talk to the teacher to get help on things."
4. "She needed this program to help her so she could be competitive in college classes and to project a more knowledgeable impression on fellow peers and teachers. ... Due to the confidence she experienced in herself by taking part in and succeeding in this program, she has become energized and motivated. ..."
5. "These classes gave (her) a complete new outlook for the future."
6. "Basic Skills have given (her) a better outlook on the future, with a better prospective of the job market."
7. "(He) also has a better attitude toward school. His motivation is better too. ... he knows what goal that he has got to go for in life."

8. "...she has gained a strong sense of responsibility from the Basic Skills Program."

9. "... (he) is back in the swing of things. He has got out of being lazy and back into the routine of getting up in the morning and he is more responsible."

("What more do you think you could have gotten out of the Program?")

Two students mentioned that they would have preferred a larger room. The same two students would have preferred to change rooms for every class.

One student said that she would have liked to visit regular college classes in the technical program she hopes to follow.

One student said that the lunch hour could have been longer.

Q: Tutors' Evaluations and Comments on the Program

Some apprehension was expressed that the students' evaluations may have been colored by end-of-semester sentiments.

The tutors were encouraged to make their own judgments from the vantage of their experience. Their evaluations and comments were candid but somewhat less positive than the students' had been. The tutors reached a consensus on most points and noted any variations of opinion.

1. They "agreed" that the classroom was comfortable but added the comment "too much so." The tutors "agreed" that the room permitted discussions and again commented "too much so" and added that the room "allowed too much socializing." The tutors also "agreed" that the room was too crowded and confining.
2. The tutors "strongly disagreed" that the instructional day was "the right length of time" adding the remark "problems with attention span." They "strongly agreed" that the day included enough time for each course. The tutors added the suggestion, "there should have been an hour set aside during which students could do catch-up work, make up tests, or get extra help."
3. In regard to the semester plan, the tutors made this suggestion: "There should have been two eight-week mini-semesters with instructors permission to continue." Nevertheless, the tutors "agreed" that the program should be offered before the students entered a technical training program. On the other hand, one tutor "disagreed" and one tutor "strongly disagreed" that some technical courses should accompany the program. In addition to their responses to the questionnaires, the tutors wrote a summary of what they judged to be the programs' strengths and weaknesses. They then added their recommendations.

Tutors' evaluations of strengths

1. Overwhelming opportunity for students to master basic skills in reading, math, and writing.

2. Tremendous teacher preparation, effort, patience, and encouragement.
3. Constant effort to restore and to boost students' academic confidence and self-image. "Nothing succeeds like success."
 - a. Initial pace was not overwhelming.
 - b. Topics were repeated and re-explained.
 - c. Students were encouraged to learn from their mistakes. "Mistakes are a part of learning."
 - d. Some opportunity was given for the students to work at their own pace.
 - e. Pre-tests and re-tests took some of the pressure off.
4. Informality within a structured learning environment.
5. Students were encouraged to help each other.

Tutors' Evaluations of difficulties

1. Non-classroom setting.
 - a. easy chairs
 - b. eating and drinking during class
 - c. smoking during tests in PLC room
 - d. profanity and sarcastic language
 1. Linda did not see this as a problem; Frank felt that the matter should have been raised with the students.
2. Same "classroom" all day.
3. Lateness to class.
 - a. set a limit and then give a penalty of 1 hr. loss of pay.
4. Two-hour writing lab was difficult as the final class of the week.
5. Absences may not have been handled uniformly.
6. Many behavioral patterns that gave some of the students trouble in high school were allowed to continue.
 - a. Some were reinforced by the students themselves.
7. Two-week semester break (1 week of vacation and 1 week of the Human Potential Workshop) was disastrous for some of the students; they never recovered from it.

Tutors' Comments and Suggestions

There were two beneficial changes that took place after the mid-semester break: deadlines on writing assignments and time limits for completing math units. Some of the difficulties may have resulted from #3 under "Strengths." While some of the difficulties suggest inherent remedies, there are several additional strategies that may be helpful:

1. Have the Human Potential Workshop at the end of the program.
2. Rotate the class schedule each week.
3. Eliminate some of the participants at mid-semester.
4. Have some counseling and group discussions at the beginning of the program on high school academic and behavioral problems.

R. Comparison of Success Rates of Basic Skills and Developmental Classes

In order to compare the success rate of the Basic Skills Program to those of regular remedial classes, math instructor Jerry Brantley developed a set of tables and statistics. The tables relate the numbers of "successful" completions of the Basic Skills Program to those of Morton's developmental English 005 classes, Smarr's developmental Reading 005 classes, and Brantley's developmental Math 005 classes which were taught in the same semester. "Success" is defined as completion of a course with a "passing" grade of D or better.

	S ₁	S ₂	Total
ENGLISH 005	28	20	48
BASIC SKILLS WRITING	18	6	24
TOTAL	46	26	72

$$\chi^2 = \frac{(28(6) - 20(18))^2}{46 \cdot 26 \cdot 48 \cdot 24} = 72$$

$$= 1.9264$$

	S	S	Total
READING 005	15	10	25
BASIC SKILLS READING/STUDY	18	6	24
TOTAL	33	16	49

$$\chi^2 = \frac{(15(6) - 10(18))^2}{33 \cdot 16 \cdot 24 \cdot 25} = 49$$

$$= 1.2528$$

	S	S	Total
MATH 005	23	13	36
BASIC SKILLS MATH	18	6	24
TOTAL	41	19	60

$$\chi^2 = \frac{(23(6) - 13(18))^2}{41 \cdot 19 \cdot 36 \cdot 24} = 60$$

$$= .8215$$

$$\frac{\sqrt{1.9264} + \sqrt{1.2528} + \sqrt{.8215}}{\sqrt{3}} = 1.97$$

The figures demonstrate that the Basic Skills students succeeded at a significantly higher rate than did the regular developmental classes. The odds that the difference could have occurred by chance are only one in twenty.

S. Summary

1. A semester-long pre-vocational program for CETA students was planned:
2. One question of the design was whether a class-sized program should be developed to serve only CETA students. The higher success rate of the Basic Skills Program in relation to regular developmental programs suggested that it could be.
3. Another question of the design was whether a semester was too long for a pre-vocational program. Student evaluations indicated that it was not too long. The judgments of the tutor disagreed.
4. The students followed a seven-to-eight hour-per-day, Monday-through-Thursday, thirty-hour weekly schedule.
5. A question of the weekly schedule was whether it was too long and intense. Student evaluations suggested not; the tutors evaluations disagreed.
6. A single classroom conveniently opposite the programmed Learning Center was selected for the Program.
7. A question was whether the Program should be based in a single room. The student evaluations suggested few problems. The tutors' judgments disagreed.
8. The classroom, though convenient in some respects, could not be fully adapted to mastery learning techniques.
9. The tutors were essential to individualized instruction.
10. Frequent meetings of the instructors, administrators, tutors, consultants, and CETA representatives helped define the progress of the Program.
11. The criteria for selection of students were carefully defined. A central criterion was achievement of the 7th-9th grade level on the total score of the Nelson-Denny reading test.
12. The selection of students from CETA candidates followed a defined procedure.
13. The characteristics of those chosen for the Program differed from expectations in that there were (a) more women, (b) no Black students, and (c) more health problems.
14. Student responses to the Canfield Learning Styles Inventory indicated these characteristics:
 - (a) Almost half the students had a low expectancy of success.

- (b) A general preference for a setting, stabilized by a knowledgeable authority, which permitted independent pursuit of personal goals but which did not necessitate personal interaction.
 - (c) A preference to working with things or numbers rather than with people or language.
 - (d) A preference for learning by reading or viewing rather than by direct experience or listening.
15. The first-day activities were planned to provide a structured yet supportive environment.
 16. The testing program ran the risk of overtesting.
 17. The "tightly knit" atmosphere of the classroom seemed to encourage some mutual support and some juvenile behavior.
 18. Most students progressed in an earnest and cooperative manner.
 19. Tardiness and absences sometimes became problems during the semester.
 20. As late as April, only three students had dropped the program, but three more dropped in the final weeks.
 21. The two-week interruption caused by the Spring break and Human Potential Workshop may have demoralized some students.
 22. The tutors judged that the program could be improved by (a) design changes and (b) enforcement of student-like habits and demeanor.
 23. According to statistical evidence, the Basic Skills classes achieved significantly higher success rates than regular developmental classes taught by the same instructors in the same semester.

V. REVIEW OF RELEVANT RESEARCH OF PRACTICES - COLLEGE READING/STUDY SKILLS

During the past few decades, community college, college, and university campuses across the United States have been the scene of rapid growth of reading/study programs and/or courses. In fact, Smith, Enright, and Devirian (1975) found in a nationwide survey that 61% of the respondents were running some sort of study skills program. Along with this growth, there has occurred the development of a body of research related to college-adult reading. Two extensive reviews of recent research in the field now exist: Blanton and Smith (1975) provide a review of the research reported in over 300 journals, in Dissertation Abstracts, and in Research in Education for the period of May, 1973, through May, 1974; and Summers, Forester, and Jeroski (1978) review reports of research published in the literature for the period of June, 1974, through May, 1976. Furthermore, a critical review of current programs of reading/study skills instruction at two-year colleges was presented by Mione (1977). Additional useful reports of research on college and adult reading can be found in the Annual Summary of Investigations Relating to Reading published by the International Reading Association and in the ERIC SYSTEM (for which a guide to search procedures can be found in Basile and others, 1975).

A. Questionable Value of Research Reports for Developing Model Program

However, Sanders (1979) has found that much diversity characterizes the methods, materials, content, and operational practices of college reading/study programs. In an attempt to discover (1) whether or not these programs do make any difference and (2) what content and operational factors may have contributed to the difference, she studied nearly 700 research reports written between 1960 - 1977. Of these she found that only 28 studies described their data in useable statistical form, i.e., by relating the mean gains between treatment and comparison groups. Her meta-analysis of these studies indicated that college reading/study programs can and do have statistically significant overall beneficial effects in developing students' reading rate, comprehension, vocabulary, study habits, and grade point average. However, most importantly, as did Blanton and Smith (1975) before her, Sanders (1979) concluded that attempting to use research reports in order to create a model college reading/study program is not currently possible since there exists a serious deficiency in reporting and describing the program content and operational factors which influenced the gains. Development of a model college reading program therefore still remains somewhat conjectural.

B. Tentative Guidelines for Developing Effective College Reading/Study Skill Programs

Fairbanks (1973), from her study of the relationship of specified features of reported programs to the effect of those programs on academic achievement, developed six guidelines for program developers. Sanders (1979) found that three of these guidelines were supported by her investigation and by her broad review of programs. In

addition to these three, Sanders (1979) offered fifteen specific recommendations: five for Remedial/Corrective Reading Programs, four for Academic Support Programs, and six for Developmental Reading Programs. Other studies also supported the contention that certain reading program features affect changes in GPA; Turner and others (1974), Burgess and others (1976), and Haburton (1977). And Mione (1977), after critically reviewing three main program orientations and four other orientations found among two-year college programs, proposed five guidelines for the improvement of community college reading/study skill programs.

In order to present these features and/or recommendations in an organized manner, the remainder of this review of the literature will include them as they and the findings of other researchers and experts are related to the following broad conceptual framework:

Diagnosis
Program Design
Program Content
Instructional Methodology

1. Guidelines Related to Placement/Diagnosis

One important feature of successful programs discovered by Fairbanks (1973) and verified by Sanders (1979) was that these programs involved students in the diagnosis of their reading difficulties and made them aware of the means by which they could correct their problems. The fact that careful diagnostic testing is especially necessary for poor readers was the conclusion reached by West and Lagotic (1979) inasmuch as these authors found that poor readers, unlike capable readers, did not perceive accurately the nature of their reading difficulties.

(a) Placement

Roueche and Snow (1977) reported that successful remedial programs generally included "more tests" than did unsuccessful programs and that while senior colleges ranked the SAT as their favorite diagnostic/placement instrument, community colleges relied very commonly on the Nelson Denny Reading Test. These authors cited the following as "other tests" used by both types of institutions: McGraw-Hill, California Achievement Test, Diagnostic Reading Test, Iowa Test of Basic Skills, ACT, and Stanford Achievement Test. The Brown-Holtzman Survey of Study Habits and Attitudes was the only study skills measure cited by these authors. Other study skills tests mentioned in the literature were the Study Skills Survey and the Survey of Reading/Study Efficiency.

However, Waters (1980) summarized the current critical opinion of reading experts on the use of standardized tests:

The complexity of the reading process makes reading experts loath to depend exclusively on the scores of a reading test to determine level of ability. Yet it seems to be the only way to survey the skills of large groups of incoming students. Those who use those scores must be aware of their limitations.

.... The results of a standardized survey test indicate only how the group tested behaves in a particular kind of reading situation when compared with the norms specified by the testers. Test scores do not tell us too much about how a student will perform in specific college reading situations.

Newman (1980) added several other cautions about the use of standardized tests: that they often yield inaccurate individual scores; that they are valid as post-tests only if the test measures what has been taught; that even as a group measure, the test data may be inaccurate for evaluation if there are socio-cultural, educational, or age differences between the norming group and the testing group.

And Pycszak (1975) reported the results of a number of studies which revealed that a substantial number of questions in standardized reading tests lack passage dependency. Thus, a student may have a better than chance opportunity to answer such items correctly without having to read the passages on which those items were supposedly based.

Most importantly, Tillman (1977) offered empirical comparisons among three widely used standardized tests at the college level: the Nelson-Denny Reading Test (N-DRT), the Diagnostic Reading Test (DRT), and the McGraw-Hill Basic Skills System Reading Test (MGHRT). The author did not offer a wholesale recommendation of any of the tests; instead he pointed out the weaknesses in reliability, validity, and in readability for each test. Nevertheless, he judged that the MGHRT's "substantial relationship with achievement and general ability is evidence that the author has been able to construct a specific and valid measure of reading ability" and that the MGHRT's technique of systematically increasing the difficulty of its comprehension passages "appears to be motivationally sound and fairest to slow examinees," in spite of the fact that readability measures indicate the "DRT is low, the MGHRT high, and the N-DRT approximately midway." And he concluded by stating, "Indications are that the tests can be useful in prediction, one of their basic purposes."

However, Farr (1968) concluded, after a careful analysis of several tests, that the rate sub-test of the Nelson-Denny Reading Test should not be used at all.

Newman (1980) cited two available publications that can be helpful in choosing standardized tests for the adult basic reader: Carsetti's Literacy: Problems and Solutions (1975) and Tests for Adult Basic Education Teachers by Vonderharr and others (1975).

Of course, once the appropriate standardized instrument has been administered, placement follows.

Waters (1980) included the following table as a guide to placement in a college program.

Initial Placement in College Programs.

<u>Level</u>	<u>Reading Test Cutoff Points</u>	<u>Student Characteristics and Skills Needed</u>	<u>College Program</u>
<u>Recommended Advanced</u>	50th percentile down to 25th or 35th percentile	Has all basic skills. Needs confidence for flexibility of rate. Ready for college materials. Needs sophisticated study skills.	Some take remedial writing. others freshman composition. twelve academic credits.
<u>Mandated Intermediate</u>	25th or 35th percentile down to 10th or 15th percentile	Needs vocabulary help. Finds college material difficult. needs pattern practices. Not ready for speed.	Some take remedial writing. others freshman composition. Some take remedial math. six to nine credits.
<u>Basic</u>	10th or 15th percentile and below	Poor decoding skills. lack of vocabulary. poor knowledge of affixes and roots. Poor comprehension of high school-level materials.	Most take basic remedial writing. noncredit math. no more than six academic credits.

As suggested by Sanders (1979) diagnosis of specific reading difficulties followed by prescriptive teaching must then occur if the program is to be successful.

(b) Diagnosis of Basic Students

For the Basic student especially those that fall below the 10th percentile as identified in the foregoing table, Waters (1980) recommended the support services of a clinic which offers the specialized diagnostic tests that assess perceptual acuity and screening tests that provide a highly specific profile of the student's reading problems. The following instruments were recommended for clinical assessment:

<u>Clinical Test</u>	<u>Function</u>
<u>Wepman Auditory Discrimination Test (1973)</u>)	assesses ability to discriminate auditory data
<u>Goldman - Fristoe - Woodcock Test of Auditory Discrimination (1970)</u>)	
)	
<u>Keystone Visual Survey Tests (1956)</u>	measures visual acuity at both normal and reading distances
<u>Bender Visual - Motor Gestalt Test (1946)</u>	assesses visual motor skills which, if poor, indicate vulnerability in the reading process

The clinic may very well administer other individual measures of basic reading strengths and weaknesses although classroom teachers could do so as well. Two adult versions of the Informal Reading Inventory (IRI) intended for basic skills are now available which indicate a student's independent, instructional, and frustration levels of reading, his learning capacity, as well as his strengths and weaknesses in decoding the written word: O'Donnell's Informal Reading Inventory (1975) and An Informal Reading Inventory for Use by Teachers of Adult Basic Education (1972). Goodman and Burke's The Reading Miscue Inventory (1972), which requires some training to administer, yields qualitative data about a reader's use of the three cueing systems of written language: the grapho-phonetic (sound-symbol), syntactic, and semantic. Because it requires a retelling after an oral reading, it helps to identify various kinds of readers, including those who are non-comprehending word-callers as well as those faltering decoders who nevertheless comprehend what they appear to be stumbling through.

A group measure of phonics decoding skills which the literature reported as suitable to adult populations, is the California Phonics Test (1963).

Informal diagnosis may also occur by teacher-prepared tests such as individually administered informal reading inventories constructed from actual course materials or group administered cloze tests constructed from potential instructional materials. In fact, Rosenkranz (1976) found that cloze tests using a 1/5 deletion ratio were acceptable for matching advanced ABE students with appropriate reading materials.

Newman (1980) recommended, especially for the Basic student, tactfully gathered background information regarding the prospective student's academic record, employment record, other experience, and personal data as well as an Informal Interest Inventory (I.I.I.) to be used for developing personalized reading lessons.

(c) Diagnosis of Intermediate and Advanced Students

Diagnosis with in-house instruments may also be useful for determining the reading problems of the Intermediate student who falls between the 10th to 35th percentiles on a standardized test.

Waters (1980) cited the Comprehensive Reading Program Competency Examination of College-Level Reading and Study Skills developed by Bowles and others (1976) as an example of an in-house test which closely approximates the actual reading experience in a typical college assignment. This test has the advantage of requiring students to read a chapter from an actual college text and to respond to vocabulary, comprehension and study skills questions based on the chapter. But it has the disadvantage of being unsuitable for testing thousands of incoming students since each exam must be scored individually. Furthermore, an examination of the Bowles test reveals a level of difficulty beyond the capabilities of a typical basic skills student and even of the lower levels of the category called developmental students. Instead, it seems suitable for the type of student who falls between the 25th and 50th percentiles on a standardized college reading test.

Maxwell (1979) suggested a way to administer the Brown-Holtzman Survey of Study Habits and Attitudes in order to distinguish between students who genuinely lack

*Basically the cloze technique assesses the suitability of a given text for prospective readers by asking those readers to supply words deleted from representative passages of that text at a rate of every fifth (or nth) word.

knowledge of effective study habits and attitudes and students who know but fail to apply them personally. She recommended asking academically unsuccessful students to respond to the Survey as they think "A" students would. Of course, those who respond "correctly" know but do not apply useful study skills, while those who respond "incorrectly" need help in developing the study skills for which they lack awareness.

(d) Diagnosis of Listening Skills

In the area of study skills, Roueche and Snow (1977) insisted that listening ability is a primary skill for success in the college classroom. For Basic students Clark and Woodcock (1967) developed Standardized Listening Passages which could be used to diagnose listening capacity. Of course, the Xerox Effective Listening Program, originally developed for white collar workers, contains a pre-test whose score can be used to assess a student's listening efficiency against the 24% efficiency of the average untrained adult listener.

(e) Diagnosis of Test Anxiety

Finally, Maxwell (1979) cited two instruments which are widely used to diagnose test anxiety in students: Alpert and Haber's Achievement Anxiety Questionnaire (1960), which helps to distinguish between facilitating and debilitating anxiety; and, the STABS (Suinn Test Anxiety Behavior Scale, 1969).

(f) Intellectual and Physiological Limitations

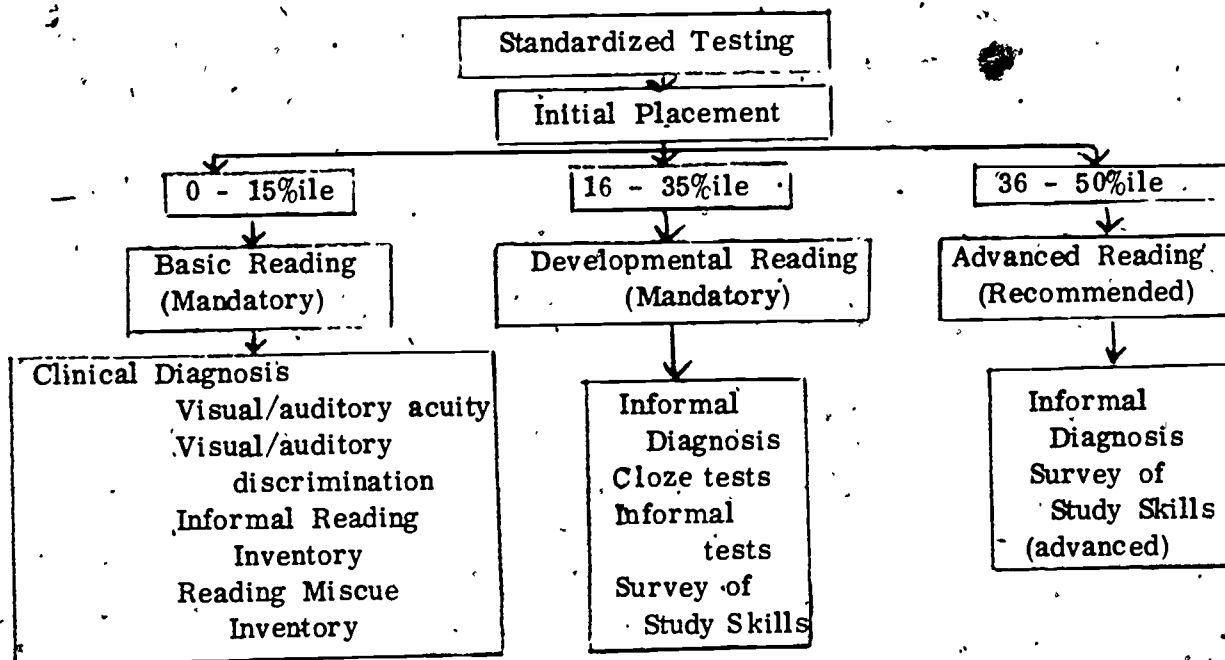
Two final studies are worth mentioning in the area of diagnosis/placement. Ford (1974) found that of all the factors he studied, I.Q. made the greatest contribution to the reading ability of the college freshmen he tested. In other words, as some people are limited or gifted in intelligence, they will also remain limited or potentially gifted in reading ability. The implication seems to be that an intelligence test administered during placement may save institutions, reading faculty, and students of low intelligence much frustration, cost, and time.

Worth considering along this line of thought is Frauenheim's follow-up study (1975) of 40 adult males who were diagnosed as dyslexic in childhood. Tests administered 10 years and 3 months after the initial diagnosis indicated that the subjects remained severely retarded in reading ability (mean G.E. score of 3.6).

Perhaps, all that the reading program ought to promise, therefore, is to help individuals achieve what their intelligence and/or physiology allows them to achieve and no more. In other words, some rare individuals cannot learn to read at all because the physiology of their brain prevents them from processing the written word. Others cannot learn to read materials at a sophisticated level of thought because their intelligence cannot cope with such thinking. Most readers, however, can improve their reading/study skills to some level beyond which they currently read. And they can improve by participating in a program where they have been approximately well placed and within which the nature of their current strengths and weaknesses has been carefully and realistically diagnosed:

(g) Summary - Placement/Diagnosis

In summary, the literature seems to suggest the following as a model for placement/diagnosis of large groups of arriving students for a comprehensive reading/study skills program:



And the following appear to be suggested by the literature as guidelines found in successful college reading/study programs for the placement and diagnosis of students.

Placement --

- 1.) Although standardized reading tests have severe limitations, such a test -- the Nelson-Denny Reading Test, for example -- is useful for predicting success for large groups of incoming freshmen.
- 2.) An intelligence test, administered during placement procedures, may help the institution, the faculty, and most importantly the student formulate realistic academic goals and programs.
- 3.) Generally, four levels of reading improvement should be available for the placement of students: special (handicapped and/or learning disabled), basic, developmental, and advanced.

Diagnosis --

- 1.) A diagnostic clinic should be maintained as a support service to severely handicapped readers. This clinic should make trained professionals available to offer specialized diagnostic testing from which a highly specific profile of the student's handicaps, limitations, and strengths may be developed.
- 2.) The successful program must involve students directly in the diagnosis, understanding, and choice of treatment for their reading problems.

3.) Informal diagnosis by means of commercially prepared or teacher prepared instruments designed especially for or suitable for adults is now possible. These may include: informal reading inventories, cloze tests, in-house tests of college-level reading and study skills, listening tests, and test anxiety scales.

4.) For all students, but most especially for the functionally illiterate, interest inventories and background data should be gathered by which to personalize instruction.

2. Guidelines for Program Design

Remedial and developmental reading/study skills instruction in college and community colleges is currently offered in a variety of program organizational designs:

1.) It may be offered as courses or minicourses. These may include distinct reading courses and/or study skills courses, though often reading and study skills are combined in one course. The courses may be taught out of the English Department or the Reading Department; as one variety of instruction provided in a Learning Assistance Center; or as part of a larger, more integrated Basic Studies Division. Commonly such courses extend for a semester, although sometimes they are offered as minicourses, especially in study skills, or as summer mini-semester preparatory courses.

2.) It may be offered in a wholly individualized, self-paced modularized and/or tutored mode within a Learning Center or in outreach sites.

3.) It may be offered as adjunct skills courses (Maxwell; 1979) which parallel regular classes (whose enrollments are high, in which many students have difficulty learning the content, and for which grading is tough). In this form the skills specialist cooperates with the content teacher, attends the content class, and conducts learning/skills sessions for students in the content class in sessions held after the regular class.

The question as to which of these organizational modes is most effective depends more upon one's philosophy of instruction than upon the conclusive results of any research in the area. In fact, the issue relates to the debate regarding which delivery system to use -- the traditional course lecture design at one extreme or the wholly individualized, programmed approach at the other, with all sorts of combinations and variations in between. Consequently, the question would best be dealt with in a later section of this review -- Instructional Methodology.

However, tabling for the time being this related issue does not mean that research has nothing at all to say about effective program design. It does.

(a) Design Features of Successful Programs

Fairbanks (1974), for example, found that reading programs which significantly affected student GPAs combined reading and study-skills instruction with counseling services, included more class time for practice than did unsuccessful programs, and were 40 hours or more in duration.

Maxwell (1979) cited the Teacher Mentor Counselor Program at Brooklyn College as a program which exemplifies Fairbanks' guidelines. This special services program had the following features:

- It gave interdisciplinary remediation in reading.
- It implemented counseling and tutorial services in the classroom.
- It stressed close communication among instructors, counselors, tutors, and remedial personnel, who met together three times weekly.
- Average contact with students was eleven hours per week.

In comparing this program to one in which the counselors, remedial specialists, and instructors did not interact, Obler and others (1977) found that the experimental group achieved higher GPAs and had a significantly higher rate of retention.

(b) Integrating Reading/Study Skills within a Division

Roueche and Snow (1977) presented results which favor incorporating the reading/study skills instruction within a total developmental program. They cited their research which showed that "programs organized by department or division accounted for the organizational pattern in 67 percent of both the senior and community colleges in the high success group," while developmental "programs which consisted of individual (often isolated) courses in departments spread across the campus accounted for the organizational pattern found in 33 percent of the senior colleges and 40 percent of the community colleges reporting low success with students."

Maxwell (1979) succinctly summarized the characteristics of effective programs in this way:

Although it is impossible to separate out the various components of an integrated program to determine which aspects of it make a difference, the combination of instruction, counseling, reading and study skills services, and tutoring within one program and the interaction of the various staff members seem to be the conditions necessary for a successful program.

Finally, and certainly most importantly, after critically reviewing the state of programs found in community colleges, Mione (1979) concluded "that two-year college reading programs lacked clear, broad, in-depth objectives." Two reasons for this major problem, which he identified as primary causes, were these:

- 1.) Lack of philosophy, i. e., they fail to view reading as "developmental" -- a process for which all students at all levels could benefit from instruction: remedial, developmental, advanced and even those needing more specialized work -- the handicapped and retarded.
- 2.) Lack of a broad definition of reading on which to base the program, i. e., instead of viewing reading as a "complex, active process involving such factors as purpose, attitude, personality, language skills, knowledge, intelligence, past experience, conceptual background, and neurological, physiological, and psychological concerns . . . [as] the active process [involving] thinking and reasoning and reacting" -- these ill designed programs viewed reading "as a simple mechanical process involving word recognition and pronunciation, and emphasizing eye-movement."

A non-technical description of the reading process (one of the most comprehensible that can be found) is given by Waters (1980) in the recent book Teaching Basic Skills in College. Because an understanding of the reading process is so crucial to the development of a sound college reading program, it is offered here in its entirety:

In the process of reading, the reader begins by looking at the words in a passage, expecting to grasp their meaning. When the reader knows the words and the sentence or passage fits into his prior knowledge and experience, he can comprehend the text. What the reader understands thus depends not only on what he sees on the printed page but also on the extent to which his experience contributes to his understanding. When this process happens smoothly, reading takes place, meaning is acquired, and the reader is unaware of the reading process as such. When the reading process is slowed down by uncertainty of any sort, when errors in meaning, ambiguities of meaning, or unknown words appear, reading is impaired and meaning is not clear. The loss in comprehension can be due either to the reader's lack of skills, to lack of experiential background, or to the inherent difficulty of the material.

In the usual reading of a passage, the reader uses all available decoding skills to give meaning to the print; some words are so familiar that the reader automatically recognizes them; these sight words are perceived as wholes. If the reader finds unfamiliar words, his pace of understanding is slowed and he summons a variety of decoding skills. He will use the context of the sentence as a clue to meaning and pronunciation. However, context may not help, as with the word *televinocular* in the sentence "He used the televinocular machine." Here the sentence provides no clues beyond the indication that whatever the word means, it describes some kind of machine. The reader can also use an alternate strategy, searching for pronunciation help and meaning in *tele*, *bi*, and *ocular*. If the reader has a knowledge of the common morph-

emes he can assign some meaning: *tele*=far, *bi*=two, and *ocular*=pertaining to the eye. Using these fragments and the context, a reader might be able to understand the word. If the reader does not recognize the morphemes, he may try to pronounce the word, sound by sound, hoping the blending of phonemes will echo a word already in his oral or listening vocabulary. If none of these strategies helps, then either the reader skips over the word, losing some degree of meaning, or he interrupts his reading to consult a dictionary.

As each word is decoded, the reader simultaneously undertakes the more abstract task of assigning a precise meaning to it. Here vocabulary skills are needed. Each subject area has its own specific terminology; for example, chemistry has its *catalysts* and *reagents*, biology has its *mitochondria* and *endoplasmic reticulum*. These terms are precise and must be learned specifically for the subject area in question. Other more generally known words acquire specific meanings when they become part of the lexicon of a particular subject area, for example, the term *work* in physics. However, a reader need not know every word in a passage if the grammar and semantic cues in the rest of the sentence provide sufficient information for general understanding. For example, in the sentence "He tried to clarify the passage, but his explanation only served to obfuscate it further," the reader can guess the meaning of the word *obfuscate* if he knows the word *clarify* and the implications of the structure *but . . . only*. The reader infers that the meaning of *obfuscate* is opposite to that of *clarify*.

As the reader assigns meanings to words in a passage, he sees relationships among phrases, notes specific details, abstracts main ideas, and makes generalizations. Comprehension is complete only with this total understanding of the passage. When a reader's comprehension is poor, his problem is often, if not a lack of decoding skills and vocabulary knowledge, then a lack of experiential background: the reader does not have a ready body of ideas and concepts to relate to the reading material at hand. This analysis of the reading process begins to explain the phenomenon of students who claim to have read their assignments, yet cannot remember or discuss the material. Reading the same material two or three times does not bring them greater comprehension because, although they read individual words correctly, they do not grasp the complete meaning of the passage.

(c) Summary - Program Design

Thus, whether the reading/study skills instruction is delivered in a wholly individualized fashion or in a group fashion or as a combined mode with large group/small group/individual learning, several design features seem important for success:

- 1.) Reading/study skills instruction should be just one component of a well defined, integrated total program of remedial services to the student.
- 2.) A well designed program can be achieved only if it arises from 1) an attitude that reading is developmental, i. e., a literate process needing improvement by all students, and from 2) a definition of reading as a complex, active, reasoning-thinking-reacting process which involves all the unique cognitive, intellectual, linguistic, psychological, and physiological factors that comprise an individual person.
- 3.) Counseling and tutoring must occur within the reading/study skills class.
- 4.) The reading and study skills instructor must interact with other team members on a regular basis throughout the program regarding the student's problems, remedies, and achievements.
- 5.) Reading/study skills instruction and/or practice should last for forty hours or more.
- 6.) The reading/study skills program should provide much practice time for the student to develop his/her skills.

3. Guidelines Related to Program Content

The decision as to which content is appropriate to the student is simply another issue in the overall debate about the best way to teach reading to students at any level and of any age group. For adults, as for students of other age groups, the question of content concerns two sub-issues: 1) the subject matter of instructional materials which the student will use and 2) the specific skills which the student will need to learn in order to become a proficient and functional reader.

(a) Subjects of Materials

It is generally agreed among professionals in the field of adult reading that materials chosen for instruction to adults be adult in interest. Locating or developing materials for the Adult Basic Education (ABE) student -- i. e., one who is identified in the literature as reading at or below the grade equivalent level of eighth grade -- has generally been a special problem since most published materials at these levels have been designed for elementary-age children. Nevertheless, Manning (1978) found that with the use of "everyday" materials, adult females being paid by CETA to attend a 15-week training program improved in both vocabulary and comprehension on TABE (Tests of Adult Basic Education). And Hutchinson (1978) demonstrated that by using

materials emphasizing the expressed interests of a group of functionally illiterate adults, the experimental group could thereafter recall information and interpret word meaning from context significantly better on the Adult Basic Learning Examination than a control group who did not use such materials. Newton (1977), drawing upon the theories of andragogy (the science of adult education) derived from the research of Kidd and Knowles, concluded: "I believe that literacy improvement which provides job related, verbal skills development emerges ipso facto as the most appropriate literacy development approach." And Maxwell (1979) argued: "Reading tasks that allow them to achieve an answer to some problem or to undertake some activity often provide greater motivation for poor readers than does reading fiction." Nevertheless, Maxwell claimed, most college reading courses unfortunately are based on easy articles from magazines and newspapers on the premise that to increase rate, a student must practice on simple material. She insisted, therefore, that reading specialists should teach students how to read more difficult, challenging works, including mathematics and science materials.

Moreover, Brown and Newman (1967), in researching the attitudes of adult illiterates toward reading materials, discovered these interests to include:

- Family
- Self-improvement
- Jobs
- Health
- Science) high achievers
- Mathematics)

Finally, Ahrendt (1975) emphasized throughout his discussion in Community College Reading Programs:

The teaching of transfer to the content [classes he is taking] is important to the . . . student because he needs to experience success both in the reading center and in his class work. He must see that what he is doing in the reading center has a definite relationship to what he is doing in the classroom. . . . Many students drop out of reading improvement programs because they cannot see any relationship between what they do in the reading center and what they do in the classroom.

(b) Reading Skills in College Programs

With regard to the skills needed, Moe and others (1980) researched the specific literacy requirements (reading, writing, listening, speaking, and mathematics) necessary for success in ten skilled or semi-skilled occupations in the Greater Lafayette, Indiana, area. They produced from their research ten reports, one for each occupation, identifying the literacy demands both on the job and in a vocational training program leading to the job, as well as instructional recommendations for each. The following, reproduced from their reports, indicates these requirements:

SUMMARY OF OCCUPATIONAL LITERACY REQUIREMENTS

	On The Job		Training Program	
	Reading	Mathematics	Reading	Mathematics
Account Clerk	College to college graduate level	addition, subtraction, multiplication, division, decimals, fractions, business machines	11th grade to college graduate	addition, subtraction, multiplication, division, fractions, decimals, algebra
Automotive Mechanic	9th to college graduate level	basic processes, decimals, fractions, measurement	9th to college graduate level	basic processes, decimals, fractions, measurement
Draftsman	10th grade to college graduate	basic processes, through geometry, algebra, trigonometry	9th grade to college level	basic processes, through geometry, algebra, trigonometry
Electrician	college to college graduate level	basic processes, through geometry, algebra, trigonometry	10th grade to college graduate level	basic processes, through geometry, algebra, trigonometry
Heating and Air conditioning Mechanic	10th grade to college graduate level	basic processes, decimals, fractions, measurement, algebra	11th grade to college graduate level	basic processes, fractions, decimals, measurement
Industrial Maintenance Mechanic	10th grade to college graduate level	basic processes through trigonometry	10th grade to college graduate level	basic processes, decimals, fractions, measurement
Licensed Practical Nurse	10th grade to college level	addition, and subtraction--more necessary to dispense medication	12th grade to college graduate level	addition and subtraction
Machine Tool Operator	9th to college graduate	basic processes, decimals, measurement	9th grade to college level	basic processes, decimals, measurement
Secretary	College to college graduate level	basic processes, decimals, fractions, business machines	10th grade to college level	basic processes, decimals, business machines
Welder	few materials--reading of single word information required	basic processes, fractions, decimals, measurement	8th grade to college graduate level	basic processes, fractions, decimals, measurement, algebra

As this summary reveals, the range of reading requirements for these occupations on the job extends (with the exception of those for a welder) from the 9th grade level to the college graduate level. In the training programs leading to a job, the requirements begin at the 8th grade level and extend to the college graduate level. Of course, a background of experience in an occupation and/or a strong interest in that job frequently help a worker to compensate for deficits in his/her reading skill repertoire.

In a private consultation given to the team members involved in the Basic Skills Project (for which this review of the literature is being presented), John Roueche indicated that to bring the project students up to two grade levels of the expected reading level would be to prepare them adequately for the reading they would do in their training. Generally, he advised that students who came close to the 10th grade level on the Nelson-Denny test would have a strong chance of surviving in subsequent educational training.

Smarr (1979) completed a readability study of textbooks used during the first trimester in five occupational training programs at Macomb County Community College in Warren, Michigan. These five were studied in order to determine the Expected Reading Grade Level for CETA clients who might be enrolled in these programs:

<u>PROGRAM</u>	<u>EXPECTED READING LEVEL</u>
Automotive Mechanic	11.4
Climate Control	12.6
Drafting (one course only)	15.3
Quality Control	13.9
Copy Prep and Type Setting	NONE

An examination of the ranges of readability, however, showed that Automotive Mechanic students could encounter passages as high as 17.8 grade level; Climate Control students, as high as 18.3 grade level; Drafting students, as high as 19.1 grade level; and Quality Control students, as high as 17.1 grade level.

Conclusive research which reports the positive effect of teaching specific skills in order to develop more proficient readers is minimal. One of the few conclusions which research has demonstrated about the reading skills to be included in college programs is that reading programs which emphasized the skills of determining main idea and of distinguishing fact from opinion (Sanders, 1979; Fairbanks, 1973) had a positive effect on students' grade point averages.

Nevertheless, Bloom and others (1971) have developed an extensive taxonomy of objectives for reading programs, which often have become fractionated into student levels in the hands of so-called reading experts. Maxwell (1979), however, cited this fractioning of Bloom's taxonomy as one of five "harmful myths about the reading process" which often lead to poor instructional strategies and poor materials. In fact, argued Maxwell, because of such parceling out of objectives, poor readers are often deprived of being taught to read and think critically until they demonstrate that they can function at a high school level. Two other of Maxwell's myths, and the harm which

they lead to, are worth mentioning here. One myth -- that reading skills are an absolute hierarchy with clearly defined steps, from decoding to critical reading -- often prompts well-meaning college reading teachers to force poor adult readers to start at the beginning again. Another related myth involves the misuse of diagnostic-prescriptive teaching. The scene is a familiar one: College students are tested and found to be deficient in some basic skill (phonics or word attack, for instance) and are then prescribed intensive training to remedy their weakness -- in spite of the fact that these dull and meaningless exercises are the very exercises associated with their failure to learn to read adequately in elementary school! Maxwell urged instead that a program which analyzes a student's strengths and interests and then capitalizes upon them is a more educationally productive program.

Waters 1980 defined two theoretical models as general approaches to organizing the reading programs at the college level:

The hierarchy of skills model (see Figure 1) invites a systematic sequential teaching of skills until mastery is reached. The information processing model encourages a holistic methodology where emphasis is placed on processing meaning and the necessary skills are taught in passing (see Figure 2).

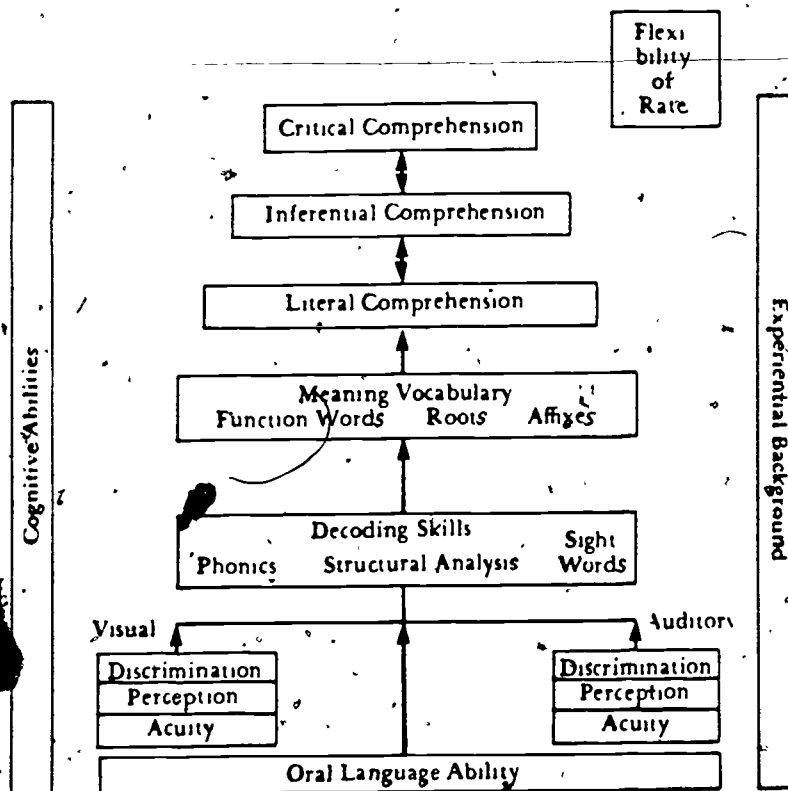


Figure 1. Hierarchy of Skills Model

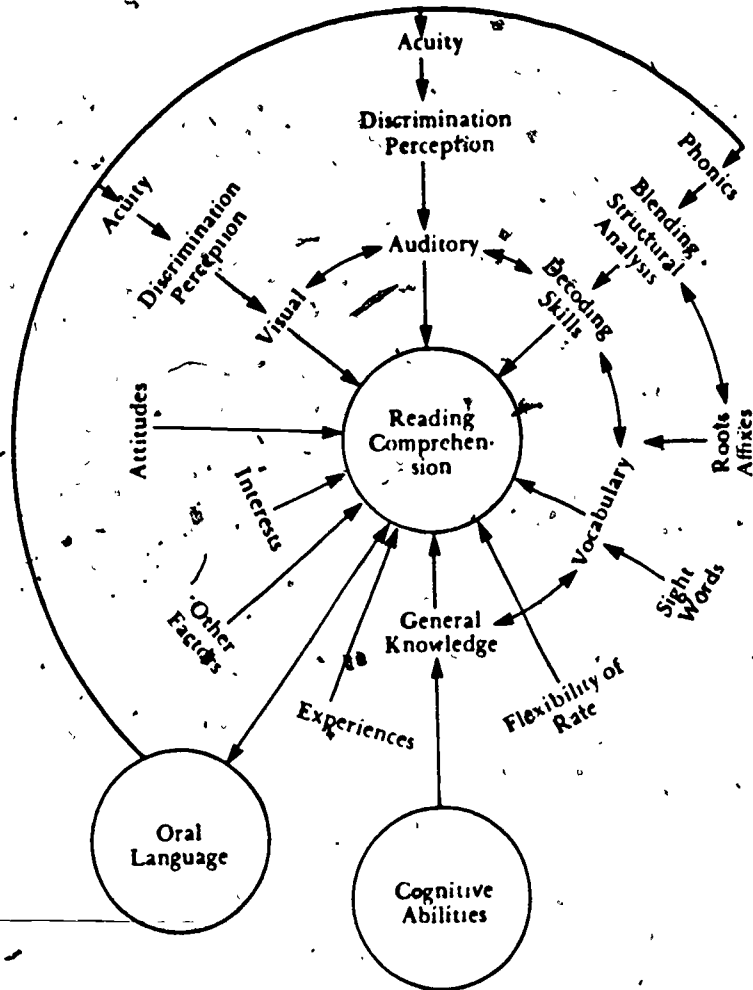


Figure 2. Holistic Model

Then, unfortunately, Waters (1980) submitted to the tendency to do exactly what Maxwell (1979) decried as a "harmful myth": Waters recommended the hierarchical model for students in the basic level reading course (those who fall below the 15th percentile on a standardized test). Her argument was that although some students "will be bored by the class and the "students may not be able to adapt from isolated drill practice to actual reading materials," such an approach provides for "systematic" learning and the development of "rule-governed behavior."

If, as Goodman (1970) argued, the primary goal of reading is meaning (comprehension) and if there is no reading occurring when meaning is ignored, the holistic skills model seems to be most important especially for the very students for whom Waters did not recommend it, since it keeps meaning as the central focus at all times.

Nevertheless, an examination of both models yields as common denominators the skills required in the reading process which readers must develop to the greatest of their potential if they are to become proficient readers: experiential and cognitive background, decoding skills, vocabulary skills, linguistic ability, and comprehension on all levels.

One additional study is worth mentioning with regard to the reading skills to be taught in a college reading program. Whimbey and others (1980) described a successful pre-college summer program which they conducted at Xavier University of Louisiana, New Orleans, called Project SOAR (Stress On Analytical Reasoning). This project, by using "cognitive process instruction, a method of teaching comprehension and analytical skills that emphasizes the connection between the two," was able to demonstrate that students showed statistically significant gains beyond the .001 p level in comprehension and vocabulary on the Nelson-Denny Reading Test and in scores on the Preliminary Scholastic Aptitude Test. The authors described in detail the method they used so that the study can be replicated by others seeking such achievement.

(c) Study Skills in a Reading Program

As indicated earlier in this review, study skills instruction is offered to college students either as a separate course or minicourses, as part of a reading course, as seminars, or on an individualized, programmed basis. Regardless of the delivery technique, however, the skills typically treated (Maxwell, 1979) are the following:

- Time management
- Taking lecture notes (and sometimes improving listening skills)
- Textbook-study methods (usually SQ3R or SQ4R)
- Preparing for and taking examinations
- Improving memory and concentration

Other units may be included, depending upon the length and/or delivery of the program:

- Research-paper writing
- Career planning
- Adapting to academic regulations
- Improving personal and social adjustment

Regarding listening, Blanton and Smith (1975) found in their review of the literature that what evidence that is available indicates a correlation between listening and reading comprehension. Canfield (1976, in Roueche and Snow, 1979) demonstrated, with a representative community college sample as his normative group, that of all the abilities a student needs in order to pass college courses, "one of the primary skills . . . is listening ability." In fact, Roueche and Snow (1979) recommended that a success-oriented program should begin with the development of student listening and notetaking skills -- even before the teaching of reading comprehension. Supporting this judgement somewhat was the report of Nichols and Stephens (1964) that extensive tests at the University of Minnesota indicated that immediately after the average person has listened to a talk, he remembers only, about 50 percent of what he has heard -- no matter how carefully he thought he was listening.

A number of studies have been done to determine the efficacy of notetaking from lectures. Summers and others (1978) included a review of studies done in this area, between 1975 and 1976, a sampling of the more significant of which follow. Fisher and Harris (1974) found that subjects do better when they are allowed to encode their lecture notes in the way that they prefer. Aiken, Thomas, and Shennum (1975)

discovered that students who took notes during a brief interval while the lecture was stopped, recalled significantly more than students who took notes while the lecture was in progress or no notes at all. Annis and Davis (1975) reported that personally encoding the lecture provides the best retention. They also found that there was superior recall for subjects who reviewed their notes, while the technique of mentally reviewing a lecture without taking notes was "singularly unsuccessful." And Palmatier and Bennett (1974) observed that more successful students seemed to be better note-takers.

Maxwell (1979) cited two study formulas which have been developed by study skills specialists to improve listening/notetaking skills:

5 R's (Pauk 1974a)

- Record (meaningful facts and ideas)
- Reduce (by summarizing, clarifying, reinforcing)
- Recite
- Reflect (about meaningful categories)
- Review

WRECK (Fred Duffelmeyer, Drake University)

- Wonder (i.e., approach with a curious mind)
- Record (as much as possible without repetition or regression)
- Edit (i.e., condense in a separate notebook)
- Correlate (with text notes)
- Keep and review (periodically)

Maxwell (1979) also reported that the most widely taught textbook reading method is the SQ3R method, developed by Frank Robinson (1946/1970) to which a 4th R had been added by Smith (1961):

SQ4R

- Survey
- Question
- Read
- Recite
- "Rite" (Smith's R)
- Review

Maxwell indicated that this formula has been criticized by skills experts because it has not been systematically researched as a total method, although there is research to support each of the steps. Nevertheless, in spite of Maxwell's claim, at least two studies do show the positive effect of teaching the SQ3R method. Diggs (1972) found that with remedial college freshmen, analysis of test scores on the Diagnostic and Davis Reading Tests indicated that the SQ3R method was effective for students

needing overall reading improvement in rate, comprehension, and vocabulary. They also found that students who needed improvement in particular areas of reading seemed to benefit from a mechanized (machine) approach, provided that they experienced the SQ3R method first. Similarly, Hayward and others (1977) noted that teaching the SQ3R method which included regular practice on regular texts produced a slight effect in the study performance of non-traditional students in a study management program at Pennsylvania State University.

Waters (1980) recommended that students who learn to analyze the content and structure of materials find that their comprehension of these materials increases: Waters pointed out that different subject materials contain distinctive writing patterns:

Social Sciences --

- 1.) Major heading supported by details, illustrations, examples
- 2.) Extended definition (an entire chapter) and specialized definitions
- 3.) Comparisons
- 4.) Cause-effect
- 5.) Complicated arguments which include reasons, generalizations, along with their important exceptions
- 6.) Mixtures of fact and opinion

Natural Sciences --

- 1.) Classification and listing
- 2.) Process-description
- 3.) Factual-statement pattern which combines facts, interpretations, and opinions
- 4.) Problem-solution
- 5.) Experiment instruction (purpose, equipment, steps, results)
- 6.) Combination of the above

Humanities --

- 1.) Imaginative literature:
 - a. Elements of fiction (character, setting, etc.)
 - b. Questions on the literal, critical, and affective levels
- 2.) Critical literature about the humanities - uses same patterns as the social sciences.

(d) Summary - Content

In summary, the following appear to be general guidelines which can be derived from the literature for the selection of content for college reading and study skills courses:

Reading

- 1.) The subject matter of materials used should be adult in interest: family, self-improvement, health, and most especially job-related; additionally, science and mathematics subjects appear suitable to higher achievers.
- 2.) At all levels of reading instruction, content from the actual courses which the student is/will be pursuing seems necessary to include in order to minimize attrition from the reading course and to effect transfer to content courses.
- 3.) Inasmuch as job-related materials for skilled and semi-skilled occupations -- both in the training programs and in the actual jobs themselves -- appear to range from the 8th grade readability equivalent to the college graduate level, students need practice with actual materials so that they can be brought to within two grade levels of the expected readability level (about the 10th grade -- for minimum survival).
- 4.) The skills presented must not be fractionated and segregated according to hierarchical levels of instruction. Students at all levels need to refine their flexibility of reading rate, vocabulary (and perhaps word analysis) skills, comprehension skills (including analytical critical reading), and study skills -- the difference being merely one of degree, not kind.
- 5.) Reading instruction, with any skill practice, needs always to be meaning-centered.
- 6.) An emphasis on developing analytical reasoning skills in printed material appears to significantly affect reading ability as measured by standardized reading tests.

Study Skills

- 1.) Since study skills courses seem to have a positive effect on GPA and attrition for all levels of students, it seems logical to include instruction in those areas which traditionally are found in such courses:
 - Time management
 - Listening and notetaking
 - Textbook study methods
 - Preparing for and taking examinations
 - Improving memory and concentration

- 2.) Listening and notetaking skills seem to be the logical place to begin reading/study skills instruction since they are the first used survival skills which students need, but also the very skills which are typically not well developed by average students or underachievers.
- 3.) Notetaking from lectures seems to be most effective when --
 - done in the student's preferred style than by a prescribed style,
 - done at pause intervals during the lecture than continuously while the lecture is occurring,
 - followed by a review of the lecture notes.
- 4.) Some evidence now exists to substantiate the claim that the SQ4R method of textbook study (Survey, Question, Read, Recite, "Rite," Review) -- as a total method -- does produce results academically. (Until now research has proved only the effectiveness of each step, but not of the total method.)
- 5.) Since students seem to improve their comprehension of textbooks by learning to analyze the distinctive writing patterns found in them, a reading/study skills course would do well to include practice in these specific patterns. (See the foregoing section for a complete listing of these patterns.)

4. Guidelines Related to Instructional Methodology

As Ahrendt (1975) pointed out, "The literature abounds in various program descriptions and methodology for teaching practically every reading skill. The variables of teacher, student, materials, and physical plant all must enter into the selection of teaching methods used." Furthermore, the techniques chosen typically depend upon the philosophy of reading instruction which the instructor has. Waters (1980) stated the point this way: "Greater understanding of the reading process will help the teacher to choose those methodologies most appropriate to the needs of individual students." This section of the review of the literature, therefore, will not attempt to provide a comprehensive analysis of the various instructional methods which are being used to teach reading to adults. (An excellent reference examining and evaluating selected practices for improving reading at every level is the book Reading Strategies and Practices: Guide for Improving Instruction by Tierney and others, 1980.)

Instead, this review will limit itself to several concerns and recent findings in the debate of how best to teach reading at the college or community college level. As noted earlier, few specific guidelines are available from research since research reports generally provide inadequate descriptions of the specific treatments which have resulted in significant gains on prepost measures.

(a) Individualization vs. Group Instruction

One issue in the area of teaching reading to adults concerns the question of individualization. Roueche and Mink (1976) reported results of a three-year study at the University of Texas, which they claimed, "substantiated [that]

the most appropriate system for helping [high-risk] students who enter a community college . . . is an individual learner-oriented instructional system." Specifically, they found that significant shifts toward an internal locus of control occurred more often in students receiving individualized instruction than in students who were taught by more traditional approaches. However, Manzo, Lorton, and Condon (1975) completed a study of the learning preferences of ABE students which led them to conclude that although these students "preferred to learn by two of our most directive and efficient means, lecture and tutoring," in ABE programs throughout the nation, students are "left to languish in a sea of 'individually prescribed, independent study' materials." The investigators went on to conclude: "The idea may not be incorrect, but the match is all wrong."

More specifically, in the area of reading instruction, Roussos (1973) investigated the effectiveness of the Adult Learning Center (ALC) approach in teaching adults language arts skills, as compared to the traditional classroom method. Two separate studies done by this researcher demonstrated no significant differences between the two methods in the areas of reading vocabulary, comprehension, total reading and spelling. More recently, Kurth (1979) found that "the teaching of reading comprehension and vocabulary skills to college-age remedial readers was more effective when done in small group sessions of ten students than in individual tutoring sessions" because the former allowed for group discussion and interaction. And Olsen and Swiss (1976) pointed out that no empirical evidence exists to substantiate the positive effect of individualized instruction in college reading programs over a more traditional method even though 87% of colleges surveyed had individualized instruction and 40% of community colleges considered individualized instruction to be the strongest aspect of their reading programs.

All of this is not to say that individualized instruction in college reading programs does not produce positive effects. It may -- for certain kinds of students. For example, Drummond, (1975) studied thirty freshmen at Bangor Community College in Maine who were enrolled in a prescriptive, wholly individualized reading program consisting of self-instructional texts, reading kits, controlled readers, and skimming and scanning machines. Using the Rotter Internal-External Scale, this researcher identified two types of learners among the subjects:

Internal -- a person who believes that reinforcement is contingent upon his own behavior.

External -- a person who believes reinforcement is contingent upon chance, fate, or other people.

Drummond's study found that the external-oriented students achieved more in reading improvement than the internal-oriented students when both were instructed by the same individualized approach. Henderson (1976), attempting to determine whether one form of individualized instruction (personalized) was better than another (prescriptive), found that both groups made significant gains in reading rate, vocabulary, and comprehension on the Nelson-Denny Reading Test, while the

prescriptive subjects tended to gain more in comprehension (.56 p) than the personalized subjects. (It should be noted, however, that the subjects in this study had pre-test grade equivalents of 9.3 in comprehension but 12.5 in vocabulary.)

Thus, individualized instruction may be effective for teaching reading to certain kinds of adults, but as it stands now, it is merely one alternative, not necessarily the best treatment available.

At the opposite extreme, of course, is the large-group, lecture method. At least one study contained in the literature arouses concern over the efficacy of this technique. Hutchinson (1974) reported that an experimental ABE program with lessons divided into teaching, practice, and application was significantly more effective than large group instruction utilizing commercial materials over a 15-week period on both achievement and attendance measures, but not on vocabulary or oral reading. Thus, it would seem that effective reading instruction to high-risk students must go beyond just lecture.

Instead, as noted in the Hutchinson study and by other authors and researchers cited earlier in this review of the literature (Ahrendt, 1975; Fairbanks, 1973), effective instruction in reading at an adult level must include much class time each day to provide for individual practice and application.

(b) Machines

Another issue related to the area of instructional methodology for teaching reading to adults concerns the use of machines. Mione (1977) pointed out in his critical review that one of the first orientations which community college reading programs had was a machine approach which consisted of tachistoscopes, reading accelerators and sets of films, and pacers. Quoting Charles Calvin, Mione explained:

Research necessary to establish reading programs came originally from the classrooms and laboratories of educational and experimental psychologists who emphasized the mechanics and perceptual aspects of reading. Programs stressing the mechanical and perceptual aspects of reading then proliferated.

However, even as far back as 1968, only 9.13% of the community colleges surveyed as part of a nationwide study indicated that they were geared entirely towards mechanical devices to improve reading. Indicating the weaknesses of such an approach -- the most fundamental of which is the failure of the machine orientation to view reading as the complex process which it is -- Mione concluded that about all that machines achieve in a community college reading program is some degree of motivation for the students.

Supporting this rather negative view of machines to teach reading were the opinions of Roueche and Snow (1977):

Perhaps an instructional truism . . . is that materials alone won't "carry the show."

Often "gadgetry," if not in proper maintenance or used without experience, merely hinders the teaching-learning process.

. . . Skillful human resources far surpass physical resources when it comes to assisting high-risk students in the development of self-confidence, persistence, and academic skills.

Research seems to validate these opinions:

Specifically, a study by Francis, Collins, and Cassell (1973), found not only that no advantage was gained by an experimental group who used an EDL Controlled Reader (CR) one hour per week, but that the control group receiving one hour per week of classroom instruction improved reading speed 30% as opposed to a drop of 4.7% for the experimental group (the CR group). And more generally, Mione claimed that "Research on eye-movement training suggests that 1) there is little reason to believe that irregular eye-movement causes poor reading and that 2) mechanical training to eliminate regressions and to decrease number and length of fixations may not contribute significantly to improved reading."

Nevertheless, research does support the use of audio tapes for certain kinds of individualized reading instruction. Bain (1974), for example, found that no significant difference by treatment occurred between 60 experimental students who simultaneously listened and read (aud-read) SRA materials and 60 control students who read without tapes. However, Thomas (1975) discovered that the lower the initial reading level of the student, the more effective was the dual mode of aud-reading for the student. In fact, in one study, for marginally literate men at the 5th grade equivalent of reading ability, aud-reading produced the best scores on post-test measures. (Clark and Woodcock, 1967).

Besides accelerators and tapes, of course, reading instructional hardware has now witnessed the introduction of Computer Assisted Instruction into the field. Yet, according to Cook (1977), Pennsylvania State University reported no differences in the progress of students receiving CAI by comparison to students using programmed materials. Cook also cited the conclusions reached by the Raleigh Adult Learning Center at North Carolina State University, that even with simplified systems (IBM 1500), CAI is --

- more expensive than conventional systems,
- intimidating to many students,
- yet no more effective than conventional systems.

(c) Analytical/Critical Reasoning

Whimbey and others (1980) reported significant gains beyond .0001 p in vocabulary and comprehension on prepost comparisons of scores on the Nelson-Denny Reading Test for students enrolled in a 5-week summer program at Xavier University

in New Orleans, called Project SOAR. The authors concluded that

These dramatic gains in reading comprehension in a program devoted to teaching analytical reasoning support the position (taken by Thorndike, Farr, and others) of viewing critical reading as dependent on analytical reasoning skills and justify orienting a reading program accordingly.

A detailed description of the two main components of Project SOAR -- permitting replication of the treatments -- was provided in two articles:

Component 1: Piagetian - based laboratory exercises from 9 a. m. to noon (Lincoln, C. Eric. "From Concrete to Abstract Reasoning: SOAR Plots the Course." Change, Report on Teaching #6, vol. 10 (August, 1978), p p. 25-29. Published by the Council on Learning, NBW Tower, New Rochelle, New York 10801.)

Component 2: Cognitive process instruction (problem-solving/comprehension classes) and vocabulary building from 1 to 3 p. m. (Whimbey, Arthur and others. "Teaching Critical Reading and Analytical Reasoning in Project SOAR." Journal of Reading, vol. 24 (October, 1980) p p. 5-10.)

Because of the careful descriptions provided in these two sources, the reader of this review is advised to refer to them directly. Any attempt to summarize the specific instructional methods of this program here would go beyond the purposes of this review.

(d) Miscellaneous Guidelines Related to Instructional Methods

Several additional studies point the direction to the development of other guidelines for reading instruction.

Regarding the timing and spacing of instruction, two studies are worth mentioning. Tinkle (1973) found that with functionally illiterate male prisoners, massed instruction, i. e., an intensive schedule of four hours of instruction per day for five days, was significantly more effective than spaced instruction (20 one-hour sessions) as a technique for improving vocabulary retention and grade level gain. Furthermore, though it ignored the causative factors affecting achievement, a study by Gwaltney and Ribohson (1973) found that a 16-week reading improvement course was more effective for students enrolled in a 12:30 p. m. section than for students enrolled in an 8:30 a. m. section. This study seems to suggest that time of day may have some relationship to the effectiveness of a reading course.

Very little in the literature of college/adult reading research deals with the issue of requiring vs. recommending reading improvement instruction of students who have been identified as needing it. Fairbanks (1974), in fact, determined that successful reading improvement programs tended to be voluntary, rather than required. And Agin (1973) noted relatively small differences in personal background, interpersonal values, and study habits and attitudes between students enrolled involuntarily in a reading class and those who enrolled voluntarily. Nevertheless, Rousehe and Snow (1977) argued: "... for some high-risk students in community colleges, mandatory remedial courses may be related to student success." Yet even these authors explain that if a

particular student resists in spite of the most persuasive arguments as to why he should participate in a developmental studies program, he should not be forced to enroll.

Related to the issue of making reading courses mandatory or not is the question of giving college credit. Sanders (1979) recommended giving some form of credit recognition for remedial or developmental college reading improvement courses. But no definite research to date has been found to establish the merits of credit bearing courses or programs over non-credit courses or programs in reading at a college level.

The question of grading seems to have a more definite answer. Bergman (1978), for example, suggested that some recent literature indicates that students who are required to take remedial courses in reading and study skills may be more highly motivated and will perform better academically if they receive traditional letter grades rather than a pass or fail.

(e) Summary of Guidelines Related to Instructional Methodology

An examination of the state of the art regarding the most effective instructional methods to use in college/adult reading programs yields several guidelines:

- 1.) The selection of instructional methods must be based upon an understanding of the nature of the reading process and of the strengths and weaknesses of the reader who is attempting to perfect that process to the limits of his potential.
- 2.) Generally, methods that capitalize upon strengths are more productive than those that remediate weaknesses.
- 3.) Although a variety of methods has been used to improve the reading ability of adults, they are not all equally effective. (An excellent, up-to-date reference for evaluating current methodologies is Tierney's Reading Strategies and Practices: A Guide for Improving Instruction.)
- 4.) Though individualized reading instruction is typically praised and recommended among educators, research proves no distinct advantage of this method over more traditional methods. Both forms have been demonstrated to be successful.
- 5.) The effectiveness of individualized instruction seems to depend on the nature of the learner. Externally-oriented subjects seem to profit more from such instruction than do internally-oriented subjects.
- 6.) Among the machinery which can be used to enhance reading instruction, only audio-tapes have been proved to have some advantage over programs that use no machines at all: some functionally illiterate adults seem to profit from aud-reading (following in the text while listening to an oral reading of that text.)
- 7.) Orienting a reading program around cognitive process instruction in analytical reasoning skills (like that found in Project SOAR at Xavier University in Louisiana) seems to produce positive gains in reading test scores of subjects taught these critical reading skills.

8.) For remedial/developmental reading students, a number of variables seem to affect instructional methodologies in a positive manner:

- providing massed (rather than spaced) instruction
- scheduling afternoon (rather than morning) reading classes
- allowing voluntary (rather than required) enrollment in a reading course
- giving credit (rather than no-credit) for the course
- assigning traditional grades (rather than P or F grades)

VI. TEACHING THE READING/STUDY SKILLS COURSES

The reading/study skills component of the Basic Skills Project was based on a psycholinguistic view of the reading process and on information-processing theories of the learning process. Essentially what this means is that the program was designed in all aspects around the basic tenet that the primary goal of reading is the acquisition of meaning, and that in the process of reconstructing an author's meaning, the strategies that the reader uses will be productive only if they are consistent with the way human beings think and learn.

What follows is a specific description of this program according to several broad categories:

- Goals and Objectives of the Course
- Motivation During Orientation
- Communication of Course Goals, Procedures-etc.
- Diagnosis
- Self-Diagnosis
- Content of the Course
- Course Materials
- Methodology
- Organization of Course
- Grading
- Coordination of Reading/Study Skills with Other Courses
- Summary of Literature-based Features of the Course

A. Goals and Objectives of the Course

The major educational goal of the reading/study skills component of the Basic Skills Project was to help the project students develop survival reading and study techniques for the occupational training courses which they intended to pursue in succeeding semesters. On the authority of Dr. John Rouéche, external consultant to this project, this survival could be predicted if the students achieved to within two grade levels (or about the 10th grade equivalent) on the Nelson-Denny Reading Test used as a post measure of the course.

Specifically, it was assumed that the student would be able to achieve that grade equivalent level by accomplishing the following objectives:

- 1.) The student will have achieved at least a 70% grade on the following instructional posttests and progress tests:
 - Memory Skills Unit
 - Dictionary Skills Unit
 - Unit in the Use of a Dictionary
 - Pronunciation Guide

- Word Analysis Skills Unit
- Unit in the Use of Vocabulary
Context Clues
- Unit in Solving Verbal Reasoning
Problems
- Unit in Solving Analogy Problems
- Unit in Solving Problems of Trends
and Patterns
- Study-Reading Unit Progress Tests (3)

2.) The student will have achieved at least a 50% average on a listening skills post-test (for which he took no lecture notes).

3.) The student will have achieved at least a 70% average for progress tests based upon lecture-notetaking.

4.) The student will have completed at least 15 Guided Reader lessons with a score of 70% or better comprehension and will have moved up at least two levels from his initial level.

5.) The student will have maintained at least 85% attendance.

Additionally, a number of related goals were intended by the course. It was certainly a major aim to develop in the students confidence in themselves as learners in an academic setting, for it was assumed that they would not survive without that fundamental belief. And certainly, inasmuch as they were all set upon studying technical, scientifically-related subjects in their future training, the reading-study skills component hoped to broaden their experiential and conceptual background in these areas by exposing the students to practice in typical writings from their future training programs.

The reading/study skills component had several research goals as well. Generally, this component intended to field test a number of variables suggested by foregoing research studies as having positive effects on the reading improvement of students. The field test, in this case, was to have been limited to CETA-supported subjects who scored between the 7th and 9th grade equivalent levels on the Nelson-Denny Reading Test, form C.

Specifically, these research goals consisted of the following:

- 1.) To field test the holding capabilities of a reading/study skills program from which direct application to occupational training courses would not occur until after the skills program ended.
- 2.) To field test the efficacy of a 128-hour reading/study skills program consisting of 16 weeks of instruction at 8 hours per week (4 hours class and 4 hours individualized practice).
- 3.) To field test an instructional format consisting of lecture/demonstration followed by small group/individualized practice.

4.) To field test the use of tutor-technicians as monitors/helpers who would provide instantaneous human feedback during individualized practice.

5.) To field test "cognitive process" instruction for analytical/critical reading/ thinking skills as a technique of raising standardized reading test scores.

6.) To field test the effects of a rather comprehensive program of reading/study skills that focused on meaning throughout skills instruction in the following areas:

- listening
- memory techniques
- dictionary skills
- vocabulary improvement by word analysis and the use of context clues
- comprehension improvement by the analysis of expository patterns common to scientific/technical writing
- SQ4R method of textbook study (including mapping, outlining, and underlining)
- test taking techniques
- rate flexibility techniques and practice

7.) To field test student reactions to SSR (sustained silent reading), as a one-hour component of an eight-hour weekly program of reading/study skills instruction.

B. Motivation During Orientation

During the orientation activities scheduled for the first day of the Basic Skills Program a major attempt was made to motivate the students to extend as much effort as possible toward improving their literacy skills. To that end, one of the earliest presentations of the day involved discussing the results of two research studies which applied to their future. First, the students received a summary of the occupational literacy requirements for ten common skilled and semi-skilled occupations (Moe and others, 1979), many of which the students had already expressed some interest in pursuing. Much emphasis was placed upon the fact that if they were to prepare themselves adequately for the training programs which they wanted to undertake in the succeeding semesters, as this evidence suggested, they would have to work especially hard to develop their reading skills much beyond their present levels (6.0 to 9.5 grade equivalents). In order to provide local support to the argument, the students were also presented with readability data collected for the textbooks used in several CETA training programs offered at this college.

Of course, such a presentation as this might have led to discouragement rather than the motivation which was intended. Consequently, the whole issue was handled as positively and delicately as possible. In fact, encouragement and promise highlighted the presentation. And the students were left with the idea that they, like other students in the teaching team's past experiences, could and would succeed not only during the present semester but in the training programs which followed. But they were advised that this success could be achieved only by a tremendous team effort -- by the faculty and tutors on the one hand and by them on the other.

The first-day activities ended with a similar effort. Mr. Leonard Rinke, a local Fisher Body executive chosen because of his relentless drive to rise from an office mail clerk at General Motors to Divisional Manager in Purchasing, recounted for the students in a very informal manner his personal struggles to perfect his own literacy skills. Noteworthy in his presentation were remarks about his most recent efforts to improve his reading and letter writing abilities, both of which he reported were necessary to his success and survival in industry.

Finally, near the close of the day, the Reading/Study Skills instructor attempted to follow the advice given by Roueche (1977) -- that one sure way to impress upon the students that the instructor is personally very interested in them as individuals is to memorize their names. Thus, near the close of the day, as the students passed through a line to obtain library cards, the reading/study skills instructor called out from memory the correct names and spellings of those names for each student who filed before him. One by one, the students exclaimed, "How did you learn my name so fast!"

These motivational efforts of the first-day activities, of course, were just the first in a series of semester-long attempts made to persuade the students that the team were personally and individually concerned with their efforts, their progress, their difficulties and their ultimate successes in the Basic Skills Program, in their future training, and in their lives.

C. Communication of Course Goals, Procedures, Requirements, and Grading

In a private memorandum to the team Dr. Martha Maxwell, a prominent professional in the field who was chosen as one of the two external consultants to the project, stressed: "A good, clear well-written syllabus explaining the program to the students is absolutely necessary." Such a syllabus was prepared by the reading/study skills instructor but was never delivered to the hands of the students. The reason, quite simply, was that a number of internal consultants reacted negatively to the syllabus on the grounds that it would seem too overwhelming, rigorous, demanding, and threatening to the students. Instead, these colleagues recommended covering the topics informally, using a no-nonsense approach when the course was outlined and throughout the semester. They argued that a manner characterized by "getting right down to business" would achieve the same purposes as a formal document, without the intimidation which might result from the latter. Consequently, a less formal summary of the promises of the reading/study skills course was distributed to the students:

RDG 292 - Reading and Study Skills

The reading/study skills course will help you learn --

Reading Skills:

- how to adjust your rate of reading to fit your purpose for reading or the difficulty of the material.
- how to speed up your reading when it is good to do so.
- how to understand more of what you read.
- how to concentrate when you read.
- how to remember more of what you read.
- how to increase your vocabulary.

Study Skills:

- how to solve logical problems.
- how to study a textbook chapter.
- how to underline efficiently.
- how to take notes from reading and listening.
- how to memorize.
- how to take different kinds of tests.

There ensued a discussion of the assignments, activities, uses of the course folder, and grading system, as well as an announcement of the procedures to be followed for the weekly sustained silent reading (SSR) period. (These topics will be discussed fully in appropriate succeeding sections of this part of the report.)

Diagnosis Throughout the Course and Nelson-Denny Reading Test (C) Pretest Scores

As explained in the general program description found elsewhere in this report (see p.p. 30 - 31), twenty-three of the project students had been through a two-week period of testing at the Assessment Center of one of the two local Prime Sponsors which participated in this field test. These students and the two students who came from the second local Prime Sponsor all arrived at the college with Nelson-Denny Reading Test scores in rate, vocabulary, comprehension, and total test.

As the following table of subscores on the Nelson-Denny Reading Test (C) reveals, the population of students participating in the field test came to the program with a mean word-per-minute (wpm) rate of 171.8 on the rate sub-test, a vocabulary grade equivalent mean of 9.7, and a comprehension grade equivalent mean of 7.3. The total score grade equivalent mean was 8.1.

Although there were vast differences both in rate (SD-25.5) and in vocabulary (SD-1.6) the group was more homogeneous in comprehension (SD-.9) and in total score (SD-.9).

N = 17		NELSON-DENNY READING TEST (C)			
	WPM	VOCAB	COMPREH.	TOTAL	
MEAN	171.8	9.7	7.3	8.1	
S'D	25.5	1.6	.9	.9	
RANGE	143-230	7.9-12.7	6.0-8.9	6.0-9.5	
MEDIAN	161	9.2	7.5	8.3	

The data here are limited to those students who remained with the program through the last day, thereby taking the post-test as well. Originally, a rather comprehensive set of additional tests were planned for the first week in order to diagnose specific strengths and weaknesses in word attack skills, study skills, listening skills, and analytical reasoning skills, to name a few. (Appendix I) The rationale for including all these tests was the research finding that effective programs included much diagnosis for which the students were given the results and by which the instructor and student cooperatively planned the appropriate instruction.

However, because both external consultants to the project expressed concern that the program design included perhaps too much testing, the original plans were amended to include fewer tests and to rely instead upon informal diagnosis throughout the semester. It was felt that the trained observations of a reading instructor would yield as much diagnosis as would be necessary.

During the first week, therefore, only the following were given -- as much to diagnose specific beginning levels as to begin instruction in these areas:

- WASI (Whimbey Analytical Skills Inventory)
- Xerox Effective Listening pretest
- Pretests in dictionary skills and dictionary pronunciation guide skills

The results of these pretests and of the Nelson-Denny Test were discussed with the students and instruction was under way.

The greatest majority of units of instruction in the program began with such pretests, included periodic progress tests, and concluded with posttests. In each case, the results of these assessment instruments were shared with the students so that they would at all times understand what they needed to learn as they moved through the program.

D. Self-Diagnosis

One additional instrument was developed and administered during the first week activities in order to engage the students further in self-diagnosis. This was a Reading Inventory, consisting of 36 statements requiring a self evaluation of specific reading/study habits, attitudes, and skills. (See Appendix H) for an examination of the complete instrument.) Students were asked to place an "X" next to statements like the following which applied to them at that time:

- "2. I do not like to read, but I know that I have to improve my reading skills."
- "5. I have difficulty pronouncing most words in anything I read."
- "6. The only words I sometimes have trouble pronouncing are big names or long new words."
- "15. I can understand things I read for pleasure, but I have difficulty understanding assigned material."
- "26. When I read an assigned chapter, I start with the first word and keep going till I have to stop or until I finish."
- "35. I dislike using controlled readers."

The results of this inventory provided the basis for much of the informal diagnosis which occurred during the course and helped to provide the topics of spontaneous chats held with the students about their perceived reading problems.

In most cases, the students were surprisingly accurate in their self-diagnosis. On item 24, for example, fourteen students indicated, "I have a weak vocabulary." Using the Nelson-Denny vocabulary subtest score below 10.9 grade as an indicator of weak vocabulary, sixteen students should probably have marked "X" next to item 24. Eleven did. Thus, for that item the student responses were 69% accurate.

Some group results of this inventory reveal the outstanding self-perceptions of the class as a whole (Table 8). Most acknowledged that they were slow readers (87%), but they generally did not feel they had incapacitating word attack problems, just problems with "big names or long new words" (87%). As might have been expected, many students admitted not being able to remember what they had read (70%), that they had a weakness of vocabulary (61%) but did not use context clues as a vocabulary attack method (52%), and that they were not conscious of an author's thought plan (57%). A surprising number were candid enough to confess to not reading much (61%) and to dislike reading while realizing a need to improve their reading skills (43%). And many were too embarrassed about their reading ability to read out loud in class (57%).

Regarding study-reading, most admitted difficulty understanding assigned texts but not pleasure-reading materials (83%). They identified as their primary study-reading method that of starting with the first word and going on from there (74%), with no stopping to summarize after reading sections of a study text (70%) and little use of study questions (61%). Understandably, the majority acknowledged difficulty concentrating on assigned text material (52%). Furthermore, almost half of the students indicated that they did not survey before reading (48%) and more acknowledged not varying their reading rate according to their purposes or the difficulty of the text (65%).

With regard to the use of hardware, specifically the EDL Controlled Reader, 35% (8) stated they had used such a device but only 4% (2) expressed a dislike for using such an apparatus.

TABLE 8

SELF PERCEPTIONS OF READING/STUDY ATTITUDES, HABITS, SKILLS (as indicated on "Reading Inventory")				
N- 23				
RANK	FREQUENCY of STUDENT RESPONSES		ITEM # on READING INVENTORY	ATTITUDE, HABIT, or SKILL
	No.	%		
1	20	87%	#12	are slow readers
	20	87%	#16	have word attack problem limited to big names or long new words
2	19	83%	#15	have difficulty understanding assigned text
3	17	74%	#26	read study chapter from first word to end
4	16	70%	#10	read everything word by word
	16	70%	#19	cannot remember after reading
	16	70%	#30	do not stop to summarize text
5	15	65%	# 9	have spelling difficulty
	15	65%	#11	have no flexibility of rate
6	14	61%	# 4	do not read much
	14	61%	#24	have weak vocabulary
	14	61%	#31	do not use study questions
7	13	57%	# 8	are embarrassed to engage in oral reading
	13	57%	#17	are unaware of author's thought plan
	13	57%	#22	have inability to understand many words
8	13	57%	#23	fail to use context clues
	12	52%	# 7	have inability to use dictionary pronunciation guide
	12	52%	#21	have concentration problem-text
9	11	48%	#25	fail to preview first
10	10	43%	# 2	dislike reading but realize need to improve
	10	43%	#14	have difficulty understanding while reading
	10	43%	#20	have concentration problem generally
11	11	39%	#32	have inability to find books, etc. in library
	11	39%	#33	fail to generate questions while reading
12	8	35%	#34	formerly used controlled reading machine
13	7	30%	# 5	have word attack problems
	7	30%	#16	miss main idea
	7	30%	#18	are not conscious of paragraphs
	7	30%	#28	do take study notes
14	6	26%	#14	have difficulty understanding most readings
	5	22%	# 3	read frequently
16	4	17%	#13	find all reading difficulty
	4	17%	#29	take too many study notes
17	2	9%	#35	do not like controlled reading machines
18	1	4%	# 1	find difficulty reading and speaking because English is second language.

E. Content of the Course

The reading/study skills course contained demonstrations, explanations, individual practice, and application activities in the following areas:

Problem Solving:

Verbal Reasoning
Analogies
Trends and Patterns

Vocabulary:

Dictionary Uses
Pronunciation
Word Analysis (Prefixes, Roots, Suffixes)
Determining Meaning from Context

Comprehension and Study:

Learning Theory
General vs. Specific Ideas
Patterns of Development:
Definition
Examples
Classification and Listing
Contrast
Cause - Effect

Locating Main Ideas

SQR⁴ Method of Study:

Survey
Question
Read
Recite
"Rite" (Outlining, Underlining, Cornell's System,
Abbreviating, Mapping)
Review

Test-taking Techniques

Listening:

Distinguishing Main Ideas from Supporting Ideas
Coping with Distractions
Comprehending One-, Two-, and Three-part Statements
Taking Notes on Lectures

Rate:

Skimming for General Topics and Statements
Chunking
Skimming for Notes
Rapid Reading and Comprehension

F. Course Materials by Content

In order to make the reading/study skills component as relevant as possible to the students' future occupational training needs, materials were chosen which could be demonstrated to have such future applications, some indirectly but most directly. Although instructor-prepared materials were used periodically to provide some of the instruction, most practice activities involved the use of commercially produced textbooks and programs.

Following is a listing of the primary commercial materials used in the program according to the skills practiced (The bibliography for this segment of the report contains the full publishing data.):

TABLE 9

Reading/Study Skills Materials

SKILL	COMMERCIAL MATERIAL USED
<p>LISTENING -</p> <ul style="list-style-type: none"> - General listening comprehension skills. - Lecture-notetaking skills 	<p>Xerox <u>Effective Listening</u></p> <p>Langan's <u>Reading and Study Skills</u></p>
<p>MEMORY SKILLS -</p> <ul style="list-style-type: none"> - General skills - Study memory techniques 	<p>Lucas and Lorrayne's <u>The Memory Book</u></p> <p>Langan's <u>Reading and Study Skills</u></p>
<p>ANALYTICAL/CRITICAL THINKING SKILLS -</p> <ul style="list-style-type: none"> - Solving verbal reasoning problems - Solving analogy problems - Solving problems of trends and patterns 	<p>Whimbey and Lochhead's <u>Problem Solving and Comprehension</u></p>
<p>VOCABULARY/STUDY SKILLS -</p> <ul style="list-style-type: none"> - Dictionary skills - Pronunciation Guide skills - Word analysis skills - Context skills - Technical vocabulary skills 	<p>Jennings and others' <u>Consider Your Words</u></p> <p><u>American Heritage Dictionary</u></p> <p>Eisenberg's <u>Reading Technical Books</u></p>

SKILL	COMMERCIAL MATERIAL USED
<p>COMPREHENSION/STUDY SKILLS -</p> <ul style="list-style-type: none"> - Comprehension of technical patterns of exposition - SQ4R (including underlining, notetaking, and mapping) - Test-taking techniques <p>COMPREHENSION/RATE -</p> <ul style="list-style-type: none"> - General comprehension/rate practice with articles related to Career and Consumer Awareness, Contemporary Issues, Science, Humanities, and Literature - Flexibility of rate 	<p>Eisenberg's <u>Reading Technical Books</u></p> <p>Langan's <u>Reading and Study Skills</u></p> <p>Instructional/Communications Technology's <u>Guided Reading Program</u></p> <p>Langan's <u>Reading and Study Skills</u></p> <p>Eisenberg's <u>Reading Technical Books</u></p>

G. Methodology

1. Use of Large Group, Small Group, and Individualized Practice with Tutoring for Different Lessons

According to an original, tentative plan the reading/study skills course was to have been equally divided between class and laboratory. The intent was to provide for the students the benefits of both large group and small group involvement during class time and individualized practice during the laboratory period. Accordingly, of the eight weekly hours assigned to the course (8 a.m.-10 a.m.: M-T-W-TH), one hour daily was scheduled as class time (8 a.m.-9 a.m.) and the second hour (9 a.m.-10 a.m.) was scheduled as lab time.

In actual practice, as the program evolved, this schedule was not held to rigidly. Individual practice was often mixed into times set aside for class and small group instruction often became the order for the day for the times originally set aside as lab. Lecture/demonstration rarely lasted longer than fifteen minutes at a time.

Several reasons lay behind this alteration of the original plan. Perhaps, one of the chief reasons was the advice of Drs. John Roueche and Martha Maxwell, external consultants to the Project, that the laboratory time needed to be highly structured. Their explanation was that students like these benefited most from a very tight organization wherein they would know exactly what they were to accomplish, how they were to perform the task, and the time within which they were to complete it. Secondly, it became apparent early in the program that not only did the students have very poor listening skills but they could not hold their attention to an extensive lecture or demonstration: about 10 or 15 minutes of explanation was all that they could tolerate. Finally, for some types of lessons, the presence of one or both tutor-technicians in the classroom made it feasible for the instruction to move rapidly from demonstration/explanation to small group and individualized practice, alternating back and forth between these modes as needed during a given time period.

Thus, some skills were handled mostly in an individualized way. These were units in structural word analysis skills, rate/comprehension practice with the Guided Reader Program, and Sustained Silent Reading.

The listening skills were treated as group-guided, individual-practice activities. That is, the instructor demonstrated a technique of improving a listening skill, played an audio-taped statement, guided the class by gestures (during the early practices only) to attend to an important idea that was stated, and provided time after the oral statement for individuals to record the ideas heard. Thereafter, the class compared answers and discussed reasons why some important ideas may have been missed and ways to improve listening and/or notetaking. The program continued this way throughout the semester.

The remaining lessons were handled in a mixed way. That is, a typical period would begin with a brief explanation/demonstration of a lesson and move immediately to small group and/or individualized practice. During the practice, the instructor and the tutors moved up and down the rows, stopping to monitor the application and help individual students as needed. This over-the-shoulder assistance provided immediate human feedback to the students, the kind they often do not obtain in set ups where individualized practice means working in programmed materials and/or with hardware. (In such programs, immediate feedback is often identified as the primary benefit of this type of practice. But the problem is that the feedback consisting of printed or mechanical information as to what the right answer should have been often leaves the student bewildered and frustrated -- he simply does not understand why he was wrong, nor does he perceive how to rectify his procedures to achieve that answer.) By means of this mixed mode, however, when one or several students "got stuck" or "confused," the instructor or tutors would give clues without giving answers. If the class at large demonstrated misunderstanding, the instructor would stop the individualized practice, lead a discussion about the problem, and/or re-explain or demonstrate the skill. This group exchange of ideas not only provided reassurance that others were having similar problems with the work but it also provided the occasion for hearing alternative techniques for solving a problem. Once the problem was clarified, the session moved back to individual practice and so on. During every practice session, the instructor, as chief helper and diagnostician, made it a point to look over the shoulder of every student in the class.

An interaction between the tutors and instructor achieved total monitoring of individual student needs, strengths, and weaknesses. Of course, if a small group of students evinced similar difficulties, the instructor or tutor would sit down with the group to help as needed. One additional benefit of this mixed mode of instruction was that it allowed for extending the lesson for two consecutive periods (with a break halfway between) without any loss of attention by the students. Moreover, it afforded much individual practice -- a factor cited in the research literature as contributing to successful developmental reading programs. Admittedly, of course, this mixed mode would be most difficult to manage where a traditional set up occurs, i. e., with one instructor and twenty-five students, but no tutors available, or with tutors available only after the class period.

The mixed mode of instruction described above became the primary delivery technique for the following lessons:

Problem Solving (not for verbal reasoning problems, but for analogies and problems of trends and patterns)

Dictionary Practice

Vocabulary Practice

Comprehension Skill Practice

Study-reading Practice

2. Use of Overhead Projector

For all large group demonstrations given in the reading/study skills components transparencies were made of the published and/or developed materials so that they could be projected onto a large screen in the classroom. In this way, the students, who always had before them their individual copies of the text or materials, could easily locate passages being analyzed, discussed, underlined or marked up with marginal notations, circles, boxes or the like. Often the instructor would lead a discussion about a particular skill--for example, locating the technical definition of a particular term--and guide the students to inductive conclusions about some efficient ways to identify the term and definition as well as to mark the text, take notes, or develop vocabulary study cards for the definition. By referring to the screen, the students could create their own models for practice, contribute to the development of those models, correct their prior attempts to apply a skill, or be guided to alternative techniques of study/comprehension.

If, during individual practice, major problems occurred, and practice was interrupted for re-explanation, the projected text on the screen was used as the focus of group attention. Instructor, tutors, and students alike -- in a group learning situation -- walked up to the screen and/or projector to argue a point, defend a position, or suggest alternate attacks on the problem. So much involvement transpired that shyness rarely occurred to hinder all the activity that pervaded the atmosphere. Everyone was busy learning and time was so often overlooked that it would take the next instructor's presence in the room to call attention to the fact that class should have been over for the day, minutes ago.

The primary benefit of this use of the overhead projector, of course, was that it removed the obstacle of the students' listening handicap from reading/study skills instruction. Rather than have to listen to oral directions, students were able to rely upon visual images for guidance. Moreover, the oral message was constantly being reinforced by visual clues.

3. Individualized Practice with the Guided Reader Program

For one hour each week, students used Guided Reader Study Guides, films and/or tapes and film strip projectors in order to develop rate and comprehension skills. This component of the total program was introduced primarily because of the motivational benefit referred to in the literature as being one of the primary advantages of such hardware. Additionally, this period in the Programmed Learning Center provided much needed relief from the confines of the self-contained classroom where much of the class activities occurred (although at various other times during the week students moved into adjacent seminar rooms for smaller tutoring groups with the instructor and/or tutors).

All but two students used the film/study guide procedure outlined for the program. (These two expressed dislike for guided reading machines on a Reading Inventory described earlier in this report.) It should be noted that, unlike the EDL Controlled Reader Program, Instructional/Communication Technology's Guided Reader Program involves the film/projector pacing system for approximately only half the reading lesson (Part A). The other part, Part B, must be read without the aid of any mechanical pacing. In fact, only several minutes of the total lesson involves the use of the projector. Consequently, students who participated in this phase of the program practiced rate/comprehension skills first artificially (with machine) and then naturally. For this procedure, students were placed in study guides which matched their individual independent reading levels and their interests (consumer affairs, career awareness, science).

An alternative method involved the use of aud-reading. That is, the students, this time placed in study guides close to their instructional reading levels, listened to audio tape recordings of a lesson while reading silently along in the study guide.

For both alternatives, movement up in rate or in study guide level occurred if a student demonstrated at least a 70% comprehension score on two or three consecutive attempts. The comprehension checks, of course, were corrected by the students themselves.

However, during this entire activity instructor and tutors alike moved around the study carrels in order to monitor progress, spot check a lesson, discuss a problem, or clarify a particular point. Always were the students closely monitored during the procedure, not at all as prison guards over inmates, just as helpers with learning. (No resistance to the program of any kind occurred during the entire semester.)

4. Sustained Silent Reading

For one hour each week, the last of the scheduled activities for the reading/study skills class for the week consisted of a period set aside for uninterrupted, sustained silent reading. This was to be a free reading period during which time students could read anything they wanted. Two stipulations were made to preserve the purity of the experience: that no class assignments of any kind could be done during this time and that the material chosen for the activity had to consist primarily of written text.

The students were advised to bring materials from home if they wished. However, several resources were also made available to them either right in the classroom or in the building where the program was housed. In the classroom, a pamphlet rack was established containing many free publications of consumer interest obtained from the Government Printing Office. A portable cart containing books, picked from the college library was also placed in the classroom so that during the week students could choose a title which met their interests. These books mainly dealt with a variety of hobbies. At the outset, some students selected materials from these resources in the room; after a short time, though, they were largely ignored. The readers in the group typically used home materials for this activity. The greatest majority, the non-readers, headed straight for the magazine and newspaper racks found in the lobby outside the classroom. Since the room used for instruction was located in the Learning Media Center, which houses the college library as well as the Programmed Learning Center, the students were at all times immersed in an atmosphere of books and magazines and pamphlets. And the instructor for the course not only recommended titles which might be of interest to the students but he, along with the tutors, modelled the behavior he was seeking, by engaging in free reading himself during the period.

In spite of these efforts, some students, those who no doubt had expressed a dislike for reading at the outset of the course, remained reluctant but compliant participants in the activity, occasionally avoiding it altogether if they could. Most, however, welcomed the opportunity and vocally expressed their dissatisfaction the few times when the sustained silent reading period had to be used for other purposes.

As it happened, near the end of the semester, the reluctant free readers turned out to be those needing additional help in certain areas of the coursework. Consequently, they were permitted to make up tests or to receive tutoring help during the free reading period. Surprisingly, this alternative use of the time did not adversely affect the free reading practices of the students who had been using or who had come to use the period for the recreational reading for which it was intended.

Conversation during this period was typically discouraged, except when it consisted of briefly sharing experiences or information gained from reading. Students soon learned that the free reading period was a privilege and respected the rights of other students and of the instructor to engage in a pleasurable experience. A few were reminded from time to time that they were interrupting the experience -- surprisingly by other students in the class as often if not more than by the instructor and tutors.

5. Selected Specific Instructional Methods Used

It would be difficult if not cumbersome to an already extensive report to present here a careful, detailed description of every specific instructional method used during the reading/study skills course. Earlier parts of this section have already suggested techniques used in a general way for some of the skills taught (comprehension/study skills, listening, guided reading practice, etc.). One important point deserves reiteration, however, and that is that in every case the reading/study component emphasized meaning as the primary goal of the reading-thinking process and based its instruction principally on a psycholinguistic model of reading as well as on learning theory derived from information-processing theorists.

During the first week, in fact, the course consisted of learning games which aimed to establish the bases for instruction. These were group-participatory activities involving word and number processing games, cloze activities, memory activities, perception games, inductive and deductive thinking activities and the like -- all designed to correct misconceptions about what the reading process is and what it is not, how a person learns, how he is limited in the ways he can process incoming information, why certain kinds of study activities are productive while others are counterproductive to the way people naturally think, and why people (because of the limitations of their conceptual and experiential backgrounds) cannot expect 100% comprehension for everything they attempt to read. These principles, derived inductively from the activities engaged in, became the repeated rationale for later lessons throughout the course.

One example may illustrate the procedure. In order to develop the concept of the limitations of short-term memory, through which, after sensory input, all information enters the human brain, the instructor used a memory game. The following number was projected on the screen for fifteen seconds with instructions that it had to be memorized, not copied:

149219455799445551212

The students were then asked to write the number from memory. Of course, none could. The discussion which ensued led to the conclusion that the short-term memory is limited to 7 ± 2 discrete pieces of new information and no more; consequently, the projected number, treated as 21 separate digits, was well beyond the information processing capacity of most people. The discussion, however, also led to several other fruitful conclusions when some students were able to repeat some of the number in groups:

1492 1945 57 etc.

By chunking the 21 numbers into five sets, and by associating each set with some already stored information, the students soon learned that one way to process

more information is to chunk the bits into meaningful wholes, associating the unknown to the known, as the following illustrates:

1492	1945	57	9944 (100ths)	555-1212
Columbus's	End of	Heinz	Ivory	Long Distance
Discovery	WWII		Snow	Information

These principles were then applied to reading: syllable-by-syllable vs. idea-by-idea reading; surveying an article for the 5, 6, 7, 8, or 9 important ideas first; using topic headings as associative memory pegs; etc. Once such foundations were laid, the motivation for succeeding lessons became simply a reminder of the earlier established theories of learning and reading.

Once an instructor begins to understand the learning process and the reading process, treats his students as adults able and willing to learn and understand, respects their individuality, and bases his instruction, methods and materials on these understandings, the process of learning and teaching becomes an enjoyable and satisfying experience for all involved.

One other instructional method deserves some explanation here, and that is "cognitive process instruction" derived from Whimbey and Lochhead in their book Problem Solving and Comprehension (which was used in this program). Originally, these authors used this type of instruction in a summer program, called Project SOAR, for pre-freshmen entering Xavier University (New Orleans, LA) with an interest in natural, health, or mathematical sciences. In the Basic Skills Project, of course, the CETA students had occupational interests related to the natural sciences and health.

As described by the authors, "cognitive process instruction" which involves thinking aloud, is explained in the following way (Whimbey and Lochhead, 1979, p. 23-31):

If you are using this book in a class your teacher may ask you to work in pairs as you solve the problems. One partner should read and think aloud, while the other partner listens. On subsequent problems the partners should change roles, taking turns as problem solver and listener.

The ability to analyze complex material and solve problems is a skill—just like any other skill such as the ability to play golf or the ability to drive an automobile. However, there is a peculiar difficulty involved in teaching analytical skill. Generally there are two phases to teaching a skill. First the skill is demonstrated to the student. Then he is guided and corrected as he practices it. For example, golf is taught by showing the beginner how to grasp the club, how to place his feet, how to move his arms and his body as he swings. The beginner can watch a golf pro—he can even watch a slow motion film of the pro in action—and in this way can learn the pro's technique. Furthermore, the pro can observe the beginner as he practices, he can point out his flaws, and he can show him how to improve.

In contrast to playing golf, analyzing complex material is an activity which is generally done inside your head. This makes it somewhat difficult for a teacher to teach and for a learner to learn. In other words, a beginner

cannot observe how an expert thinks and solves problems. And the expert has trouble demonstrating his technique to a beginning student. There is one way to reduce this difficulty—have people think aloud while they solve problems. If both students and experts vocalize their thoughts as they work through complex ideas and relationships, the steps that they take are open to view and their activities can be observed and communicated.

In this book, the procedure of asking people to think aloud while they solve problems is applied in two ways. Experienced problem solvers (a group of graduate students and professors) were asked to think aloud as they solved the problems that are presented in the book. Their responses were tape-recorded, and then the steps they took in solving a problem were summarized and written out. These summaries are presented under the heading Problem Solution. In other words, the problem solution which follows each problem is a summary of steps taken by an experienced problem solver as he or she worked the problem aloud.

The second application of the procedure consists in asking you, the reader, to think aloud as you work each of the problems. In doing this, you make your thinking visible to other people so that they can observe your attack on a problem. Thus, they can learn the techniques you use; they can help point out any errors you make, and they can compare the steps you take with the steps listed in the problem solution. Furthermore, you will find that by thinking aloud you will be able to look at your own thinking activities more carefully. You will be able to see exactly what strategies you use, and what difficulties you have in solving a problem.

Research has shown that this is an effective way for students to improve their problem-solving skills: work together, think aloud, learn from each other, and read how experienced problem solvers approached the same problems.

The partner who listens plays an important role in the learning process. He should not sit back inattentively with his mind elsewhere. Instead, he should concentrate on two functions. He should, 1. continually check accuracy, and 2. demand constant vocalization.

Although the authors recommend this technique for all four types of problems contained in their book -- verbal reasoning, analogies, trends and patterns, and math word problems, the Basic Skills Project practiced it, totally as recommended, only for the first type of problem, the verbal reasoning type -- and then only for about half of the problems attempted:

Cross out the letter after the letter in the word pardon which is in the same position in the word as it is in the alphabet.

The reason is that while working in pairs, instead of alternating the roles of solver and listener, the project students cooperatively solved the problems, often with the more able thinker of the two carrying the major effort. Then, too, they seemed more interested in getting the right answer than in analyzing the method of thinking through to the solutions. Consequently, instead of practicing the peer-pairings, an alternative method was used -- working in small groups with one person working out loud while others played the role of listener. But because even this technique deprived students generally of all the individual practice they could have benefited from, the large-group, small-group, individualized method, described earlier in this section as the "mixed mode," was used for the analogy problems and the problems of trends and patterns. (The Mathematics Component of the Basic Skills Project -- towards the end of the semester -- used the math word problems section of the book.)

The effects of this instruction, however, as will be seen in the "findings" segment of this report, seemed to be similar to those achieved in research done by the authors of "cognitive process instruction": statistically significant gains were made by the project students in posttest standardized reading test scores similar to those made by the Project SOAR students of the original experiment.

A final word should be given to avoid misunderstanding with regard to the term "skills" as it is used throughout this segment of the report. The instruction given and the practices undertaken by the students did not typify the "skills" approach to instruction which the term usually suggests. Instead, all lessons involved the use of whole, "natural" language -- the kind that is typically used in technical or leisure reading materials found in the world outside the classroom. Even the vocabulary exercises, which often are presented in the traditional skills approach as bits and pieces of language, were not in this program delivered in this way. Terms and definitions were identified in whole paragraphs and word analysis practices consisted of vocabulary presented in whole sentences. Thus, in every instance, students encountered whole sentences, paragraphs, articles, essays, and chapters -- not sounds and syllables and words and phrases.

The term "skills," therefore, simply provided a focus for activities. Skills were developed incidentally, not by direct drill. An illustration may serve to clarify the point. Although it was apparent by some student responses on the self-diagnosis inventory of reading administered early in the course that a slight word attack (phonics) problem may have characterized the reading habits of those students, word attack strategies were never treated in isolation. Instruction in these areas was handled spontaneously as the need arose. If, for example, a student or students complained of being unable to pronounce some words in a passage, a brief demonstration lesson was given to develop some strategies to handle the problem and satisfy the immediate need. But no student or group of students was ever required to go off in the corner to master his long and short vowels, diphthongs, blends, digraphs or the alike.

6. Use of Course Folders, Weekly Activities Sheets, Assignments

In order to clarify for the students exactly what was expected of them, specifically what they were to do at specified times, and how well they were keeping up to date in the course, several procedures were used.

For one thing, each student was provided a letter-size manila folder which he was handed at the beginning of each class period and which he returned at the close of the day's reading/study skills activities. This folder served several student record-keeping functions. First, it was used as a record of daily attendance. Dates of absence were marked on the front cover of the folder as were occasions of lateness. (This was an important procedure since students were paid their CETA stipends only for the times they actually attended the classes.) Psychologically, it was hoped that by making the attendance record evident on folders they used each day, students would be continually reminded of their efforts in this regard and would not need verbal reprimands if their attendance record was poor.

On the inside cover of the folder, each assignment that was overdue, by even one day, was marked by date, name of assignment, pages and so forth. After the student completed the overdue assignment, it was crossed off in the folder. In a concrete way, this system served to apprise students of their progressive records of completing assignments. Thus, a clean folder with no dates on the cover and no notations on the inside indicated a perfect record of attendance and completion of assignments. (The strength of this system became most apparent one day when a young woman in the group, who up to this time had had a perfect record, submitted the following note: "Mr. _____, I know that I have not handed in the practice due on p. 83 of R & SS, but I'll put it in the folder first thing tomorrow. Please don't mark my folder!")

By means of this folder, a ritualized system of handing in daily practices and homework assignments and receiving back corrected papers was established. Each day, students handed in work for closer analysis than could be achieved by the over-the-shoulder monitoring given in class that was described earlier. And by no later than the next class, they received back feedback on the progress they were making in the form of graded papers. Though admittedly this often created a great burden on the instructor of the course, it was hoped that the practice of returning graded assignments the very next day would communicate to the student the importance of study deadlines.

In the same vein, on Thursday of each week, the students received an Activity Sheet for the following week, specifying by day and period the practice activities scheduled for the week as well as homework due on specific days. In

this way, students knew, day by day, specifically what lay ahead in the weekly schedule, including books and materials needed as well as topics to be treated:

Rdg 292		Activities			Week
					Beginning
	MON	TUES	WED	THURS	
C L A S S					
L A B	Assign. Due:	Assign. Due:			

Finally, although much class time was given to individualized practice, students had homework assigned at least twice each week. Generally, these assignments had to do with vocabulary and/or dictionary skills practices or practices in the application of study-reading techniques to chapter-length passages. The theory here was that this regular routine would prepare the students for typical courses which they would be taking in succeeding semesters -- courses where class time would not for the most part be devoted to individualized practice but where assignments would typically be required as homework.

H. Organization of the Course

Although there was some variation throughout the semester, the reading/study skills class attempted to abide by a consistent routine of weekly activities according to a semester plan of successive units. Some areas, however, were not divided into units but were extended throughout the semester (Guided Reading, Listening Skills, Sustained Silent Reading).

Generally, the following weekly plan occurred:

	MON	TUES	WED	THURS
8-9am	Vocabulary Skills (mixed mode)*	Comprehension/ Study Skills ↓ (mixed mode)		Listening Skills (group/individualized)
9-10am	Problem-Solving Skills (mixed mode)	↓ (mixed mode)	Guided Reading Practice (individualized)	Sustained Silent Reading (individual)

*As indicated earlier, "mixed mode" consisted of alternating large group/small group/individualized instruction.

Both tutor-technicians were generally available in the classroom to assist the instructor in the management of this instructional-pattern during the 9-10 a. m. period. At least one tutor-technician was available on Tuesdays and Thursdays from 8-9 a. m. Consequently, for six of the eight weekly scheduled hours, from two to three learning helpers were available to provide individualized or small group instruction of the human kind to the students in the project. The ratio of students to tutor (including the instructor as tutor), therefore, was 8 to 1.

A sequence of units characterized the instruction in vocabulary, problem solving, comprehension/study, and listening. However these units were not necessarily arranged according to a hierarchy of skills model, but more so by a holistic approach. There was much overlapping and blending of skills throughout the semester. The separation of curricular topics merely allowed a convenient focus on certain topics at certain times. Generally the following represents that loose sequence:

TABLE 10
Reading/Study Skills Unit Sequence

Vocabulary	Problem Solving	Comprehension Study	Listening
Dictionary & Pronunciation Guide	Verbal Reasoning	General vs. Specific statements	Statements with one Main Idea & Support
Word Analysis	Analogies	Main Ideas	Overcomings distractions and poor organization
Context	Trends & Patterns	Patterns of Exposition: Definition Examples. Listing Classification Comparison	Statements with several main ideas and support
		SQ4R	Lectures and notetaking
		Test-Taking	

Within this sequence, for example, some skills were practiced incidentally and later given special emphasis. The use of underlining/markings, therefore, occurred as the students were studying technical definitions of terms presented in study material.

After developing strategies for locating such definitions and for studying them, the students also practiced marking up the text which they were using. Later in the semester, though they had been practicing SQ4R skills all along without realizing that they had been, the class focused their attention on the SQ4R system as a total method of textbook-study, this time practicing again such skills as underlining and marking up the chapter they were using. Similar procedures were used for the other skills included in the course.

I. Grading

The final grades for the course were determined in part by averaging accumulated scores on the following posttests and progress tests:

Dictionary Posttest
Pronunciation Guide Posttest
Word Analysis Posttest
Memory Unit Posttest
Effective Listening Program Posttest
Lecture Notes Posttest
Study-reading Progress Tests (average)
Analytical Skills Posttest

Also, using the 10th grade equivalency score on the Nelson-Denny Reading Test as the standard for 100%, percentages were computed for the vocabulary and comprehension subtests and for the total score. These percentages were added to the previous scores to compute an overall average.

Throughout the semester, of course, students were allowed to re-take alternate forms of any unit tests on which they had not achieved a passing grade or for which they were dissatisfied. The greatest majority did not need to take advantage of this privilege.

J. Coordination of Reading/Study Skills with Other Courses in the Program

No direct attempt was made to use the same materials or subject topics throughout the various components of the Basic Skills Project. Nevertheless, coordination of efforts did occur as was described in other parts of this report. A brief explanation however, seems appropriate here to identify the coordinated attempts to improve the literacy skills of the project students as these occurred between the reading/study skills component and the math and writing components.

For one thing, the reading class work in problem solving seemed to help the students in their mathematics skills, (specifically, with word problems on the mid-term math test -- even though the math class had not yet treated that area, up to that point in the semester). And it became apparent that the study-reading techniques practiced in reading class were indeed being transferred by the students to the studying they were doing in the writing class. On the other hand, several assignments and practices in the writing class had a direct relationship to skills treated in the reading class, especially assignments requiring reading, the use of the library, and the writing of answers to questions found in textbooks. Almost daily, it became possible for the reading instructor to refer to lessons taught in the other two discipline classes, so much so that students soon learned that they were being instructed by faculty who were very aware of what was occurring in their other classes

K. Summary of Literature-based Features of the Reading/Study Skills Component of the Basic Skills Project

The reading/study skills component of the Basic Skills Project attempted to put into practice as many of the Guidelines for Successful Programs which the literature (most of it, research-based) suggested. The succeeding list summarizes those features.

- 1.) The reading/study skills component was just one element of a total-integrated approach to providing developmental education to high-risk students.
- 2.) The reading/study skills component was based upon the philosophy that all students, but especially the project students, could profit from instruction geared to helping them develop into more able readers, thinkers, and students if they were given the opportunity.
- 3.) The reading/study skills component was based on a psycholinguistic view of reading as a complex, active, reasoning-thinking-reacting process which involves all the unique cognitive, intellectual, linguistic, psychological, and physiological factors that comprise an individual personality.
- 4.) Skills were presented according to a holistic model which kept meaning as the central focus of all activities and practices.
- 5.) There was much interaction throughout the program among the reading instructor, the mathematics instructor, the writing instructor, and the counselor.
- 6.) The reading component consisted of even more than the recommended forty hours. It was a 16-week program of eight weekly hours of instruction, comprising a total of 128 hours.
- 7.) Students participated throughout the course in the diagnosis of their strengths and weaknesses as well as in the development of the means by which they could achieve efficient and productive reading and study skills.
- 8.) Students at all times used materials that were adult in interest and that specifically related to occupational and training goals which they expressed.
- 9.) Although the course could not include content material from actual occupational courses taken by the students (since they were not enrolled in such courses yet), it did include typical materials found in such courses.
- 10.) The greatest majority of class time was devoted to individual practice by students with individual feedback occurring in a personal way from instructor and tutors alike.
- 11.) Hardware was used minimally in the course -- and then primarily for variety and motivation. Aud-reading (reading while listening to a taped reading) was used as suggested by research.

- 12.) Tutoring did occur within the classroom and not apart from it.
- 13.) Listening and notetaking skills and memory skills were introduced in the earliest classes and were developed, practiced, and reinforced throughout the semester.
- 14.) An emphasis was placed upon developing analytical/critical thinking skills throughout the course.
- 15.) Much emphasis was given to developing the abilities of the students to analyze and comprehend typical writing patterns found in technical-scientific materials.
- 16.) The project students were trained in all elements of the SQ4R study method, ultimately as a total approach to textbook reading.
- 17.) Pre-transfer credit was given for the course.
- 18.) Grading was achieved by assigning traditional letter grades.

L. Findings - Reading/Study Skills

This section of the report is limited to an analysis of comparative data and progress test data collected for the Reading/Study Skills Component of the Basic Skills Project. The data which follow consist of comparisons of group performance on two pre/post formal measures:

Nelson-Denny Reading Test
WASI (Whimbey Analytical Skills Inventory)

In addition, comparisons will be made of group performance on several instructional pre/post tests used to assess student progress in units taught during the course:

- Dictionary Skills Unit
- Dictionary Pronunciation Guide Skills Unit
- Word Analysis Skills Unit
- Unit in Skills of Determining Meaning from Context
- Listening Skills Unit

Finally, group performance on tests for units for which there were no pretests will be presented:

- Memory Unit Test
- Study-Reading Progress Tests
- Lecture/notetaking Tests

1. Comparative Data for the Nelson-Denny Reading Test

Pre and posttest comparisons for the various subtests of the Nelson-Denny Reading Test (Form C for the pretest, Form D for the posttest) are given in Table _____. The entire group could not be used because six of the students who started the program did not complete the course and one student left the program during the second-last week in order to begin occupational training.

TABLE 11

Comparative Data for the Nelson-Denny Reading Test
for Participants Who Completed Pre and Post Measures

N = 17

	RATE (wpm)				VOCABULARY				COMPREHENSION				COMPOSITE			
	PRE	POST	GAIN	P	PRE	POST	GAIN	P	PRE	POST	GAIN	P	PRE	POST	GAIN	P
Mean	171.8	257.2	85.4	<.0005	9.7	10.2	.6	<.1	7.3	9.2	1.9	<.01	8.1	9.7	1.6	<.005
SD	25.5	70.5	66.98		1.6	2.0	1.63		.9	2.1	2.65		.9	2.0	2.07	
Range	143- 230	139- 384			7.9- 12.7	7.2- 13.8			6.0- 8.9	6.0- 13.7			6.0- 9.5	6.0- 12.7		
# of Gains	16				10				11				14			

The data in the Table indicate that significant, but varied gains occurred for all subtests and that there was greater standard deviation in all areas on the posttest than on the pretest.

The greatest number of student gains occurred for the rate subtest (16) with the group averaging 85.4 words per minute faster on the posttest than on the pretest. This gain in rate was significant beyond the .0005 level, indicating that there was only one possibility in two thousand that the increase was due to chance. Of course, an examination of the standard deviations and ranges on this subtest reveals that the group was less homogeneous at the end (S.D. 70.5, Range 139-384) than at the beginning (S.D. 25.5, Range 143-230).

Similar findings exist for the composite score on the test, where the number of student gains ranked second (14). The average grade equivalency gain for this total score was 1.6 grade levels, which was significant beyond the .005 level of probability. Thus, there was only a one-in-two hundredth possibility that the increase was due to chance. However, here too the group appeared less homogeneous on the posttest (S.D. 2.0, Range 6.0-12.7) than on the pretest (S.D. .9, Range 6.0-9.5).

For the comprehension subtest, where eleven students demonstrated gains, the group averaged the greatest grade equivalency gain of all -- 1.9 grade levels. The increase was also statistically significant, this time beyond the .01 level, meaning that the probability that these gains were due to chance approximates only one in one hundred. However, the significance here was less than those for rate or composite score. Deviations from the standard were once again similar for this subtest as for the previous scores presented, with the group being less homogeneous on the posttest (S.D. 2.1, Range 6.0-13.7) than on the pretest (S.D. .9, Range 6.0-8.9).

Finally, the fewest number of gains (10) occurred for the vocabulary subtest, where the group averaged only .6 grade equivalency increase over the pretest. However, even this gain was statistically significant at the .1 level of probability. Thus, the possibility that this increase was due to chance was about one in ten. The difference in homogeneity in this subtest was less dramatic, with the posttest (S.D. 2.0, Range 7.2-13.8) showing slightly less homogeneity than the pretest (S.D. 1.6, Range 7.2-13.8). No doubt, the fact that six students scored above the 10.1 G.E. level on the pretest while only nine scored above the 10.4 level on the posttest accounted in part for the minimal group gain indicated for this subtest.

It should be noted that three students reported having off-days at the time the posttest was administered. An examination of their scores, in fact, demonstrates that such may have been the situation for them. Although the data reported above do not include their second-attempt scores, these students were allowed to retake the test and all did remarkably better the second time. Thus, even though the comparative data for the Nelson-Denny Reading Test do indicate significant gains for the group in all areas, the gains may have been more dramatic if these three students had not been competing against personal factors which had negatively affected their performance during the official administration of the test.

One must keep in mind that the Reading/Study Skills Component did not teach for improved performance on the Nelson-Denny Reading Test. In fact, the content of

this standardized instrument bore little resemblance, if any, to the content of the class. What is more, as professionals in the field of reading argue, all that such pre/post standardized comparisons demonstrate is how a group of subjects compare to a norm group during their respective performances on tightly controlled administrations of the test, but not necessarily what the true reading abilities of either group may be.

However, whatever the Nelson-Denny Test measures about performances of the group during a certain type of reading situation, it is nevertheless predictive of student achievement. Consequently, an examination of the posttest scores reveals that the Basic Skills Project students, as a group, seemed more ready at the end of the program to undertake occupational training courses than they were at the beginning. In fact, if a 10th grade equivalency on the composite score indicates such readiness, the seven of the group who scored above the 10.0 level seem most likely to achieve later success and the two who scored 9.8 grade level seem close to being ready for such success - for a total of nine students. Of the remaining eight, five who scored between 8.0 and 8.9 will certainly experience difficulty and will need further support, and the three who scored below the eighth grade may likely experience failure without further intervention. (Of course, if the second-attempt data have any predictive validity at all, two of these three could be moved into the marginal group that scored somewhere within the 8th grade range.)

2. Comparative Data for the WASI

In order to assess individual and group performances for analytical/critical thinking skills, the Whimbey Analytical Skills Inventory was administered during the first week of the course. During the succeeding weeks of the Reading/Study Skills Component students practiced these skills in three areas: verbal reasoning, analogies, and trends and patterns. Altogether, they worked over 200 problems during the semester.

Unfortunately, there is no alternate form of the WASI available for posttestings. However, it was assumed that the great number of problems worked after the first administration of the inventory would have precluded the possibility that students would remember the specific items found in the test. Thus, the same version of the WASI was used sixteen weeks later to assess growth in analytical skills.

The following table (Table 12) reveals statistically significant gains for four of the five kinds of problems found in the 38-item inventory as well as for the total score.

TABLE 12

Comparative Data (Raw Scores) on the Whimbey Analytical Skills Inventory for Participants Who Completed Both Pre/Post Administrations

N = 16

	Verbal Reasoning (12)				Analogies (9)				Trends & Patterns (6)				Math Word Problems (7)				Vocabulary (4)				Total (38)			
	Pre	Post	+/-	p	Pre	Post	+/-	p	Pre	Post	+/-	p	Pre	Post	+/-	p	Pre	Post	+/-	p	Pre	Post	+/-	p
Mean	5.4	8.8	+3.31	<.0005	2	3.4	+1.38	<.01	2.4	4.3	+1.88	<.0005	3.2	4.4	+1.19	<.025	2.3	1.9	-.3		15.3	22.6	+7.31	<.0
S D	1.9	2.02	1.89		1.4	1.8	1.93		1.1	1.2	1.36		1.4	1.7	2.2		.9	1.1	1.25		4.4	6.0	5.88	
R	3-9	8-11			0-4	1-7			0-4	2-6			1-6	0-7			1-4	1-4			8-24	10-34		
	15				9				14				12				4				15			

As the Table indicates, the kinds of problems for which the group achieved the greatest statistically significant gains were the verbal reasoning problems and the problems of trends and patterns. Both gains were significant beyond the .0005 probability level, which indicates that there was approximately only a one in two thousandth probability that the increase was due to chance. Identical significance occurred for the total score. Of the sixteen who completed both measures, the number of students who gained in scores on both the verbal reasoning problems and on the total test was fifteen, while fourteen students gained on the problems of trends and patterns.

Gains for the math word problems and for the analogy problems were also significant, but considerably less so than those for the previously mentioned problems. For the math word problems the gains were significant at $< .025 p$ and for the analogies, at $< .01p$. More students gained on the math problems (12) than on the analogy problems (9).

Not only was there no significant change in the average group performance on the vocabulary problems, but there was a slight loss, a fact which lends support to the assumption that students probably did not remember the individual test items from the pretest to the posttest administrations of this instrument. In fact, only four students improved their scores in this type of problem.

The dramatic average gains demonstrated by the Basic Skills Students for the verbal reasoning problems, the problems of trends and patterns, and for the total score reveal that analytical reasoning skills can be learned by means of cognitive process instruction, as defined and explained by Whimbey and Lochhead. In fact, since four of the five types of problems included in the test had actually been taught and practiced during the Basic Skills Project and since all four of these show significant gains in scores by the students, it is apparent that the project students did indeed profit from instruction. They learned!

3. Comparisons of Instructional Unit Pre/Post Measures

Further evidence that the project students profited from instruction can be seen in comparison of pre/post tests used to diagnose entry skills and to evaluate progress on these skills for five instructional units taught during the course (Table 13). These included units in the development of dictionary skills, skills in the use of dictionary pronunciation guides, skills in determining the meanings of words by an analysis of root and affix meanings, skills of determining meanings from context clues, and listening skills (for which the students took no notes).

An examination of pretest averages for these units indicated that the students did need to develop their skills in these areas. As Table 13 demonstrates, the greatest need existed for the development of listening skills. On the pretest, the group average was only 21.63%, which, according to research, was slightly less comprehension than that achieved by the average untrained listener (24%) for a ten-minute talk. Word analysis skills, though slightly higher, were nevertheless very poor, with the group averaging only 42.35% on the pretest. Also poor were the dictionary skills of the group (average of 50%) and the skills of using a dictionary pronunciation guide (average of 58.09%). The strongest skills, though also rather weak, were those of using context clues to determine vocabulary meanings; here the group managed an average of 62.2% on the pretest.

TABLE 13

Comparative Data (Percentages) on Instructional Pre/Post Unit Tests for Participants Who Completed Both Tests

	Pronunciation Guide Tests				Dictionary Tests				Effective Listening Program Tests				Determining Meanings from Context Tests				Word Analysis Tests			
	N = 22				N = 22				N = 16				N = 18				N = 17			
	Pre	Post	Gain	P	Pre	Post	Avg Gain	P	Pre	Post	Gain	P	Pre	Post	Gain	P	Pre	Post	Gain	P
Mean	58.9	84.23	26.136	<.0005	50	75.41	25.409	<.0005	21.63	55.31	33.675	<.0005	62.2	62.78	.556	.43	42.35	74.94	32.588	<.0005
S D	13.32	8.96	13.357		13.27	9.08	14.128		8.08	19.38	18.646		17.68	14.87	11.618		15.54	12.79	17.731	
Range	27-80	73-100			17-74	52-93			4.2-33.3	20.7-90			30-100	40-80			20-73	52-97		
% of Gains	22				21				15				5				17			

Following instruction in these areas, the group were given posttests to determine the levels of their mastery and their progress. (Note that the number of students varies because of attrition and/or other factors. Data are reported only for students who completed both pre- and posttests.)

As can be seen by the Table, all students gained in scores on the pronunciation guide test and on the word analysis test. And all but one each gained on the dictionary skills test and on the effective listening program test. Indeed the average group gains on these four tests were extremely statistically significant, .0005 p. Assuming that the posttest scores would go up because of instruction, a one-tailed test for significance was applied which indicated that the probability that the gains were due to chance approximated only one in two thousand.

This is not to say, of course, that the students had achieved complete mastery of the skills which they had learned. In fact, using traditional interpretations of grades, the posttest data reveal that, on the average, the group at the end possessed better than average skills in using a dictionary pronunciation guide (84%) and about average skills in using a dictionary (75%) and in using word analysis to derive vocabulary meanings (74.94%). Their ability to comprehend and remember the chief ideas from listening, however, was weak at the end in spite of the fact that they managed to more than double their scores from pretest to posttest and in spite of the fact that their posttest listening average score (55.3%) exceeded the ability of the average untrained listener by more than twice.

The most disappointing scores occurred for the posttests for the unit on using vocabulary context clues. Only five students showed gains in this area, and the group at large remained equally weak in these skills at the end (62.77%) as they were at the beginning (62.2%). One can wonder only how much the fact that the pretest scores

here were the highest of the lot influenced the students negatively not to take the unit as seriously as they had taken the other units.)

Thus, pre/post data for instructional units taught during the course, indicate once again that the Project students profited from instruction -- this time in four out of five areas.

4. Group Averages for Other Tests Used to Evaluate Instruction

Three units of instruction included in the Reading/Study Skills Component had no formal pretests: lecture/notetaking, memory skills and study-reading. There were several reasons for this variation of the system, each unique to the particular unit which was presented.

For one thing, since the lecture/notetaking unit followed the unit in general listening skills, for which there was a pretest, it was felt that students already had sufficient awareness of their abilities in this area. The lecture/notetaking unit, in fact, differed from the effective listening unit only in slight ways: The length of the statements in the former were longer and the students took notes during the process of listening, rather than recording notes after listening to short statements.

For the memory unit, several learning games introduced during the beginning of the course served somewhat as loose diagnostic measures. Thus, no formal pretest was used.

In the case of study-reading, students had diagnosed their study strategies on a Reading Inventory (the responses to which were analyzed in the foregoing section of this report). Consequently, here too there seemed to be little need for pretesting.

One other reason lay behind not using pretests for two of these units (the memory unit and the study/reading unit) and that was that advice by external consultants recommended reducing the number of tests given during the early days of the program. Therefore, since diagnosis for these units could have been achieved in different ways than by pretests, it was decided not to use them in these areas.

However, unit tests were administered for these three units in order to evaluate student levels of mastery for these skills. The following table (Table 14) presents the group averages for unit tests in lecture/notetaking skills, memory skills, and study-reading skills.

TABLE 14
Group Averages on Tests for Instructional Units
Which Had No Pretests

Test Averages for Unit in Lecture/Notetaking	Memory Unit Test	Test Averages for Study-Reading Progress Tests
N = 15	N = 24	N = 18
Mean 67.58	81.06	72.59
SD 13.07	13.8	8.88
Range 40.5 - 89.5	38 - 95	55.3 - 81.7
# Passing 12	22	16

There was unanimous agreement (7 to 11 students) or strong agreement (4 to 10 students) in favor of the number of lectures, number of opportunities for group work, and sufficiency of individual help provided. However, two students expressed dissatisfaction with the amount of individual practice allowed during the reading/study program and these two also felt that the management of instruction held them back somewhat from learning all that they wanted to learn. Thus, although there was complete approval for the mixture of large and small group and of individual instruction during the course, there seemed to be some need for even more individual practice than was provided.

Unanimous approval was also given for the number of chances given to the students to improve in their reading and study skills (10 strongly agreeing and 7 agreeing). And all disagreed (9 strongly disagreeing and 8 disagreeing) that the course "included too many lessons in areas [they] saw no need to improve [their] skills." Furthermore, they universally acknowledged that the management of instruction helped them understand their needs and the degree of their progress throughout the duration of the course.

5. Suggested Improvements by the Students for the Reading/Study Skills Component

Although the majority of questions in the student evaluation instrument required the participants to react to statements by indicating their approval or strong approval, of disagreement or strong disagreement with the features of the Reading/Study Skills Component, the opportunity was given to them at the end of the instrument to state their suggestions for improving the course. These statements were significant since they were freely expressed opinions and as such were no doubt indicative of strong feelings about the course. A summary of these feelings follows:

"Future training could be improved....

1.) in the Reading-Study Skills Course by"

- (8) - changing nothing
- (2) - allotting more time for this course
- (2) - including more interesting or personally relevant materials.
- (1) - providing more time in the learning center to work on rate improvement
- (2) - including more practice and/or instruction in the techniques of reading technical books.
- [1] - (No comment)
- [5] - (Praise for instructor and/or course)

As this summary reveals, five students took this opportunity to praise the course and/or instructor and eight stated that nothing should be changed about the course at all.

However, two students suggested allotting more time for the course. And two expressed the desire for more instruction and practice in study-reading techniques while one stated a desire for more laboratory work in rate exercises.

For the lecture/notetaking unit, twelve (of fifteen) students managed to achieve a passing score of 60%. The group average here was 67.58% with considerable standard deviation (13.07) from the mean. The listening skills demonstrated for this unit were somewhat better than for the effective listening program (55.31%), which preceded it. No doubt, one of the reasons was that students this time could take notes while listening (something they could not do during the effective listening program). But the listening comprehension skills overall remained weak for the lecture/notetaking unit.

For the memory unit, which was the first unit presented in the course -- therefore, accounting for the higher n -- the group produced a better-than-average mean score (81.06%), with twenty-two (of 24) students achieving a passing grade, (above 60%). (Of the two students who failed, the one who achieved the lowest score -- 38% -- dropped out of the program during the first weeks of the semester.)

The study-reading unit was the one unit of the entire course (besides the Guided Reading Program) which was of semester duration. Three progress tests were given for this unit. As the Table indicates, the group average for these three tests was 72.59%, with sixteen (of 18) students achieving a passing average (60%) and with relatively greater homogeneity among scores here (SD 8.88) than for the other two units analyzed here.

Once again, the data here reveal that the group achieved relative mastery of the skills they were attempting to learn: some mastery of lecture/notetaking skills, average mastery of study-reading skills, and better-than-average mastery of memory skills.

6. Summary of Findings

The previous analyses indicate that statistically significant gains were achieved by the Basic Skills Project students because of the instruction, practice, and consequent learning which occurred directly and indirectly during the Reading/Study Skills component of the course.

While the exit levels were in no case superior, the group as a whole achieved nearly a 10th grade level on the total score of the Nelson-Denny Reading Test, Form D - - a fact which appears predictive of their future success in occupational training programs they are now beginning.

What is more, with one exception (their ability to derive meaning from context clues), the project students, as a group, profited from instruction and learning which they undertook. In fact, they gained dramatically between pre/post measures of their skills in the following areas:

- reading rate
- comprehension
- total reading score
- analytical/thinking skills for four
of five types of problems
- dictionary skills
- word analysis skills
- listening skills

Only in the area of overall development of vocabulary and of the skills of using context clues did the group fail to demonstrate considerable upward movement -- no doubt because the development of vocabulary is a slow process requiring extensive reading.

Moreover, when they exited the program, the group could not be labeled superior in their skills. In fact, they were still weak in the vocabulary skills mentioned above as well as in listening skills and in the ability to solve analogies and math word problems. And by comparisons to norm groups, with a few individual exceptions they still fell below college freshmen level in all areas of the Nelson-Denny Reading Test.

However, they did demonstrate remarkable progress in their reading and study skills, a fact which gives hope for their future survival in subsequent programs at the college. And that survival, after all, is what the bottom line of this program was all about.

M. Student Evaluation of the Reading/Study Skills Component

On the last day of the semester, the students enrolled in the Basic Skills Project completed a comprehensive evaluation of the program. Included in this evaluation instrument were sets of questions regarding the content and classroom management of the Reading/Study Skills component of the program as well as an open-ended question soliciting suggestions from the participants for improvement of this component if it were to be offered with modification to future CETA clients. Following is a summary of these student evaluations of this part of their basic skills training.

1. Evaluation of the Content of the Reading/Study Skills Component.

As the following Table (Table 15) indicates, a majority of the student participants (10 to 14 students) expressed strong agreement that all units included in the Reading/Study Skills component "should be included the next time this program is offered to students." Some (3 to 7 students) expressed simple agreement. But most importantly, none disagreed about replicating the content of the course during possible repetitions of the program.

TABLE 15
CONTENT OF THE PROGRAM

Reading and Study Skills	My skills in this area have improved.				I need additional instruction in this area.				This unit will be useful to me in my future training.				This unit should be included the next time this program is offered to students.			
	SA	A	D	SD	SA	A	D	SD	SA	A	D	SD	SA	A	D	SD
1. Memory Unit.	4	13			9	11	2	1	9	8			11	6		
2. Effective Listening.	3	13	1		6	7	3	1	7	10			12	5		
3. Dictionary Unit.	8	9			4	9	4		10	7			12	5		
4. Vocabulary Unit in prefixes and roots.	9	7	1		8	8	1		9	8			14	3		
5. Vocabulary Unit in figuring out meanings from context.	6	10	1		5	12			7	10			12	5		
6. Problem Solving.	10	7			4	10	2	1	9	8			12	5		
7. Techniques of studying technical books.	7	9	1		5	9	3		9	8			14	3		
8. Guided reading exercise	11	5	1		3	9	4	1	9	8			10	7		

Similarly, the students revealed unanimous agreement (7 to 10 students) or strong agreement (7 to 10 students) that all of the units covered would be "useful" to them during their future occupational training courses: Again, not one student reacted negatively to this set of questions.

However, very few students (1 to 4 students) believed that they had completely mastered the skills which they had worked on. In fact, most saw the need for additional instruction in all units. Outstanding as an indication of their realistic self awareness at the semester's close were their reactions to the unit on figuring out vocabulary meanings from context: they all realized that they remained weak in these skills (just as the posttest findings, reported earlier, demonstrated). Of course, their admission of the need for more instruction in all areas was not to deny that they had indeed experienced improvement of their skills. With just one exception each for five of the eight units covered during the semester, 94% of the students (16 of the 17 responding) expressed agreement or strong agreement that improvement had occurred. The areas where most saw great improvement were Guided Reading Exercises (11), Problem Solving (10); and the Vocabulary Unit in Prefixes and Roots (9). And without exception all cited progress in memory skills, dictionary skills, and problem solving skills.

2. Evaluation of the Classroom Management of the Reading/Study Skills Component

The evaluation instrument also asked the project students to express their agreement or disagreement with regard to the techniques by which the Reading/Study Skills component was managed. Table 16 indicates their opinions.

TABLE 16
CLASSROOM MANAGEMENT

The Reading-Study Skills course....

1. had a sufficient number of lectures to the whole class.
2. had enough opportunities to work in groups with other students.
3. gave me enough individual help when I needed it.
4. included enough individual practice in the skills I needed to master.
5. gave me many chances to improve in the reading and study skills I needed to develop to become a successful student.
6. held me back from learning all the reading and study skills I wanted to learn.
7. included too many lessons in areas I saw no need to improve my skills.
8. helped me understand by its system of pre and post tests what I needed to learn and how well I learned what I should have.
9. gave me opportunities all along to see whether or not I was progressing.

	SA	A	D	SD
1.	8	9		
2.	9	8		
3.	7	10		
4.	4	11	2	
5.	10	7		
6.		2	9	6
7.			8	9
8.	7	10		
9.	6	11		

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One of the problems of choosing materials for the course became apparent among these suggestions. Unfortunately the students in the program had a wide variety of occupational interests although all intended to seek training in careers that were technical in nature. Thus, it was difficult to choose instructional materials whose content always matched every student's career interests. Two students, therefore, took the opportunity of the student evaluation to suggest including more interesting or personally relevant materials if the course should be offered again.

3. Summary of Student Evaluations of the Reading/Study Skills Component

Generally, there was outstanding approval among the students for the Reading/Study skills component both in content and in management of instruction. Where there was dissatisfaction expressed, it typically consisted of the feeling that there should have been more, not less than was provided. Thus, the students; while acknowledging they had indeed improved their skills, saw the need for more opportunity to master the skills they had worked on, wanted more while acknowledging they had indeed improved their skills, saw the need for more opportunity to master the skills they had worked on; wanted more time to achieve such mastery, but left feeling that what they had learned would truly help them in their future occupational training.

N. Student Comments on Last-Day Impromptu

On the last day in the writing class, each student interviewed another student about the pluses and minuses of the program. Again, students volunteered remarks about wanting "more reading":

("What more do you think you could have gotten out of the Program?")

Five students commented that they would have liked "more reading." Two of these would have liked more "free reading" time.

Positive remarks were applied to a variety of the courses' units. Ten students commented favorably upon the Reading/Study Skills class. Here are some representative quotes.

"What do you think you have gotten out of the Basic Skills Program?"

- 1.) "The program helped [her] for future college courses."
- 2.) "...[she] has also learned skills in note taking that will be useful in the future courses."
- 3.) "Furthermore, he learned the SQ₄R study methods which helped him especially in the technical book and which should keep him in future courses which he will be taking. He improved himself greatly with verbal reasoning and how to relate to analogies."
- 4.) "Nevertheless, she enjoys reading class the most. [Her] favorite book is Consider Your Words."

- 5.) "(She has) learned dictionary skills that were unknown to (her) in (her) previous education."

O. Tutors' Evaluations

In evaluating the methods of the Reading/Study Skills course, the two tutors "agreed" with all the positive judgements of the students. However, while agreeing that the course included "enough individual practice" for the students to master skills, the tutors added the note, "the opportunity was not always taken advantage of."

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VII. REVIEW OF RELEVANT RESEARCH OF PRACTICES - WRITING

Writing weaknesses are difficult to quantify. Being a clear writer requires not only "knowledge" of some "rules" as pronoun agreement but the practiced instinct to perform such things as relating one item to the next.

A. Definition of Problems

Some researchers attempted to define problem areas of unpracticed students. Lamberg (1975) inferred these problems:

- They lack self-management skills.
- They lack a set procedure for working through an assignment.
- They have great difficulty getting started.
- They fail to understand directions.
- They write poorly organized papers.
- They lack a system for proofreading.
- They have problems accepting criticism.

Confronting such difficulties, Harris (1981) concluded that a student who suffers with them "cannot be taught new methods of composing, but will have to work on an individualized basis to change dysfunctional habits and strategies into more effective ones." In response to the question "What is needed?" Maxwell (1979) wrote, "To improve their composition skills, students need a supportive environment, a clear idea of what is expected, and information and ideas to write about."

B. Supportive Environment

One of the most consistent recommendations of researchers was to give Basic Skills writing students more personal time and attention than they could expect in conventional settings. Trillin, when reviewing program problems in Basic Skills training at the City University of New York (1980), wrote, "... skills programs need to provide the student with more time and more support to reach their goals than we had commonly assumed." The term "support" implied an active and sympathetic interchange. Kates (1973) stressed this thought in his summary of recommendations following a study of sixteen classes of freshmen in eight community colleges and three universities in the greater Los Angeles area. Kates urged that "conferencing, more than any other recommendation, should be mandatory." Kates's point about "conferencing" may be related to Zucker's finding in regard to successful classroom behaviors by teachers of remedial composition courses in five Los Angeles junior colleges. According to Zucker (1966), the "most critical teacher behavior," in the students' judgment, was "encouraging classroom discussion." Zucker noted some specific techniques which the students considered most helpful.

- 1.) The teacher asked us to talk about the subject.
- 2.) The teacher told us to talk to each other.
- 3.) Our teacher, Mr. X, asked us to form discussion groups and talk about the material.

- 4.) The teacher helped us have classroom discussions.
- 5.) The teacher asked us to discuss the subject rather than lecturing all the time.

The values of such interactions between students and tutors were considered by Harris (1981) to be the most important assets of student-centered writing labs.

C. Defining Goals and Modeling Performances

One function of interaction is to clarify goals. Cross (1977) advised, "The goals of learning must be clear and must be made explicit to the student. She referred to reports which concluded that, "... both logical analysis and research evidence do support the notion that students, especially New Students, will experience greater satisfaction and achievement if they have a clear idea of what is expected of them."

To assist the student to understand what is required, Zucker (1966) recommended "many specific and detailed examples." External consultant John Roueche similarly encouraged an emphasis of models rather than rules in pursuit of objectives.

D. Small Units and Modules

Cross commented, "Very closely related to the need for course objectives is the desirability of small lesson units (frequently referred to as learning modules) dealing with a single concept." The importance of dividing performances into small units was discussed by many writers. Ways of dividing units were developed in several fashions. Gray and Slaughter (1980) described one system for guiding developmental students through writing assignments:

All writing assignments are presented on detailed, written assignment sheets that set forth discrete steps for students to follow in considering separately the many tasks involved in completing the assignment. Students are instructed to:

- (1) Choose a topic.
- (2) Jot down details in phrases or single words that come to mind in thinking about the topic.
- (3) Find a word or words that summarize the overall sense or tendency of the list and use that designation in a simple statement that establishes the point to be made about the general topic.
- (4) organize the details into categories . . .
- (5) Write the first draft (6) Reread the draft, revising it first for content, then for specific elements of grammar.
- (7) Write a final draft.
- (8) Proofread the final draft.

Though apparently operating with a somewhat different philosophy than the preceding authors, Klingstedt (Burns and Klingstedt, 1973) likewise recommended the structuring of units. Klingstedt quoted the explanation of cognitive philosopher

Jerome Bruner, that teaching according to structure (1) makes the subject more comprehensible, (2) promotes memory, (3) fosters "transfer of training," and (4) narrows the gap between "advanced" and "elementary" knowledge.

E. Self-Pacing Writing Programs

In many discussions of "modules," the authors' assumptions were that the students' progress would be "self-paced." Several examples of self-paced writing programs were described. One program which compiled statistical support for its claims of success was that operating in the English Multimedia Laboratory of San Antonio College (Rudisill, 1976). The Laboratory served students in the lowest category of ACT achievement levels (1-15) by a system of individualized, self-paced, computer-assisted instruction. Each student moved through ten learning areas according to specified behavioral objectives. Within this program, the students spent two hours in the traditional program. Some students spent one additional hour in the laboratory with their regular classroom teacher, but students with extremely low scores spent four hours per week in the laboratory. In the laboratory, students practiced with programmed materials, computer terminals, and other equipment. Students received considerable additional personal support from the teacher, from tutors, and from student proctors.

Rudisill observed that the number of Basic English students who had received D's or F's in their next English classes had decreased from 54.02 percent to 38.64 percent after the laboratory had been instituted.

Another sort of self-paced writing program was developed in Bunker Hill Community College, Charleston, Massachusetts (Lazar, 1976). The program consisted of a Writing Lab which lead students through twelve areas of basic skills. This Lab relied heavily upon peer teaching assistants. The Lab was staffed by a teacher and five student assistants who had considerable training and subsequent responsibility for improving the mechanical skills of fellow students. Supplementing the lab was a Writing Workshop. In the workshop, the writing students discussed analytical and organizational skills with the teacher.

A program which applied self-pacing in a different manner from the preceding two was evolved by Madisonville Community College, Kentucky (Ramsden and Watkins, 1980). This program did not present a given number of learning modules through which all students passed. Rather, the students would be working for competencies which would confer a grade of C, B, or A. Some students, according to the determination of a pre-course writing evaluation, might begin at an advanced level. Other students might spend a whole semester attempting to achieve the level of a C. Students achieving the level of A or B before the end of the semester might choose to withdraw. Within each level of competency, the students worked on four skill areas: words, sentences, paragraphs and themes. The students contracted with the instructor to take exit exams by a certain time. If a student could not maintain the contracted

schedule, he had to confer with the instructor. Continued records of the students' assignments were maintained in folders which they left with the instructors.

The description of the program did not mention the use of tutors or teaching equipment.

A Michigan program which was supplemented by tutors and a writing lab was developed for Kalamazoo Valley Community College (Corbin, 1980). The course followed eleven steps. The students had eight, twelve, or sixteen weeks to complete the steps. Text materials plus the assistance of tutors helped students to achieve the steps. When the students chose, they could take tests to demonstrate that they have achieved the levels. The students were awarded points for various scores (for example, 90% to 100% = 10 grade points). The final grades were awarded according to the points which the students had accumulated.

Each of the four programs which have been mentioned presented some common elements: (1) an effort to reconcile the sequential learning of some knowledge, such as grammar, with the improvement of some skills, such as sentence-writing or organization, which must be practiced; (2) an effort to individualize; (3) an effort to encourage students to progress at their own rates.

F. Self-Pacing Problems

The question of self-pacing is one which entails some complications of classroom procedure. Cross (1976) after noting "heart-wrenching" failures of some self-paced courses warned, "Students have both the privilege and burden of assuming major responsibility for their own learning, and some students are apparently not ready for or comfortable with that responsibility." Cross noted that, in a survey of faculty who had employed self-pacing, 71 percent reported difficulty with student procrastination. This problem seemed most severe with less accomplished students. Cross referred to several reports which indicated that poor to mediocre students withdrew in greater numbers from self-paced courses than did good students. Perhaps with such findings in mind, external consultant John Roueche recommended to the MCCC Basic Skills instructors that their students be given few choices of pacing. In any case, Cross commented, ". . . a good deal of work and understanding of the method are necessary for its successful implementation." The question of self-pacing was imperfectly resolved in the Basic Skills Writing course as further discussion will make clear.

G. Instructional Feedback to Students

One of the chief advantages of the self-pacing according to Cross, is frequent and consistent feedback which permits students to correct their performance as they work. Zucker, in reference to conventional remedial classes, wrote that

The students considered the quick return of many exercises and papers to be one of the most effective forms of teacher behavior. Furthermore, Kates's analysis of methods in Los Angeles writing classes and Gray and Slaughter's analysis of methods in the City University of New York re-emphasize the reasonable inference that an instructor's comments on many short assignments would be more helpful than fewer comments on more complicated work. One calculated feature of the MCCC Basic Skills writing course was the return, almost daily, of students' tests and papers.

H. Student Interests

An additional calculation of the MCCC course was to adapt materials to the students' interests, future classes, and vacations. External consultant Martha Maxwell had recommended that the lessons and exercises have some bearing on the students' consumer or recreation interests. She also touched upon an area of student anxiety: the writing requirements of their next classes and their jobs. To ignore those concerns would be to invite a reaction which was defined by Alschuler and Iveg (1973): "When students sense a discrepancy between what teachers require and what life demands, it undermines their trust in the wisdom of their teachers." On the positive side, Murphy (1974) referred to efforts to take advantage of students' vocational pursuits. One communications laboratory, which integrated academic content with vocational interests, reported higher grades for its students than for students given traditional lessons.

A Wisconsin survey (Farning and Boyce, 1976) went to considerable lengths to discover exactly what communication's competencies were actually needed by workers in eleven different industrial and service program areas. Four of these areas overlapped the vocational interests of many of the MCCC Basic Skills students. Partial lists of the competencies needed on the job, as noted by supervisors and vocation schools graduates, are given below. The partial lists note only those skills (a) which were practiced in the MCCC Basic Skills Writing course and (b) which were rated from "important" to "very important" by the respondents to the survey. The competencies are arranged from top to bottom in order of perceived importance.

1. Business Machine Supervisors

- complete job related forms
- distinguish main idea from supporting details
- when writing express ideas clearly and to the point
- gather and organize information
- proofread and edit written documents
- spell correctly
- punctuate correctly
- follow grammatical standards in writing

Business Machine Graduates

- spell correctly
- complete job related forms
- when writing express ideas clearly and to the point

2. Dental Assistant Supervisors

- complete job related forms
- spell correctly
- distinguish main ideas from supporting details
- follow grammatical standards in writing
- punctuate correctly
- compose an effective business letter
- when writing express ideas clearly and to the point
- write directions and procedures
- gather and organize information

Dental Assistant Graduates

- identify own strengths and weaknesses in communications skills
- spell correctly
- complete job related forms
- distinguish main ideas from supporting details

3. Medical Lab Assistant Supervisors

- spell correctly
- distinguish main idea from supporting details
- complete job related forms
- write technical reports
- when writing express ideas clearly and to the point
- gather and organize information

Medical Lab Assistant Graduates

- spell correctly
- complete job related forms
- write directions and procedures
- when writing express ideas clearly and to the point
- distinguish main ideas from supporting details

4. Electronics Servicing Supervisors

- when writing express ideas clearly and to the point
- distinguish main ideas from supporting details
- identify own strengths and weaknesses in communications skills
- gather and organize information

Electronics Servicing Graduates

- complete job related forms
- gather and organize information
- when writing express ideas clearly and to the point
- summarize materials
- distinguish main ideas from supporting details

Such job-related lists were obviously intended to help communications instructors of occupational students define appropriate objectives and plan effective lessons.

The instructors, of course, must be concerned not only with the skills which the students will need for their eventual jobs but also with the skills they will need for their vocational classes. A "consensus recommendation" of New York State administrators and instructors of developmental students was, "to the extent possible . . . the skills taught should be those needed by students in their program areas" (Cornell Institute for Research and Development in Occupational Areas, 1976). The outcome of this training in writing classes, as the survey defined it, should be "general improvement" which would give a student the chance to succeed in their next classes. This sort of outcome was planned for the MCCC Basic Skills Writing Course.

I. Summary

Discussions of developmental writing classes for developmental students have frequently addressed these inferences:

- 1.) The environment for these students should be supportive.
- 2.) The creation of a supportive environment requires continued interaction between teacher and students, between students and tutors, and between the students themselves.
- 3.) Lessons should be divided into small units.
- 4.) The goals of the units should be clearly defined.
- 5.) The goals of the units should be illustrated by many examples.
- 6.) Self-pacing is often recommended.
- 7.) A problem of self-pacing, particularly for lower-level students is procrastination.
- 8.) Student interests and their requirements for vocational classes and future employment should influence lesson planning.
- 9.) Student outcomes should be related to requirements of their programs and future employment.

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VIII. TEACHING THE WRITING COURSE

The methods of the writing course were governed by several considerations which had been encountered in the review of the research: (a) the creation of a supportive atmosphere, (b) the division of lessons into small units, (c) the attempt to incorporate self-pacing, (d) the provision of quick feedback, (e) the attempt to relate materials to the students' personal and vocational needs and interests, and (f) the attempt to reinforce lessons by integrating them with lessons in other Basic Skills courses.

A. Supportive Atmosphere

A supportive atmosphere was encouraged by assuring students, whenever appropriate, that they could learn and that many students before them had learned the same lessons with which they were struggling.

The students were further encouraged to check their work with the tutors and instructor at all points and to discuss their work with each other whenever class and lab procedures permitted. Some thought, prior to the semester, was given to creating peer groups which could assist one another. This procedure proved unnecessary because informal peer groups soon evolved. The peer groups became so supportive that they had to be cautioned not to help this or that member to the point of doing his work.

The class as a whole was involved whenever convenient. For example, no lesson on mechanics would be presented without eliciting answers and comments from every student present.

The lab periods permitted work with individual students. Most of the instructor's and tutors' time, during lab periods, was spent helping a variety of individuals with their particular pieces of writing. Again, the danger was that the helper might be lead into doing too much of a students' work.

The student would be given credit for each piece of work which he did, but each piece would not be given a grade. The student would be given several opportunities to practice with certain sorts of problems before he would commit himself to a paper or test which would be graded.

On some occasions, the student could choose to take a re-test, if he were not satisfied with a grade. Moreover, after a student had written an assignment for a grade, he would write a revision of the assignment to take advantage of the instructor's criticisms for another grade.

As much as possible, the student was encouraged to realize that he would learn by practicing and that practicing would not penalize him.

B. Divisions of Lessons into Small Units

For the first three-quarters of the semester, while the students were writing paragraphs, each writing assignment would be accompanied by these steps:

- 1.) A brief description of the kind of paragraph to be written.
- 2.) An explanation of how writing paragraph would help the student.
- 3.) A brief explanation of what the paragraph would require in addition to requirements of preceding paragraphs.
- 4.) The presentation of sample topics and discussions of those topics.
- 5.) The assignment of the topic sentence.
- 6.) The evaluation of the topic.
- 7.) The assignment of a short scratch outline.
- 8.) The presentation of sample outlines and worksheets involving outlining problems.
- 9.) The evaluation of the students' outline.
- 10.) The assignment of the paragraph.
- 11.) The presentation of sample paragraphs and worksheets involving writing problems.
- 12.) The evaluation of the paragraph.
- 13.) The assignment of the revisions.
- 14.) The evaluation of the revisions.

Each unit on mechanics would be accompanied by explanations of how the unit's lessons could be useful to the student in the future and how they should be applied to students' current writing. A unit would add lessons in a step-by-step fashion with several opportunities to review. Each lesson would be accompanied by several examples. As much as practical, the types of lessons and examples would be varied.

Before each test, the student would take a pre-test which would help him judge his capability at that point.

In the first half of the semester, the student would have some choice as to when he would take a test. If he did not do well, he might choose to take a re-test. This opportunity was withdrawn in the second half of the semester as the degree self-pacing declined.

C. Self-Pacing

The semester began with the hope that each student would progress at a pace which would be convenient for him. Soon, some students were "getting ahead" of others. This sort of "fast pacing" was not a great problem

although it obliged the instructor to device supplementary assignments and to work out supplementary activities for the faster students in the Programmed Learning Center and Computer Terminal Room.

However, some "slow-paced" students seemed to be falling so far behind that the lessons presented to the class as a whole did not bear upon what they were doing in the lab. For example, the instructor might be talking about writing one kind of paragraph while a few students were still working on a simpler kind.

Some troubles were compounded by inefficient bookkeeping. To help them keep track of their progress, the students were provided with an "Assignment Sheet" and a large-ring binder. The Assignment Sheet" was supposed to be the first insertion in the binder. Thereafter, each assignment was to be noted as it was given, and the class materials were to be added to the binder as they were distributed. Daily assignment sheets were distributed to help the student keep track of what had been passed out. Unfortunately, the materials weren't always added to the binder, materials and daily assignments were lost, and assignments weren't recorded. Students began to complain that they didn't know what they were supposed to be doing. They complained also that they were spending too much time noting assignments and straightening out their binders. Demoralization began to set in, especially among the least organized and most in need of help.

Self-pacing might not be an invalid theory, but a self-pacing system for a writing course must be the product of several semesters of accumulated materials and experience. A self-paced course for writers would require a wide variety of exercises which could be applied to each lesson and an iron-clad, carefully administered bookkeeping system.

Just before the mid-semester break, the instructor had a serious talk with the class. Most of the students seemed to favor more control by the instructor in terms of more specific deadlines and less personal bookkeeping. If gradually evolved, self-pacing may yet become part of an MCCC writing program; however, in the past semester it threatened to produce the sort of "heart wrenching" experience which K. Patricia Cross mentioned.

D. Feedback

The writing program did maintain a system of quick, constant feedback. This took the form not only of the personal commentary of the instructor and tutors in the lab periods but also of the daily return of exercises and writing assignments. Until the end of the semester, a paragraph or exercise would usually be returned the day after it had been turned in. Often, a tutor or the instructor could let a student know how he had performed on a test within an hour of the time he had taken it. This practice seemed to encourage student interest.

E. Relating Materials to Student Needs and Interests

Another effort which, according to student evaluations, seemed useful was that of relating writing exercises and mechanics lessons to the students' vocational and personal interests.

1. Some writing assignments were intended to help students gain vocational orientation. An early assignment was to analyze the requirements as listed in classified advertisements for a particular sort of job. A later assignment was to write a paragraph discussing the prospects, requirements, and rewards of a vocational field as they had been projected by the Occupational Outlook Handbook. A third assignment was to write a paragraph analyzing requirements for a vocational program as listed in MCCC's Academic Bulletin. A later assignment was to write a letter of application for a hypothetical position to accompany a resume.

Still other paragraphs took the form of responses to essay questions which were presented by beginning chapters from textbooks of the students' next courses. In the last weeks of the semester, the students wrote request letters and complaint letters which they mailed to actual recipients.

The theory behind almost all of the writing assignments throughout the semester was that the students would learn more about writing if they perceived the process to be one which had an authentic and easily recognized function in their lives as students and workers.

2. To serve that theory, some writing assignments were integrated with lessons from the other courses. The survey of classified ads corresponded to a lesson in the Introduction to Technical Careers course. The analysis of program requirements corresponded to work in the Counseling course. The problems of finding the answers to essay questions in textbooks in future classes paralleled lessons in the Reading/Study Skills course.

The hope was that assignments were integrated often enough to underline the usefulness of writing.

3. Lessons in the mechanics of English could not always be given such immediate application to the students' concerns. Nevertheless, an effort was made, throughout most of the semester, to make a connection.

Early in the semester, the students were repeatedly told that they would have to be patient with lessons on sentence elements because those lessons would help them to learn about punctuation. Punctuation lessons required less patience from the class, as a whole. Several of the students had learned that they would be taking vocational courses, such as secretarial practices, which would require an extensive knowledge of punctuation. In fact, one of the tutors was currently taking a secretarial course, so she could show the students examples of the much more complicated exercises she was being assigned.

Punctuation lessons gave the instructor an opportunity to discuss repeatedly the ways in which sentences work and the ways in which ideas can be related within sentences. This method proved more practical, this time, than exercises in sentence combining. During the preceding semester, the instructor had tried sentence combining in regular remedial classes with fair success. The Basic Skills students, however, did not seem to have developed enough of a "sentence sense," in many cases, to be sure when a combination was "good." Another unfortunate circumstance was that the sentences provided by the text lent themselves to double meanings which did not assist the serious purpose of the class. The instructor did attempt to make use of the techniques of sentence combining by inventing some exercises; however, most of them were incorporated into lessons on punctuation.

The punctuation lessons were pursued beyond the limits of absolute necessity for some students. For instance, the future draftsman may not have to use semicolons very often. On the other hand, the medical office assistants may have to. In one case, such lessons as the ones on semicolons gave the instructor further opportunities to explain how ideas could be compared or contrasted or expressed as components of a sequence.

This convenience prompted the instructor to give most of the time spent on mechanics to punctuation. Other areas might have been given more attention, but they did not seem to justify the time which would have to be spent on them. Spelling was a problem for some students. In their course evaluation, a few students remarked that they would have liked some spelling lessons. In theory, the students were supposed to note their misspellings on a sheet provided for that purpose. They could, therefore, become aware of their individual misspellings and eliminate them. Some students did follow this practice. A general impression was that the students' spelling problems diminished as they practiced writing.

Nevertheless, some students' spelling did not seem to improve. On some occasions, they were given special attention by tutors, but the attention could not be made systematic. Spelling does not lend itself well to systematic lessons. To teach spelling would mean to give time to such matters as roots and prefixes which most of the students did not need to learn and which could have been spent more usefully. Such was the instructor's judgment during the progress of the course.

In addition to spelling, another elementary problem for some students was handwriting. In most cases, the handwriting of the students seemed to improve as they practiced writing. In a few cases, the students were warned that their handwriting might cause future instructors to discount the value of their ideas. The instructor would have liked to give these few some supplementary work in calligraphy. Again, not enough time seemed available.

F. Comparative Weight of Mechanics and Writing

If a choice had to be made between giving time to writing or giving it to mechanics, the decision was always in favor of writing. The theory was that the final product was always most important and that the most important function of mechanics lessons was to improve writing.

Each time a student turned in a piece of writing, he put it in a flap folder which included all the preceding pieces of writing. An important factor in the instructors' evaluation would be whether a piece of writing had reduced the mechanical weaknesses of preceding writing.

A student would be held responsible for only those mechanical problems which had been discussed in class. Fragments, run-ons, and misspellings were criticized from the beginning. But the omission of a comma to punctuate an introductory expression would not be noted unless that comma use had been studied. This common system seemed better than either overwhelming a student with all sorts of corrections or ignoring mechanical faults almost altogether.

During class period, about half the time would be given to discussion of mechanics; but during the lab period, most of the time was spent on writing assignments.

G. Texts and Materials

The students began the course with the following texts:

Hart, Kathleen A. and Alice C. Hein.

Sentences, Paragraphs, and Essays: An Integrated Approach.

Boston: Little, Brown and Company, 1979

Krevisky, Joseph and Gordon L. Linfield.

The Bad Speller's Dictionary. New York:

Random House, 1978.

Morehead, Philip D. Roget's College Thesaurus in Dictionary Form.

New York: Signet, 1978

The class also used the American Heritage Dictionary in conjunction with the Reading/Study Skills course.

Materials included a large three-ring binder in which the students were supposed to keep the mimeographed handouts which were distributed in class. In addition, the students were given flap folders in which they were supposed to keep all their writing exercises.

H. Chronology

1/19 The importance of writing to the students' future courses and jobs was emphasized. The students were given copies of writing assignments which follow introductory chapters in the texts of their next courses.

The students were directed, as a first writing assignment, to interview other students, to take notes, and to write an impromptu paragraph.

1/20 The impromptu paragraphs were returned. The paragraphs were not graded, but they had been criticized for fragments, run-ons, and misspellings. The nature of fragments and run-ons was explained. The students were told they will be revising the paragraphs.

1/21 Mechanics: The class was given examples of fragments and run-ons written by students of past semesters. Revisions were discussed. Sentence Combining was introduced. The class worked through some combinations of sentence sets in the text.

Writing: During the lab period, the students revised the first-day paragraphs.

1/22 This was the first of the Thursday three-hour sessions.

Writing: The revised first-day paragraphs were returned after having been graded. Students were given assignment sheets on which they were to record completed assignments. They were also given spelling sheets on which they were to record misspellings. A new assignment of a topic for a paragraph was given: "things and need for a simple task." This assignment introduced the concept of analysis in a simple way. Examples of topic sentences were given to the students.

Mechanics: More examples of sentence fragments were passed out and discussed.

Sets of sentences for combining were passed out. These sets had been originated by the instructor to apply to the vocational interests expressed by the students. For the day, the students were to combine one set of sentences and to work out the topic sentence for the paragraph "Things I need for a simple task." A simple task might be painting a garage door, or baking some cookies.

1/26-1/29

On 1/26 the students were given the Written English Expression Test.

Writing: Students were encouraged to work at their own pace. But during this week, most of them had completed these assignments: a scratch outline of the "Things I need for a Simple Task" paragraph, a first version of the paragraph, a revision of the paragraph.

To assist the students, these materials were distributed and discussed: sample outline divisions and sample paragraphs.

Mechanics: The students worked at sentence combining with sets from the text and with sets the instructor had originated. Students also worked with fragments and run-ons which past students had written. If the students felt ready for it, they were invited to take a fragment and run-on test on Thursday.

2/2 - 2/5

Writing: Most of the students developed a paragraph on "Steps of a Simple Task." This paragraph was related to the preceding paragraph "Things I need for a Simple Task." The "Steps" paragraph added the consideration of transition. This paragraph provided a simple introduction to the concept of transition because transitions indicating a sequence were relatively easy to devise. To assist the students, these handouts were distributed and discussed: Sample topics, sample outlines, sample transitions, transitional exercises, and sample paragraphs.

Mechanics: The students were given exercises and assignments on subjects and subject parts and verbs and verb parts. Some of these were in the text, and some were originated by the instructor. The students also did

some sentences combining exercises in the text and on the instructor's worksheets.

2/9 - 2/12

Most students proceeded through these assignments:

Writing: They were directed to make copies of notes they had taken for their Introduction to Careers Course. The notes were derived from three classified advertisements for a job in which a student might be interested. The students were to list and compare the requirements for the position. Then the student was to devise a topic from the notes, create an outline, and write a paragraph. The assignment served to introduce the concept of sequence. In addition, it presented some practice in translating notes into sentences. Transitions from point to point were a little more difficult for this paragraph.

To assist the student, these handouts were distributed: sample sets of notes, sample topics, sample outline divisions, and sample paragraphs. These were originated by the instructor to provide models for the items which the students were developing.

Mechanics: The students worked with exercises on direct objects and complements from the text and on the instructor's handouts. If they felt ready for it, they took a sentence elements test. Most students preferred to do more exercises before taking the test.

2/16-2/26

Most of the students proceeded through these assignments:

Writing: They followed a direction sheet to make use of an MCCC Academic Bulletin. They located a program which interested them. They identified the courses which they would be taking in the Fall semester. Then they located and took notes from the course descriptions. Their notes were to be pertinent to the topic of "Things I Will Be Doing" (such as practicing with a computer or learning medical terminology). Subsequently, they would develop an outline and paragraph.

This was a difficult series of assignments for this stage of the semester. It was assigned so early to work with lessons in the counseling course.

The assignments gave the students practice in extracting pertinent notes from sometimes complicated course descriptions, in making sentences out of sometimes complicated notes, of organizing points into a sequence, and in creating fairly complicated sentences.

This assignment seemed useful, but it exaggerated the spread between the faster and slower-paced students.

To assist the students these materials were originated or copied: sample programs, sample course descriptions, sample notes, sample outlines, transition exercises, and sample paragraphs.

Mechanics: Most of the students took the sentence elements test. If they did badly they were invited to study their first test and take another sentence elements test.

They also worked with commas to punctuate introductory expressions. The type of introductory expressions were introduced in stages as one-word expressions, phrases, and clauses. Most of the students took a test on commas to punctuate introductory expressions by Wednesday, February 25. If they desired, they could take a re-test. The tests obliged to insert commas into

written sentences and to create sentences including introductory expressions.

3/2 - 3/12

Most of the students accomplished these assignments!

Writing: They completed a worksheet which guided them through an examination of the Occupational Outlook Handbook. They located the Handbook's description of occupational areas which interested them. Each student located pertinent points which described the future of an occupation, the training, and the probable rewards for that occupation. Then the student derived a topic and produced an outline and a paragraph from notes.

This assignment again obliged each student to locate pertinent points, to make useful notes, to produce a reasonable sequence of points, and to connect them by transitions which were sometimes fairly complicated.

This assignment was another rather demanding one. It covered some ideas which had been touched upon in the ITC course.

To assist the students, these materials were copied or originated: pages from the Handbook, a worksheet to guide the students through the Handbook, sample notes, sample outlines, transitional exercises, and sample paragraphs.

Mechanics: From 3/2 - 3/5 most of the class concentrated on commas to divide independent clauses.

The class discussions considered not only where the commas should be placed in compound sentences but why two ideas should be put together in a compound sentence. Most students took the test covering commas for introductory expressions, commas to divide independent clauses and the origination of compound sentences on 3/5.

From 3/9-3/12 they discussed and worked with sentences including commas to punctuate parenthetical expressions. Parenthetical expressions were introduced in stages as one-word expressions, phrases, and nonrestrictive clauses. Most students took the test including commas for parenthetical expressions plus all the preceding comma uses on 3/12.

That Thursday was the last class period before the Spring semester break. At that point, the instructor discussed its progress with the class. Many students felt that they might concentrate better if they were given specific deadlines for their work. They felt that they had sometimes become confused about which assignments to work on. Furthermore, they felt that their personal bookkeeping had become a burden. The instructor agreed to set deadlines for future assignments.

The Spring break was followed by the Human Potential Workshop, led by counselors, which took most of the following week. So the instructor didn't hold a writing class again until 3/26.

3/16-3/26

Break and Human Potential Workshop

During the break, copies were made of introductory chapters in texts which the students would be using in the first semester of the vocational programs. The texts were to be used for basic electronics, for an introduction to drafting, for an introduction to business, for an introduction to biology, for an introduction to dental office practices, and for an introduction to medical office practices.

The questions at the ends of the chapters could be characterized in these ways:

- a.) "Review questions" which could be answered merely by locating the correct detail in the chapter and paraphrasing the words of the text.
- b.) "Definitions" which could be answered by locating the use of the words in the text and by stating their meaning and providing brief illustrations.
- c.) "Thought" questions which required locating an appropriate passage in the text and making deductions from it.

3/26 - 4/2

Writing: Each student was given a copy of a chapter he would presumably be working with at the beginning of the next semester. The student was also assigned a "review" question at the end of the chapter. After the student had completed the "review" question, he was assigned a "definition" question. Most of the students completed both questions and their revisions within a week.

To assist students, the following materials were copied or originated: the text chapters, chapters of other texts for class discussion, sample notes, sample outlines, sample answers, alternative answers for discussion.

Mechanics: The class discussed commas to punctuate series and parallel phrasing of items in series. A test on these words plus preceding usages was given on 4/2.

4/6 - 4/9

Writing: The students worked on their first "thought question." The deadline was set for 4/9. To assist the students, several materials were copied or originated: questions from texts, sample notes, sample outlines, a good answer which one of the students had written, a series of alternative answers for comparative evaluations.

Mechanics: The students discussed semicolons, commas, and parallelism. Several sets of material were distributed. The test covering these usages was given on 4/9.

4/13-4/16

Writing: The students developed answers to their second, more difficult, "thought questions." The deadline was 4/16. Sample questions, notes, and answers were distributed and discussed.

Mechanics: The students discussed colons, semicolons, commas and the patterns with which these punctuation marks were used. They assigned sentences to originate. The test was given on 4/16.

4/20 - 4/23

A unit on common types of business letters was begun for most of the students. The letters were short enough to be written and revised quickly. But they were divided into beginning paragraphs, middle paragraphs, and end paragraphs. So they were the first pieces of writing which required subdividing. The first letter was a "request letter." The students were

obliged to define actual requests which would be useful to them. Some examples were requests for information on the GED test and dates, requests for information on training programs in local hospitals, and a request for information on the legal use of nets in Lake St. Clair.

After the "request letters" were written, they were typed by a tutor and a couple of students and mailed. Several requests received replies by the end of the semester.

Sample letters, good and bad, were copied or originated to assist the students.

Mechanics: The class discussed the uses of apostrophes and briefly reviewed preceding discussions. Worksheets were originated to clarify the discussions. The test was given on 4/23.

4/27-4/30

"Complaint letters" were written. The students were instructed to be positive in their complaints and to specify the redress they were requesting.

Again, the letters were typed and mailed. Some favorable replies were received by the end of the semester. In one case, a cosmetics manufacturer gave a full refund on a product. In another case, a city department planted a tree to replace one it had removed.

As for earlier assignments, worksheets and writing samples were developed to aid the students.

Mechanics: The class studied personal pronouns, agreement, and subjective and objective cases of pronouns. Worksheets and exercises were originated to assist them. A test was given on 4/30.

5/4 - 5/7

Writing: The students wrote "letters of application." These were written as though they had completed their programs. Although the letters were not mailed, they were, in most cases, directed to actual employers. Worksheets and sample letters were originated or copied to provide models.

Mechanics: The students studied problem pronouns and references such as "it," "this" "that," and "which." Exercises and worksheets assisted the class. A test was given on 5/7.

5/11-5/13

Writing: Students wrote resumes, as though they were applying for jobs at the ends of their vocational programs. Sample resumes provided models.

Mechanics: The class reviewed the mechanics lessons it had practiced throughout the semester.

Last Day, 5/14

Writing: Each student interviewed another student. The interviewer asked two questions:

"What do you think that you have gotten out of the Basic Skills program?" and "What more do you think that you could have gotten out of the program?"

The interviewer then wrote a two paragraph paper based on the responses. The final papers provided comparisons to the first-day papers and elicited evaluations to supplement those of the student evaluation sheet.

Mechanics: The students were given the Written English Expression Placement Test. The results demonstrated a significant gain over the testing administered on 2/2.

I. Student Evaluations

- The students apparently felt that they had learned to find answers to questions in a piece of writing and to organize those answers. Furthermore, they seemed to consider the lessons in those skills to have been useful.
(SA means "strongly agree"; A means "agree"; D means "disagree"; and SD means "strongly disagree.")

TABLE 17
Finding and Organizing Information

	My skills in this area have improved.				I need additional instruction in this area.			
	SA	A	D	SD	SA	A	D	SD
Finding information needed from a piece of reading.	7	10	0	0	6	9	2	0
Organizing information taken from a piece or pieces of reading.	6	11	0	0	4	11	2	0

This unit will be useful to me in my future training.

SA	A	D	SD
10	7	0	0
6	10	0	0

This unit should be included the next time this program is offered to students.

SA	A	D	SD
13	4	0	0
13	4	0	0

Most of the students thought that they had improved their skills in answering questions, in writing, like those which they would be asked in future classes. However, most would have liked more work with these skills.

TABLE 18
Writing Answers and Questions

	My skills in this area have improved.				I need additional instruction in this area.			
	SA	A	D	SD	SA	A	D	SD
Answering questions in writing.	7	9	1	0	5	10	1	0

Apparently, the students considered their lessons in this area to have been useful.

TABLE 19
Usefulness of Unit on Writing Answers

This unit will be useful to me in my future training.

SA	A	D	SD
5	10	0	0

This unit should be included the next time this program is offered to students.

SA	A	D	SD
10	6	0	0

3. The course consistently emphasized the importance of making clear what one point had to do with the next. To improve student skills in connecting ideas, they were given many lessons in transition. Evidently, the students thought that they had learned something about transition and that they knew that they should learn more. In addition, they considered the lessons in transition to have been useful.

TABLE 20
Connecting Ideas

Relating one idea to another

My skills in this area have improved.

SA	A	D	SD
7	10	0	0

I need additional instruction in this area

SA	A	D	SD
5	11	0	1

This unit will be useful to me in my future training

SA	A	D	SD
7	9	0	0

This unit should be included the next time this program is offered to students.

SA	A	D	SD
13	4	0	0

4. Punctuation was presented as a method of making sentences clear. Most students thought that their punctuation skills had improved, but only one thought that she needed no more instruction.

TABLE 21
Punctuation.

	My skills in this area have improved.				I need additional instruction in this area			
	SA	A	D	SD	SA	A	D	SD
Punctuating sentences correctly.	7	7	3	0	8	8	0	1

All of the students agreed that the punctuation lessons had been useful

TABLE 22
Usefulness of Punctuation Units

	This unit will be useful to me in my future training.				This unit should be included the next time this program is offered to students.			
	SA	A	D	SD	SA	A	D	SD
	10	5	0	0	15	1	0	0

5. A fundamental concern was helping the students to write more clearly. All of the students seemed to think that their sentences had become more clear and that their lessons had helped them become clearer writers.

TABLE 23
Writing Clear Sentences

	My skills in this area have improved.				I need additional instruction in this area			
	SA	A	D	SD	SA	A	D	SD
Putting ideas into clear sentences.	6	11	0	0	8	9	0	0
	This unit will be useful to me in my future training.				This unit should be included the next time this program is offered to students.			
	SA	A	D	SD	SA	A	D	SD
	7	9	0	0	12	5	0	0

6. In the first half of the course, some attempt was made to employ methods of self-pacing. This attempt was de-emphasized in favor of deadline in the last half. Student opinions on self-pacing and deadlines were divided. In fact, one set of responses seems to contradict the other.

TABLE 24
Self-Pacing

	SA	A	D	SD
1.) working at my own pace was better than working to meet deadlines.	4	8	4	1
2.) working to meet deadlines was better than working at my own pace.	1	8	6	2

7. Another divided and rather contradictory set of responses was elicited by a pair of questions concerning re-testing. More re-testing was done in the first half of the semester than in the last half.

TABLE 25
Re-Testing

	SA	A	D	SD
being able to repeat a test I had not done well on was better than being forced to take the test once.	5	9	2	1
being forced to take the test once only was better than being able to repeat tests.	1	7	6	3

8. Throughout the semester, detailed class materials were distributed daily. The text was used infrequently. In the last half of the semester, the text could not be adapted to class lessons, so it was abandoned entirely. Apparently, the students appreciated the detailed help given by the materials. However, some would have preferred a textbook.

TABLE 26
Class Materials

	SA	A	D	SD
using detailed class materials was helpful	6	11	0	0
using textbooks and taking notes would be better	1	6	8	2

- 9. One of the greatest efforts of the course was to relate materials to future classes and jobs. The students unanimously agreed that this attempt was useful.

TABLE 27
Job-Related Materials

using materials which related to future jobs and classes was helpful.

using materials which related to future jobs and classes did not make any difference.

SA	A	D	SD
.6	11		
		13	4

- 10. The last division of the students evaluation form attempted to elicit suggestions for improvements. A variety of suggestions were applied to the Composition course:

"Future training could be improved in the Composition course by . . ."

- (4) - changing nothing
- (1) - allotting more time for this course
- (1) - providing more lab time
- (3) - including spelling lessons
- (1) - spending more time on preparing a resume
- (1) - spending more time on difficult areas of composition, e.g., mechanics
- (1) - reducing the number of writing assignments
- (1) - including more group structure and less individualization
- [2] - (No comment)
- [4] - (Praise for instructor and/or course)

J. Comments on Last-Day Impromptu.

On the last-day of the course, the students wrote a paper which prompted further evaluations of program components.

Ten favorable comments were made on elements of the writing class. Some are quoted here.

("What do you think you have gotten out of the Basic Skills Program?")

1. "[She] believes that her writing skills have improved greatly"
2. "A more enjoyable course to [him] was English in which he increased his punctuation and improved his writing ability."
3. "Unfortunately English is not one of [her] favorite subjects, but she does think she learned some useful skills like writing business letters and learning how to use punctuation correctly. "
4. "Consequently, [he] improved his ability on how to organize and write a complaint or business letter. Also, [he learned] the basic steps on how to set up a resume which will help him in a career field."

("What more do you think that you could have gotten out of the program?")

Five students commented that they would have wanted "more English." Of these, two commented that they could have used more vocabulary work, and one commented that he could have used more spelling work.

K. Tutors' Evaluations

In some respects, the tutors' evaluations differed from those of the students. The sharpest difference was in regard to "self-pacing." The students were divided about "self-pacing," though most favored it. Contrarily, the tutors "strongly disagreed" that for the student to work at his own pace "was better than working to meet deadlines." Moreover, the tutors "strongly agreed" that working to meet deadlines was better than self-pacing. The tutors likewise "agreed" that "being forced to take the test only once was better than being able to repeat tests." This judgment contradicted the judgment of the majority of students.

In regard to class materials, the tutors "strongly agreed" that using detailed class materials was helpful." This judgment corresponded to that of the students. However, some students thought that "using textbooks and taking notes would be better." The tutors "disagreed" and added the note, "not for this class."

Nevertheless, the tutors "agreed" with the unanimous judgment of the class that "using materials which related to future jobs and classes was helpful."

The degree to which students improved their writing might be illustrated by comparing a few paragraphs written on the first day of the class to paragraphs written by the same students on the last day of the class.

On the first day of the class, January 19, the students were given a mimeographed sheet with these instructions:

INTERVIEW ASSIGNMENT

This assignment will help you get to know some of the other people in your class, and it will also help you to begin to practice your writing.

(1) When your turn comes, interview the person who is sitting to your right. Take notes. You will be interested in the person's

- (a) Name
- (b) goals
- (c) job experience
- (d) recreational interests, and
- (e) anything which the person may care to add to describe himself or herself to other people in the class.

(2) After the interview is completed, you will use your notes to give a brief introduction to the other people in the class. Later today, you will use the notes to write a paragraph on the person you have interviewed.

The paragraphs were written in class. The students could have taken up to an hour to write them, though most finished well before that time. They could have asked for help, though most didn't.

At the end of the sixteen-week course, the students were given the following set of directions:

Interview another student for 15 minutes. Take notes. The questions which the other student will answer are these:

- (a) What do you think that you have gotten out of the Basic Skills Program?
- (b) What more do you think that you could have gotten out of the program?

Give your interview, answering the same questions, to another student. Take 15 minutes. The notes will become the basis for your last paper. The paper will be graded. You will not be given help.

The students wrote the paragraphs in class. Most were written within an hour. However, the instructor was busy with makeup tests and other matters,

so he had no opportunity to monitor the time. The students were free to use dictionaries or to refer to comments on past papers.

In general, the differences between the first and last papers were these:

(a) The last papers were longer.

(b) The last papers included fewer run-ons and fragments although a few persisted.

(c) Other punctuation was a little more sophisticated in the final papers.

(d) The last papers included fewer misspellings, although several occurred.

(e) The development of the final papers was more coherent.

The first set of papers quoted below was written by a student who made considerable progress. She was a young person who had graduated from high school only a year before, so perhaps she had a relatively less difficult time recalling past lessons than the older students.

She had the highest score on the Written English Expression Placement Test - achieving the 23rd percentile. She raised that score to the 61st percentile on the last-day post-test.

Here is her first paragraph:

The woman I interviewed is (), she's not really sure about her career goals she hasn't decided between these two occupations quite yet, they are clerical and or drafting. Her recreational interests are sewing, gardening, and biking.

She's married and has one daughter who is 19 years old and she lives in Sterling Height. The only job experience () had is a cashier and that was several years ago.

Here is the last paper:

(The student) feels that she learned a lot from the Basic Skills Program. (Her) most favorite class is math. She likes math because she feels that it comes easier to her than any other subject. However, she would have liked it even more if the course had expanded into even harder math like algebra, geometry, and trigonometry. Even though reading and study skills is a necessary subject for future technical courses, (she) doesn't like it as much as math. Although she does feel she has improved her vocabulary and reading skills. Unfortunately, English is not one of (her) favorite subjects, but she does think she learned some useful skills like writing business letters and learning how to use basic punctuation correctly.

(She) feels she might have learned more if the introductory to careers class would have been shortened to only meeting once every other week. There could have been extra time in all three classes to study more. In general, (she) feels she learned a lot from the Basic Skills Program, and believes that it will help in future courses.

The next student was an older woman. She had been out of school for over twenty years, had been a mother several times, and had several jobs as a bar maid and waitress.

She had achieved the 18th percentile ranking on the Written English Expression Placement test which was administered the first day of the class. She raised that score to the 35th percentile on the last day.

Here is the paper which she wrote on the first day.

(The student's) reason for being in M.CCC is to further his education, to get a better job such as a Lawyer or a Male Nurse.
In his past he has worked as a tool and die Apprentice for Two-Years.
Before this he worked with the Public in Sales from five to nine Years.
Then to a Security Guard for Two years.
His Recreational Interests are. Drag Racing, Horse Back Riding, and Camping.

Here is the paper which she wrote on the last day. The paper is a little out of focus because she wrote it in the first person as though the student whom she was interviewing were speaking.

The basic skills program has given me an opportunity to increase my knowledge of english and reading. My reading has improved and now I understand what I read. I have obtained dictionary skills that were unknown to me in my previous education. My math ability has increased with a new understanding of division and fraction.
Basic skills have given me a better outlook on the future, with a better prospective of the current job market. I would consider the basic skills program an asset to my educational background.

The first two students clearly made progress. But the next one did not, apparently, progress very far.

He was a young man, a few years out of high school, who had held a few manual jobs. Part of his problem was physical. One of his eyes would not focus.

Another problem was attendance. He had missed one solid week, plus a number of other times. At one point, he was on the brink of being dropped from the program. He missed the standardized test given on the first day, and he scored only in the 5th percentile on the last day.

(The student) came to Ceta to start a drafting course, he was working at edison training tree for five yaers, then got lay off. He's marred an has two Kids a Boy a girl. He like to paly footBall an pool.

Here is his last paper.

What (the student) got out of the basic skille program. (He) has a batter understanding of math, english, and reading than he did before he started (He) also has a better attitude towards school. he's motivation is better too. from the school that (he) has gotten he knows want goal that he has got to go for in life. becace of these classis (he) will be better prepared for hes up coming classis. (He) also saids that if he was going thourh the Basic skill program again he wound make the room biger. and make every subjeck in a difford room. he said the program was a good thing

The examples which have been quoted were intended to illustrate three kinds of writing progress. The writer of the first set of paragraphs seems competent to succeed in her next vocational courses.

The writer of the second set of paragraphs will have a more difficult time, but she may succeed because of her dogged determination.

The writer of the third set - who is not without intelligence - may succeed in his technical classes, but he doesn't seem to have learned enough about writing to help him greatly.

M. Changes in Writing Test Scores from Pretest to Posttest

The Written English Expression Placement Test was administered to the students in the second week of the writing class. The same test was repeated on the last day of the class. Sixteen of the students took both the pre- and post test. Most scored gains. The mean score of those who took both the pre and post-test increased significantly.

A table of percentile rankings for both pre- and post-tests is presented below. (The percentile rankings are based on national norms. A percentile rank indicates what percent of incoming college students would score below that rank.)

TABLE 28
Pre-Posttest WEEPT Scores

	Pre-Test Percentile	Post-Test Percentile	Change
1.	46	dropped	--
2.	46	61	+15
3.	45	12	-33
4.	26	51	+25
5.	26	26	0
6.	22	dropped	--
7.	22	15	-7
8.	18	51	+33
9.	18	40	+22
10.	18	35	+17
11.	18	26	+8
12.	18	26	+8
13.	12	26	+23
14.	12	15	+3
15.	9	12	+3
16.	7	30	+23
17.	5	22	+17
18.	no pre-test	5	--
19.	5	dropped	--
20.	4	22	+18
21.	4	dropped	--
22.	2	dropped	--
23.	1	dropped	--

Comments

- A.) Of the sixteen students who took both pre-and post-tests, thirteen scored gains, two scored losses, and one scored even.
- B.) The mean of the raw score of the sixteen pre-tests was 18.38. The mean of the raw score for the 16 post-tests was 21.44. The gain was 3.06. The gain is statistically significant.

N. Comparison of English 005 Sections to Basic Skills Writing Class

The Basic Skills writing class can be compared to English 005 in some respects. Both types of classes are developmental. Both are intended to increase writing competence so that their students can succeed in future classes. The two students of the Basic Skills class who definitely intend to take more English were counseled to enroll in the English 118 composition class just as most successful students of English 005 will do.

Yet English 005 sections cannot be used, in a strict sense, as control groups for the Basic Skills writing class. Too many differences are obvious. The beginning achievement levels of the English 005 students range well above those of the Basic Skills group. Many of the English 005's have general education goals while the Basic Skills goals are uniformly vocational.

On the other hand, the English 005 students and Basic Skills students were expected to cover about the same ground. Though the nature of lessons and assignments usually varied, the students of both classes were judged by approximately the same standards at the conclusions of their courses. A grade would be subtracted for a run-on or fragment in a piece of writing for Basic Skills just as it would for a similar error in a paper for English 005. In the judgment of the instructor, "A" work at the end of the course in Basic Skills would have been "A" work at the end of English 005; "C" work at the end of Basic Skills would have been "C" work at the end of English 005.

The differences would be that the Basic Skills students would have progressed through more steps to the test or writing, and that they would have received more personal assistance. Moreover, the instructor and tutors would have done more to relate the work to the student's future classes and vocations.

Comparisons, therefore, may not be strictly scientific, but they may be informative.

In addition to the Basic Skills writing class, Morton taught two English 005 sections in the Spring 1981 semester. Some comparisons of the English 005 sections to the Basic Skills sections can be made in terms of retention and pre-post test scores.

1. Retention

Percentages of retention provide the easiest comparison. By coincidence, the number of students who enrolled in the English 005 sections, and who actually did any of the assignments, was exactly double that of the Basic Skills students. The table below compares the percentages of success.

English 005

48 undertook course work
28 completed course with a passing grade of "D" or better
58.33% successful

Basic Skills

164
24 undertook course work
18 completed course with a passing grade of "C" or better
75% successful

One might comment that the Basic Skills students had a more apparent motivation to persist: They were paid to attend class. Nevertheless, they had no guarantee that the day-to-day rigor of classwork would eventually improve their lives more than trying to find jobs or even getting some other form of government assistance. Moreover, other Basic Skills students had further to go than the English 005 students.

2. Comparison of Pretests

A comparison of pre-tests may illustrate the difference between the two types of students. The Basic Skills and English 005 students were given the Written English Expression Placement Test in the first week of the semester. The achievement levels may be compared in the table below. (The numbers of students who took the test is lower than the number who undertook the course-work because of absences and late enrollments.)

	(N)	Mean of Pre-test raw Scores
ENG 005	41	20.51
Basic Skills	22	17.50

The difference in the pre-test means is significant at the .025 level.

If the means of the pre-test raw scores were rounded off to 21 and 18 and translated into percentile rankings, the differences might become more clear. (The rankings are derived from national norms.)

	<u>Percentile ranking</u>
ENG 005	26%
Basic Skills	15%

3. Comparative Gains in Scores

The students of both types of classes, who took both the pre-and post-tests made approximately equal gains in raw scores.

TABLE 29
Comparative Gains in WEEPT Scores

	(N)	Mean of Pretest Raw Score	Mean of Posttest Raw Score	Gain in Mean
ENG 005	29	20.55	23.83	+3.28
Basic Skills	16	18.38	21.44	+3.06

The gains for both the English 005 group and the Basic Skills group are statistically significant at the .005 level. However, the difference in the gains is not significant.

O. Summary of Discussion of Writing Class

- A.) The mean pre-posttest raw scores on the Written English Expression test demonstrated a significant gain, at the .005 level, for the Basic Skills writing class.
- B.) The mean pretest raw score of the Basic Skills writing class was significantly lower, at the .025 level, than that of ENG 005 classes.
- C.) The ENG 005 classes and the Basic Skills group made comparable gains, and the differences in the gains were not statistically significant.
- D.) The Basic Skills group retained a higher percentage of students (75%) than did the ENG 005 classes to which they were compared (58.33%).
- E.) Most of the Basic Skills students' papers demonstrated progress in the areas of organization, sentence construction, punctuation, and spelling.
- F.) The students' evaluation of the class materials expressed the unanimous judgment that adapting the materials to vocational interests was helpful. The tutors' evaluations agreed.

- G.) Though judgments were divided, the majority of students thought that self-pacing techniques were more helpful than a system of deadlines. The tutors sharply disagreed.
- H.) The accumulation of materials and the system of record keeping for the class was not fully enough developed to permit a successful experience of true self-pacing for an entire semester.
- I.) The division of lessons into small gradually incremental units seemed to be useful.
- J.) The creation of a "supportive" atmosphere seemed to be useful.
- K.) Consistent feedback in the form of personal interchange and written comments appeared to be useful.
- L.) Almost all of the students' evaluations expressed the judgments that they had progressed in the areas of writing clear sentences, punctuating correctly, connecting ideas, writing clear answers to questions, and finding answers in pieces of reading.

IX REVIEW OF RELEVANT RESEARCH - DEVELOPMENTAL MATHEMATICS

Developmental mathematics comprises a significant portion of the mathematics enrollments in two-year colleges in the United States.

A. Developmental Enrollments

Trillon, Hecht, and Akst (1980) cited a survey conducted by the American Mathematical Society which revealed that 44 percent of all Mathematics enrollments in two-year colleges were in arithmetic and high school algebra. Similar results were recorded by Beckwith (1980) who found that introductory and intermediate mathematics typically comprised 27 percent of the mathematics courses offered while accounting for 44 percent of the mathematics sections. In the 104 institutions surveyed by Baldwin (1975), 91 percent offered a developmental mathematics course.

B. Problems of Teaching Developmental Mathematics

Successfully teaching a developmental mathematics class is a formidable challenge. Baldwin (1975) found that many developmental students have poor study habits, poor self-images, histories of failure, and a dislike for mathematics. Beckwith (1980) found the completion rate for mathematics courses to be the lowest of all the science disciplines surveyed, and the completion rate for developmental mathematics courses was lower than the completion rate for regular mathematics courses. Stein (1972) estimated that the attrition rate in a typical mathematics class to be between 40 percent and 60 percent.

The literature on developmental mathematics highlights several topics the two-year college mathematics community has identified in confronting this challenge. These topics include content of developmental mathematics, placement of students, grades and credit, and instructional practices.

C. Content of Developmental Mathematics

The determination of which courses are developmental varied from one institution to the next. Some colleges considered courses in intermediate algebra and geometry developmental while other colleges did not. There was virtual consensus, however, that arithmetic and beginning algebra were developmental. Baldwin (1975) reported 89 percent of the institutions offered elementary algebra and 84 percent offered arithmetic. Even within the bounds of a single course, the content differed slightly. For example, an institution which viewed the primary reason for having an arithmetic course as being to prepare students for everyday life might include different topics and provide different experiences in the course than an institution which viewed arithmetic as a preparation for elementary algebra.

D. Placement in Developmental Mathematics

Students were placed into developmental mathematics courses by a variety of methods. Baldwin (1975) reported voluntary enrollment, high school mathematics grades, interviews, teacher referrals, department placement tests, and standardized placement tests were used (in decreasing order of utility) to place students in developmental mathematics courses. Pearlman (1977) cited several "successful" developmental mathematics programs which

used placement testing and suggested that investigations be conducted to determine if there were a correlation between successful programs and placement testing.

E. Credit and Grades

Colleges vary on the issue of granting credit for developmental mathematics courses. Baldwin's (1975) survey revealed that 66 percent of the colleges offered credit for developmental mathematics courses. However, many colleges only gave elective credit and not mathematics credit for these courses. On one side of the issue was the argument that no college credit should be given for essentially high school work while on the other side was the opinion that a no credit course should adversely affect a student's motivation.

Baldwin (1975) found that two-thirds of the institutions surveyed granted traditional letter grades to students in developmental mathematics classes while the remaining institutions used a variety of alternatives. Beckwith (1980) found 52 percent of the institutions used the traditional grading system in their developmental mathematics classes while 76 percent used traditional grades for their regular mathematics classes.

F. Instructional Practices

Although the studies dealing with the aforementioned topics are descriptive, there were many comparative analyses on instructional practices. Most of these studies were designed to compare results of traditional classroom instruction to some form of individualized instruction. Ajose's (1978) review of the literature cited studies comparing traditional methods to audio-tutorial methods, contract methods, the "systems approach," the tutorial approach, and televised instruction. The results of these studies were inconsistent. Mastery learning, however, seemed to be a strategy which produced increased achievement (Wagner and Jones, 1973, Merritt, 1974, and Hector, 1975). Nevertheless the lack of consistent evidence led Beckwith (1980) to conclude that the "learning needs of at least some of the students in the community college are not being met by current instructional practices--be they traditional lecture method or the more individual approaches." Friedlauder (1979) suggested "...a more effective approach to presenting developmental mathematics would be to use a variety of techniques, that is, combine the advantages of lecture with that of controlled self-paced instruction".

The descriptive studies dealing with instructional techniques reveal that the traditional lecture method is the most used approach in the developmental mathematics classroom (Baldwin, 1975, Beckwith, 1980). Beckwith, however, found that 45 percent of the teachers of developmental mathematics provided some activity designed to individualize instruction. This figure is higher than any other science discipline surveyed and suggested that mathematics instructors were trying new approaches to meet the learning needs of the developmental student.

G. Summary

1. Developmental mathematics comprised a significant percentage of mathematics classes taught in two-year colleges.
2. The attitudes and habits of developmental mathematics students posed problems which resulted in high attrition rates.

3. The content of developmental mathematics classes varied depending upon whether they were introducing mathematics sequences or serving vocational programs.
4. Students were placed in developmental classes by a variety of methods.
5. Colleges varied in their policies of awarding credit and grades for developmental mathematics classes.
6. The traditional lecture method remained the most common for teaching developmental mathematics.
7. Studies comparing traditional methods with individualized methods had produced inconsistent results.
8. Some studies indicated that mastery learning had produced increased achievement.

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X. TEACHING THE MATHEMATICS COURSE

During the development of the Basic Skills Program, several hypotheses were defined concerning the students' mathematical skills and their attitudes toward mathematics. These hypotheses pertained to (a) student skills at the beginning of the course and the effect of the course on them and (b) student attitudes toward mathematics at the beginning of the course and the effect on them.

A. Hypotheses Pertaining to Skills

Since the objectives of the Basic Skills mathematics course were virtually the same as those of the traditional MCCC developmental mathematics course (MTH 005), the hypotheses were defined in terms of comparisons. Two hypotheses were devised concerning comparative skills:

- (1) The mathematical skills of the Basic Skills group would be as developed as those of MTH 005 classes tested during the same semester (Spring 1981).
- (2) Because of intensive individualized instruction and Mastery Learning Methods, the Basic Skills group would progress farther than the MTH 005 classes and would, therefore, achieve greater mathematical skills than the control group at the end of the semester.

The mathematics section of the Basic Skills Assessment Program was used to test the hypotheses concerning mathematical skills. The Assessment Program, developed by the Educational Testing Service and published by Addison-Wesley, focuses on practical applications of academic skills. During the first week, the pre-tests were given to the Basic Skills group and to MTH 005 sections taught by the same instructor.

B. Hypotheses Pertaining to Attitudes

Three hypotheses were defined in regard to the attitude of the Basic Skills students toward mathematics.

- (1) The Basic Skills group would be highly anxious about mathematics at the beginning of the semester.
- (2) The group's anxiety about mathematics would be reduced toward the end of the semester.
- (3) The group would develop a more positive attitude toward mathematics by the end of the semester.

The Fennema-Sherman Mathematics Attitude Scales were used to assess the attitudes of the Basic Skills students. These scales were published by the Journal Supplement Abstract Service of the American Psychological Association.

C. Course Content

The content of the Basic Skills mathematics course was intended to build the skills which they would need in their daily lives and which they would

presumably need in many of their vocational courses. The course work included arithmetic of whole numbers, fractions, decimals, percents, metrics, and graphs and statistics.

To some extent, the work with graphs and statistics was integrated with lessons in the Reading/Study Skills class.

D. Texts

The texts were very important to the system of Mastery Learning.

The primary text was Basic Mathematics: A Program for Semi-independent Study. (D.C. Heath & Co.) by John D. Baley, Martin Holstege, and Gale M. Hughes. This programmed text was divided into small units with specific objectives. The practice test problems at the end of each unit were keyed to sections in the unit.

Two supplementary texts were used to emphasize the practical applications of mathematical skills. When Am I Ever Gonna Use Mathematics (HMS Publications) by Hal Saunders was a collection of word problems stressing the use of mathematics in "believable" job situations. Problem Solving (Franklin Institute Press) by Arthur Whimbey was used to raise the students' awareness of mathematical applications to a variety of situations.

E. Course Procedures - First Eight Weeks

Classroom structure in the first half of the semester was organized to facilitate individually paced mastery learning. No lectures covering content were given to the class. The class hour and lab hour were used as a two-hour lab in which the teacher acted as a third tutor. The tutors shared responsibility for answering questions, giving tests and recording results. No partial credit was given on the test questions, and students had to "master" the unit objectives at an 85 percent level. Students received immediate feedback on their tests and either prepared for another form of the unit test (if they did not get 85 percent of the items correct) or progressed to the next unit.

When one of the faster students completed ten units before the mid-point of the semester, he was diverted from the primary text, Basic Mathematics, to units in beginning algebra. This procedure was followed primarily to let the slower students catch up to the number of units which the faster students had completed in the basic text. By the end of the first eight weeks, all students had completed ten units in Basic Mathematics.

F. Subjective Observations of Student Performance During the Mastery Learning Sequences

Some forms of positive behavior and of negative behavior had not been anticipated by the mathematics instructor before the semester began:

(1) The students' desire to learn and willingness to work was greater than expected. It was feared that an individually-paced instructional mode might invite students to engage in non-productive socializing, but this did not happen.

- (2) It was observed that the groups' ability to listen to and follow instructions was surprisingly poor. Orienting the class to the unfamiliar routine of the individually-paced, mastery learning mode of classroom operation initially required several repetitions of the same set of directions. This inability seemed to be a problem for teachers of the other subjects also.
- (3) Several students voiced a preference for the traditional classroom methods i.e., more lectures and group-paced instruction without the mastery learning concept. The teacher expected the familiar classroom routine to be threatening (assuming previous negative experiences in this routine) and that the idea of mastery learning would be universally accepted by the Basic Skills students, but it was not.

G. Course Procedures - Last Seven Weeks

The Spring break followed by the Human Potential Workshop was an interim of two weeks without mathematics classes. During that period, the course was reappraised and its procedures were revised. In the last half of the semester, the Basic Skills Mathematics class had a more traditional structure. Instruction was not self-paced.

This change was made for several reasons. First the instructor was attempting to adjust students to the classroom procedures which they would be facing in their subsequent courses. Further influences were the comments of the tutors and some students that a teacher-structured system would be more conducive to achievement. Still another influence was the thought that some of the slower students were becoming demoralized because they had fallen behind the pace of the rest of the class. A final consideration was that the instructor wanted to be sure that the class would cover a certain amount of ground before the semester's end.

As a result, classwork followed this sequence in the last seven weeks. A lecture was given covering the material in a unit. The students were supplied with an outline of the lecture and were expected to fill in the outline with examples and details used in the lecture. A specific date was set for the unit test and there was no opportunity to retake the test. During this time, the teacher took the role of supervisor of tutors in the labs sessions while the tutors' only role was to walk around the class looking over shoulders to monitor progress and give help.

H. Subjective Observations of Student Performance in the Last Half of the Semester.

Productivity of the students appeared to drop dramatically during the second half of the semester. The mathematics instructor attributed this decline, not to the abandonment of self-pacing; but to two other factors. (1) The students were confronting more difficult and less familiar material. and (2) they seemed to have difficulty establishing psychological momentum following the two-week hiatus of the Spring break and the Human Potential Workshop.

I. Student Evaluations

The Student Evaluation form was intended to evoke some judgments of the self-pacing methods in the Mathematics course. The majority of students seemed to favor elements of self-pacing. (SA means "strongly agree"; A means "agree"; D means "disagree"; and SD means "strongly disagree".)

TABLE 30
Mathematics Self-Pacing

The Mathematics Skills course...	SA	A	D	SD
1. had too many tests.	0	1	8	8
2. should have had everybody doing the same thing at the same time	0	3	9	5
3. should not have given the opportunity to take a test more than once.	2	2	6	7

The class was more evenly divided in regard to the amount of lecturing. A large minority favored more lectures.

TABLE 31
Mathematics Lecturing

The Mathematics course...	SA	A	D	SD
did not have enough lectures.	1	6	8	2

In any case, nearly all the students felt that they could get help when they needed it.

The Mathematics course...	SA	A	D	SD
provided individual help whenever I needed it.	9	7	1	0

Furthermore, the course seemed to have increased the students' positive feelings about mathematics.

TABLE 32
Attitudes Toward Mathematics

The Mathematics course...	SA	A	D	SD
increased my confidence about doing math.	5	11	1	0
increased my appreciation of math and how it is used on job situations	9	8	0	0

The part of the Student Evaluation Form which requested suggestions for improvement drew a scattered reaction. Four students suggested more group work (as opposed, presumably, to self-pacing).

Three students suggested more difficult work. Future training could be improved in the Mathematics Course by

- (3) - changing nothing
- (2) - allotting more time for this course
- (3) - extending the course into harder mathematics, e.g. algebra
- (1) - including weekly oral drills in times tables

- (4) - including more group work or lecture-demonstration
- (1) - requiring all students to take tests at the same time
- (1) - not requiring students to take tests when not ready
- (2) - (No comment)
- (3) - (Praise for instructor and/or course)
- (1) - (Praise for individualization class):

J. Student Comments on Last-Day, Impromptu

The last paper in the writing class required students to make more judgments of the program. More positive comments were volunteered about the math class than of any other component.

Nine comments emphasized the benefits of the math class, and seven other comments indicated that the students would have liked more math. Some representative remarks have been quoted.

("What do you think you have gotten out of the Basic Skills Program?")

1. "The best thing he got out of his schooling is a better understanding of math. He will need a lot of math in drafting."
2. "He improved himself most in basic math class and also learned algebra and something about the metric system."
3. "One of (his) favorite classes was math because he enjoyed the challenge."
4. "The course she has benefitted from the most is math. (She) feels she has built up her skills in math and is confident that she can handle just about any math problem in the employment world."
5. (Her) math ability has increased with a new understanding of division and fractions.

("What more do you think you could have gotten out of the program?")

1. (He) stressed that he would have liked to have had more of an orientation in more advanced math skills...."
2. "The thing (she) would have liked to have learned more of is algebra...."
3. "...she would have liked (math) even more if it had expanded into even harder math like algebra, geometry, and trigonometry."

Such positive comments appear to reinforce some of the implications of student responses to the Fennema-Sherman Mathematics Attitudes Scales.

K. Tutors' Evaluations

The tutors' evaluations corresponded to the students evaluations of the Mathematics class in most respects.

The tutors "disagreed" that the course had "too many tests", and they "disagreed" that the course "should have had everybody doing the same thing at the same time." These judgements seem to encourage some degree of self-pacing.

However, unlike the majority of students, the tutors "agreed" that the course "should not have given the opportunity to take a test more than once." They added the suggestion "the second test should not affect the grade for the unit. It should be viewed as a learning experience."

In regard to "individual help" the tutors "agreed," as did the students, that it was available whenever a student needed it.

Individual help and other elements of the course did contribute to increasing student confidence about math, the tutors "agreed." The tutors expressed a divided opinion about only one question: whether the math class had increased the students' appreciation of math and "how it is used on job situations." One tutor "agreed" that the course had improved this appreciation, but one tutor "disagreed." The students had either "strongly agreed" or "agreed".

L. Changes in Student Attitudes toward Mathematics as Projected on the Fennema-Sherman Mathematics Attitude Scales

Before the semester had begun, two hypotheses had been formulated in regard to the students' anxiety about mathematics. (1) The Basic Skills group would be highly anxious about mathematics at the beginning of the semester, and (2) the group's anxiety about mathematics would be reduced toward the end of the semester.

1. Some items on the Fennema-Sherman Mathematics Attitude Scale are intended to measure anxiety. Their intention is described by the authors of the test in these words:

The Mathematics Anxiety Scale (A) is intended to measure feelings of anxiety, dread, nervousness and associated bodily symptoms related to doing mathematics. The dimension ranges from feeling at ease to those of distinct anxiety. The scale is not intended to measure confidence in or enjoyment of mathematics.

Student responses are summarized by the table below:

TABLE 33
Mathematics Anxiety Scale

	pre	post	differences
Anxiety (N=15)			
mean	38.2	39.4	1.2
sd	15.0	11.1	8.2

These responses suggest that anxiety was not unusually high among the students of the Basic Skills group. The pre-test mean of the Basic Skills group (38.2) was very close to the mean of the group on which the scales were normed (38.7).

Another inference must be that math anxiety was not reduced by the course. The difference between the pre- and posttest means (+1.2) was not significant at the .05 level.

Therefore both of the original hypotheses - (a) that the Basic Skills group would be highly anxious about math and (b) that the group's math anxiety would be reduced by the course - were not supported by the data.

2. Some sets of responses to the Fennema-Sherman Scale did not bear directly on the hypotheses. These demonstrated no significant changes in student attitudes. The attitudes which were measured and the pre-post responses are summarized below:

(a) Teacher Scale

The Teacher Scale (T) is designed to measure students' perceptions of their teachers' attitudes toward them as learners of mathematics. It includes the teachers' interest, encouragement and confidence in the student's ability.

TABLE 34
Perception of Math Teacher

	pre	post	differences
Teacher Scale mean	43.4	42.3	+1.1
s.d. (N=15)	7.8	5.1	6.3

The slight decline is not significant at the .05 level.

(b) Male Domain Scale

The Mathematics as a Male Domain Scale (MD) is intended to measure the degree to which students see mathematics as a male, neutral, or female domain in the following ways: a) the relative ability of the sexes to perform in mathematics; b) the masculinity/femininity of those who achieve well in mathematics; and c) the appropriateness of this line of study for the two sexes.

TABLE 35
Math as Male Domain

	pre	post	differences
Male Domain Scale mean	53.2	53.5	-0.3
s.d. (N=15)	5.3	6.1	5.3

The slight increase is not significant at the .05 level.

(c) Effectance Motivation

The Effectance Motivation Scale in Mathematics (E) is intended to measure effectance as applied to mathematics. The dimension ranges from lack of involvement in mathematics to active enjoyment and seeking of challenge. The scale is not intended to measure interest or enjoyment of mathematics.

TABLE 36

Distance Motivation Scale

		pre	post	differences
Effectance	mean	44.5	43.7	-0.8
Motivation	s.d.	9.4	8.9	7.2

Scale (N=15)

The slight decline is not significant at the .05 level.

3. Significant Changes in student judgments of math as useful were indicated by the Mathematics Usefulness Scale. The authors have defined the function of the scale in the following terms:

The Mathematics Usefulness Scale (U) is designed to measure students' beliefs about the usefulness of mathematics currently and in relationship to their future education, vocation, or other activities.

TABLE 37

Math Usefulness Scale

		pre	post	differences
Usefulness	mean	54.7	51.5	-3.2
Scale	s.d.	5.7	4.0	4.1

(N=15)

This decrease is significant ($t = 3.03$ with d.f. = 14 which is significant at the .005-level). A possible inference is that the decline is a result of the counseling given in the Basic Skills program. The higher pre-test score may have reflected unrealistic expectations about the necessity of mathematics in the students' future training. The lower posttest scores, as a result, would reflect firm decisions about vocational choices and a greater knowledge of how much math the students would need in vocational courses.

4. Other significant changes were indicated in the Confidence Scale. Apparently, the students had become more confident that they could learn how to perform mathematical tasks. The function of the Confidence in Learning Mathematics Scale is described below:

The Confidence in Learning Mathematics Scale (C) is intended to measure confidence in one's ability to learn and to perform well on mathematical tasks. The dimension ranges from distinct lack of confidence to definite confidence. The scale is not intended to measure anxiety and/or mental confusion, interest, enjoyment or zest in problem solving.

TABLE 38

Confidence Scale

		pre	post	differences
Confidence	mean	40.3	44.1	3.8
Scale	s.d.	12.6	9.7	9.7

(N=15)

The increase falls within the limits of statistical significance ($t = 1.52$ with d.f. = 14 which is significant at the .025 level). Therefore the data from the Confidence Scale supports the hypotheses that the students' general attitude toward mathematics would become more positive.

M. Comparison of Pre-test Levels of Basic Skills Students to those of MTH 005 Students

A preliminary hypotheses concerning skills was that the achievement levels of the Basic Skills students would be equal to those of MTH 005 students taught by the same instructor in the Spring semester of 1981. This hypotheses was not supported by data from the pre-test of the Mathematics section of the Basic Skills Assessment Program.

The data is summarized by the following table.

TABLE 39
Comparative Pre-test Scores

	Basic Skills (N=18)	MTH 005 (N=15)
Mean	30.89	42.40
s.d.	9.26	11.05

The pre-tests demonstrated that the achievement levels of the Basic Skills group were significantly lower. (In fact, the hypotheses that the groups were equal was rejected at an .0005 level. $t=9.31$ with d.f. = 31.)

N. Comparison of Gains of Basic Skills Students and MTH 005 Students

Another aspect of a preliminary hypothesis was the prediction that Basic Skills Students would gain more than MTH 005 students. Comparisons of pre-post tests do support this feature of the hypotheses.

The gains are summarized by the table below.

TABLE 40
Comparative Gains

Basic Skills Assessment Program-Mathematics	Experimental Group N=18			Control Group N=15		
	pre (form A)	post (form B)	differences	pre (form A)	post (Form B)	differences
mean	30.89	38.56	7.67	42.40	42.27	-0.13
s.d.	9.26	9.60	6.93	11.05	10.57	6.02

The gain in the mean scores of the Basic Skills group is significant at the .0005 level ($t = 4.69$ with d.f. = 17). According to the manual for the Basic Skills Assessment Program, the mean score for the pre-test for the Basic Skills group was at approximately the latter half of the sixth grade level. The mean score of the posttest of the Basic Skills group was at approximately the first half of the ninth grade level.

In contrast to the Basic Skills group, the MTH 005 group made no significant gains or losses. So the expectation that the Basic Skills group would make greater gains was supported.

O. Comparison of Posttests Levels of Basic Skills Students to those of MTH 005 Students

Despite its gains, the posttests mean of the Basic Skills students remained lower than that of the MTH 005 students.

TABLE 41
Comparative Posttest Scores

	Basic Skills (N=18)	MTH 005 (N=15)
Mean	38.56	42.27
s.d.	9.60	10.57

The difference (3.84) was still significant at the .005 level ($t = 3.02$ with $d.f. = 31$). So the hypotheses that the MTH 005 would display greater skills at the end of the semester was not upheld.

P. Summary

1. The Basic Skills achievement level, as indicated by gains in mean score, increased significantly from approximately the latter half of the sixth-grade level to approximately the first half of the ninth grade-level.
2. The Basic Skills group gained more than a MTH 005 group which made no significant gain or loss.
3. The beginning level of the Basic Skills group was significantly lower than that of the MTH 005 group, and the final level of the Basic Skills group remained significantly lower than that of the MTH 005 group.
4. Student responses to pre-post administrations of the Fennema-Sherman Mathematics Attitudes Scales indicated that the students had increased in confidence in their ability to perform math problems; these responses corresponded to the students' responses to the Student Evaluation Form and to the tutors' evaluations.
5. Student responses to pre-post administrations of the Fennema-Sherman Mathematics Attitudes Scales indicated that students had lowered their expectations that math would be useful to future activities; these responses contradicted their responses to the Student Evaluation Form and to the judgment of one of the tutors.
6. The Basic Skills students demonstrated no significant changes in their attitudes toward the mathematics teacher, their perception of math as a male domain, or their willingness to become involved in mathematical problems.
7. The Basic Skills students were not highly anxious about mathematics at the beginning of the course, and their anxiety about math did not increase or diminish significantly during the course.

8. The students preferred the "self-pacing" techniques of the first half of the course to the more traditional practices of the last half of the course.
9. In the judgment of the instructor and tutors, a system of lectures and deadlines was preferable to "self-pacing" for the last half of the course.
10. The students' willingness to work and learn was greater than the instructor had anticipated.
11. The students' ability to listen and to follow directions was lower than the instructor had anticipated.

VI. REVIEW OF PERTINENT RESEARCH - COUNSELING

The research conducted for the Counseling 292 component explored these areas: The methods by which counseling would best serve the needs of students in the program, the selection of useful counseling tools, and counseling practices of exemplary developmental programs in Michigan and elsewhere.

A. Needs and Methods

The literature is crowded with articles emphasizing the need of counseling support for both adult basic education and adult developmental education students. Fleming, in Counseling and Advisement Practices in Adult Education, stressed that the usual passive system of awaiting requests for help, presumably with academic problems, did not well serve those adult needs. Koryale and Lindsay in Adult Basic Education: Has It Worked? encouraged counselors to become actively engaged in helping adults overcome economic problems; home problems, such as the disapproval of family or peers of further education; and psychological problems, such as the fear of repeating past academic failures. All of these problems were experienced by students of MCCC's Basic Skills Program.

A germinal study which confronted such difficulties was the Guidance and Counseling Project for Adult Basic Education, Office of Education, Region VI Final Report. The report outlined these areas for providing service to adult developmental students:

- 1.) The need to improve the students' self-concept.
- 2.) The need to help individuals with "adult" problems.
- 3.) The need to provide career awareness skills so that the students might find their purposes for academic effort.

1. Improving Self-Concept

In Overcoming Learning Problems, Roueche and Snow (Roueche and Snow, 1977) summarized an important finding: "When a college commits itself to the development of student self-concept, it is more successful in the number of students who complete the program, persist to the third semester, and complete some certified program."

Some years earlier, Maslow's highly influential work, Motivation and Personality (Maslow, 1954) had discussed the psychological needs which must be satisfied prior to self-actualization. Prominent among these needs was the amelioration of anxiety. Ellis in Guide to Rational Living recommended the confrontations of ten Irrational Ideas which retard the growth of a positive self-concept. The discussion of such ideas - such as the conviction that an adult must be

loved by everyone, that one must be competent in every respect, and that problems are best avoided rather than solved - become the basis of a mini-workshop early in the Basic Skills semester.

The most intense effort to improve self-concept occurred in the Human Potential Workshop. The workshop was a four-day seminar conducted along the lines laid down by McHolland. In the workshop, the students were helped to articulate their own weaknesses and strengths so that they could learn to work with their strengths:

External consultants Martha Maxwell and John Roueche had independently suggested other methods of reducing anxiety and encouraging a sense of personal worth. Each recommended a class situation in which the students would have opportunities to get together, to share experiences, and to recognize the mutuality of one another's problems.

Another means of improving self-concept which did not specifically apply to the Counseling class, but which did influence the program, was encouraged by Purkey. Purkey (1970) stated that facilitating experiences of academic success, particularly in the early stages of coursework, was one of the best methods of improving self-concept.

The importance of raising the self-concept of the Basic Skills students became clear when the results of the Canfield Learning Styles Inventory was analyzed. Almost half of the class expected to fail or to achieve only a low level of success. (See "Student Responses to the Canfield Learning Styles Inventory, pp. 32-35.)

2. Serving "Adult" Problems

To define the problems, especially important to adults, which frequently interfere with learning, Maslow had constructed a hierarchy of needs which were not only psychological but also physical and financial. Maslow argued for an enlarged counseling effort to discover those needs and to help students cope with them. Maslow's arguments prompted - in addition to the mini-workshop on anxiety - a session on the college's health services, and two sessions on financial aid. As a means of discovering student problems, external consultant Martha Maxwell recommended a close monitoring of students' absences. Absentees should be "required" to call the counselor to explain each absence. If the absentee did not call, then the counselor should call for an explanation. This system was followed, and it sometimes produced results.

3. Providing "Career Awareness"

According to Maslow's theory, after a student had been helped to cope with personal needs, he should be led to an awareness of career possibilities. In Maslow's opinion, the determination to pursue a career was the highest form of self-actualization.

The "Career Awareness" function of the Counseling 292 course overlapped the functions of the "Introduction to Technical Careers" course. The distinction was that the ITC 292 course provided objective experiences whereas the Counseling 292 course provided individualized ones.

B. The Question of Integrating Counseling with Academic Courses

Originally, the Counseling Instructor had hoped to introduce the "Career Awareness" element into the subject matter of the academic courses. His research of the integrated approach, used at LaGuardia College, had caused him to recommend a system in which he would not teach a distinct counseling course. Instead, he would present "Career Awareness" materials, when suitable, into the Math, Reading/Study Skills, and Writing courses. The materials could be used in practice with academic skills and could also be used to help the students make career choices. Furthermore, the introduction of the materials would permit the counselor to become acquainted with the students so that he could gain their confidence in order to assist them with personal problems.

After deliberate consideration of the counselor's proposal, the other team members decided that they could not efficiently teach beginning lessons with career awareness subject matter. Consequently, the presentation of objective career experiences became the province of ITC 292 and personal and career guidance become those of Counseling 292.

C. Counseling Tools

To forward the purposes of the counseling course, a series of tests and systems were selected as a result of experience and recommendations.

- 1.) The Canfield Learning Styles Inventory was chosen to provide information on student preferences of subject matter, methods, and class relations. (See pp.32-35.) The inventory also provided enlightening data on the students low expectations of success. This instrument was recommended, among others, by external consultant John Roueche.
- 2.) The Guilford-Zimmerman Temperament Test has been used at MCCC for many years to analyze personality traits.
- 3.) The McHolland Self-Directed Search is a self-administered interest inventory which permits students to examine their own interests. It had been highly recommended by some counselors and could be tied into the MOIS System.
- 4.) The Michigan Occupational Information System (MOIS), a computer-based inventory. It provides information on employment openings in various career areas. The system is frequently used at MCCC.
- 5.) The Kuder Interest Inventory is a standardized inventory that was used in the project and resulted in the clearest picture of student interests.

- 6.) The Differential Aptitude Test provides data on a student's aptitudes in various areas such as mechanical, abstract reasoning and spatial relation. It is a familiar test at MCCC.
- 7.) The McHolland "Human Potential Workshop" has been used successfully at MCCC for some years. As has been explained, the workshop attempts to build self-concept by encouraging the student to recognize his strong points.

D. Counseling Courses and Systems in Other Colleges

A study of CETA pre-vocational programs in other two-year colleges revealed a range of counseling treatments. A sampling of program descriptions will suggest the variety of possibilities.

1.) Kalamazoo Valley Community College

The Kalamazoo Valley Community College Student Handbook for CETA trainees encouraged the students to take advantage of the "Supportive Services" during their eight-week course. The services include Personal, Career, and Academic Counseling.

SUPPORTIVE SERVICES

Counseling
Room 45, Redwood

Personal Counseling

Through personal counseling students can be assisted to:

- better understand themselves and their feelings which may interfere with academic success
- gain skills in decision-making
- explore alternatives to existing behaviors and feelings
- accept responsibility for directing their own lives

Vocational and Career Counseling

Through career counseling individuals can:

- further explore and evaluate tentative career choices already set
- seek new directions through planning and further exploration
- participate in self-awareness, career awareness, decision-making and life planning activities.

Academic Development Evaluation

Placement testing in reading, mathematics and English is provided for all at no charge so that students will be able to pick courses suited to them. The counselors will be able to discuss the results of the tests with each person and make recommendations about specific courses.

2.) Southwestern Michigan College

The Southwestern Career Orientation and Preparation Program (COPP) was a four-week program for CETA students which included a Career Exploration Course. The course somewhat resembled MCCC's Counseling 292 in content, but the Southwestern course gave more emphasis to career awareness.

SPS 103 Career Exploration

2 Credits

The course is designed to help students take a realistic look at career opportunities in relationship to their interests and abilities by: (a) developing a sense of self-awareness in the student about their goals, needs and abilities; (b) developing a career-awareness atmosphere for students to explore the various careers open to him; (c) developing an ability to make decisions concerning career options, and (d) assessing career planning techniques.

3.) Triton College, River Grove, Illinois

In the summer of 1980, Triton College conducted a three-week CETA program (H. E. L. P.) which included a "communication/computation section." Though, obviously, much shorter than Counseling 292, the sections content similarly attempted to combine career and personal elements. The description, as given in the Triton report is summarized below:

The communication/computation section had two primary/focal points: oral communication and human potential. Both of these foci were integrally linked with the individual's own career goals and job situation. The classroom phase of this session relied heavily on the discussion of films and filmstrips of particular careers; this not only expanded the client's awareness of career possibilities, but it heavily stressed the need for good conversational skills. These communication skills were also practiced when speakers (most notably Russ Ewing, of NBC news) came; the clients were encouraged and prepared to make inquiries regarding the presentations.

The human potential course required the client to examine the topics of self-development, motivation, goal-setting and values. The clients were encouraged to personalize these topics whenever appropriate and possible.

E: Summary

1. Several sources urged greater efforts to assist adult developmental students
 - a.) improve self-concept,
 - b.) cope with adult problems and
 - c.) improve career awareness

2. The counselor recommended a system, like that of LaGuardia College, which integrated counseling into academic classes; however, the consensus of the team was to create two distinct courses: Counseling 292 for personal development and personal career selection and Introduction to Technical Careers for objective career exploration.

3. A variety of counseling tools were selected to explore personal traits, to explore attitudes, and to explore careers.
4. A survey of counseling components in other two-year colleges discovered these patterns:
 - a.) A recommendation to the students to take advantage of counseling services.
 - b.) A counseling course with most of the emphasis on heightening career awareness.
 - c.) A counseling course which divided its emphasis between career awareness and personal awareness.

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XII. TEACHING THE COUNSELING COURSE

Before Counseling 292 began, the Counselor assisted the students to register and held a brief orientation session.

The beginning of the course detailed Maslow's classification of needs. The course sought to help students by providing instruction on coping with anxiety problems, health problems, and financial problems before moving into career searches.

A. Class Activities

The class met for an hour and a half each Monday and Wednesday. Most of the sessions were taken up by class discussions. But some visiting speakers lectured on their special knowledge of useful subjects. In addition, some class periods engaged the student in "computer searches" for occupational information. Additionally, some class time was devoted to testing. At mid-semester, a "Human Potential Workshop" occupied the students all of each class day for three days.

To assist these activities, the Counselor provided the students with a variety of materials but used no text.

B. Grading

The students were graded, largely for attendance and completion of activities. The Counselor would have preferred not to grade them, but he was obliged to if they were to be given college credit and if they were to receive CETA payments.

The following chronology summarizes the course's pursuits.

C. Chronology

Week I

1/19

The "first-day activities" filled what would have been the first session. During that day, the Canfield Learning Styles Inventory was administered.

1/21

The second meeting was devoted to an overview of the course objectives including an introduction to Maslow's hierarchy of needs.

A further stress was placed on the availability of class time to handle CETA-related concerns. The students were also informed that they would have time to discuss personal problems which might interfere with their schooling. Although the course would provide "career information" as they were told, its main purpose was to remove obstacles to their success in college.

Week II

1/26

Counselor Robert Marrs presented a workshop on coping with "test anxiety" and how to deal with stress using the rational approach of Albert Ellis.

1/28

A career-selection theory was presented, and the students were given an interest inventory as homework. An early start with career awareness became necessary because the interest tests would have to be computer scored and later interpreted. Rather than giving the tests without explanation, they were presented following the discussion of the theory. The theory related interests, aptitudes, job values, awareness of career options, and reality factors.

Week III

2/2

The school nurse, Cecelia Champion, visited the class to discuss health care and services. She provided the students with information on health insurance, medical services, and diets. Thereafter, the class toured the nurses' office which is available to all students.

2/4

The class began a preliminary discussion of filling out the B. E. O. G. form for financial aid.

Week IV

2/9

The school's financial aid officer, Karen Rexin, visited the class to answer questions about filling out the financial aid forms. This session was given the highest rating of all the activities evaluated by the students.

2/11

Students were guided through the McHolland Self-Directed Search. This began the main phase of the career awareness units of the course. The McHolland Self-Directed Search literature claimed that the individual could use his own self-awareness to clarify a career goal. The responses to the Self-Directed Search could also be used with the computerized Michigan Occupational Information System (MOIS).

The Self-Directed Search did not work well. The students had difficulty with the intricate coding system which was used for self-scoring.

Week V

2/16-

2/18

The students were given instruction for accessing a computer-based guidance system. The Michigan Occupational Information System (MOIS). They were given further help in using the results of the McHolland Self-Directed Search with that system. The MOIS script gave a student a description of the career, worker traits, requirements, methods, methods of job entry, salaries and job market information.

The use of the system conferred a side benefit. As internal consultant, Art Wagner, pointed out, when the students were learning

how to use the computer for career guidance they were also learning about the computer. This activity may have been partially responsible for encouraging five students to become interested in data processing.

Week VI

2/23

The computer searches were continued.

2/25

The Kuder D.D. Interest Inventory was presented to obtain an "indirect" analysis of job interests. The instrument did not elicit interest in specific job titles, but rather interest in life activities. The results were compared to "occupational" and "college major" patterns. For example, an individual's interest pattern could be compared to the pattern of a bricklayer or of a dentist.

Week VII

3/2, 3/4

These sessions were devoted to discussions of the MCCC programs that related to interest test scores. Also discussed were the implications of the CETA guidelines.

Students were obliged to make some initial career choices and some plans for enrolling in courses at MCCC or elsewhere.

Week VIII

3/9, 3/11

Students were guided through the Abstract Reasoning, Mechanical Reasoning, Spatial Relations, and Clerical Speed and Accuracy sub-tests of the Differential Aptitude Test.

A student's potential was related to occupational choices. An attempt was also made to discover if the student had some potential in an area not previously tested:

Spring Break

Week IX

Four Days:

3/23 - 3/26

A Human Potential Workshop using the McHolland method was employed as a systematic effort to improve each student's self-concept. The method attempts to make the individual aware of talents and successes by reviewing past accomplishments. The review should clarify the student's personal values and help him to focus his efforts on his own goals.

To conduct the workshop, the class was divided into two groups, one conducted by Counseling 292 Instructor, Bart Fiumano and the other conducted by Counselor Mary Preda. The workshop was an intense group activity which prompted students to reveal much of themselves to their classmates. Both of the counselors encountered difficulties in the activity which they had not encountered in years of administering the workshop to other students:

Yet the student evaluations of the workshop rated it highly.

(See Appendix J for an outline of this workshop.)

Weeks XI - XII
4/6, 4/8, 4/13, 4/15

These two weeks and part of the next were spent meeting with individual students to bring together their test results and their self-discoveries in order to formulate an individual educational plan.

Week XIII

4/20 Individual program planning was continued.

4/22 Registration procedures were discussed. Students would be going through registration for Summer semester courses on their own. They were briefed on how to register and how to cope with problems of closed sections.

Week XIV

4/27 The session was devoted to assisting students with individual questions and problems.

4/29 The Guilford-Zimmerman Temperament Test was administered. The students said that they wanted to take a test to get to know themselves better.

Week XV

5/4 The class concentrated upon "business activities." Certain matters had to be handled for CETA in terms of educational intent forms and financial aid forms for the summer.

5/6 The Guilford-Zimmerman Temperament Test findings were interpreted along with a caution that group norms were established in the '50's.

Week XVI

5/11 Students were reminded of services available to them during the summer. They were particularly encouraged to visit the Program Counselor in case of any difficulties.

5/13 The class discussed possible improvements for Counseling 292.

D. Post-Semester Activities

The students were assisted with problems of registering for the Summer semester.

During the Summer semester, the students met in small groups with the Counselor. They were, in addition, given personal counseling and assistance in such matters as arrangements for tutorial help.

E. Student Evaluations

The early part of the course attempted to provide personal assistance as a means of improving self-concept.

1. Personal assistance was judged to be helpful by most of the students. The table below summarizes the students' evaluations of the session.

which discussed health services and the session which discussed text anxiety. (SA = "strongly agree"; A = "agree"; D = "disagree"; SD = "strongly disagree")

TABLE 42
Health Services Session

	The experience was valuable to me.				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
The health discussion by the college nurse	5	10	2	0	8	9	0	0
The presentation on how to cope with anxiety	2	10	5	0	5	10	2	0

The personal assistance session which received the highest evaluation of any activity was the "financial aid workshop."

TABLE 43
Financial Aid Workshop

	The experience was valuable to me.				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
The financial aid workshop	12	4	1	0	13	3	1	0

2. Career awareness became the major focus of the class by the fourth week. In some cases, the results of the testing and computer searches were not satisfactory. Nevertheless, most students considered these activities worthwhile.

TABLE 44
Career Awareness Activities

	The experience was valuable to me.				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
Using the computer to search career information.	1	12	4	0	6	9	2	0
Interest testing and interpretation.	2	11	4	0	4	11	2	0
Aptitude testing and interpretation.	1	12	3	1	3	10	4	0

3. Late in the semester, after most of the students had made their vocational decisions, they were assisted to choose courses for their Summer and Fall schedule. This assistance seemed important to the majority of students who "strongly agreed" upon its value.

TABLE 45
Vocational Decision Assistance

	This experience was valuable for me				This experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
Discussions on future course selections.	10	5	2	0	11	5	1	0

4. At the mid-point of the semester, the class had been divided into two groups and these were guided in "Human Potential Workshops" by Counselors Bart Fiumano and Mary Preda. The "Workshops" explored each individual's personal strengths and weaknesses. The intention was to help the students to recognize their strengths and to build on them. Nevertheless, the experiences of the "workshops" were personally challenging and intense. Both counselors commented upon the unusual difficulty of conducting the "workshops" with the Basic Skills group.

However, the group's evaluation of the workshops was strongly positive.

TABLE 46
Human Potential Workshop

	This experience was valuable for me.				This experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
Human potential workshop.	12	3	1	1	11	4	1	1

5. A section of the Student Evaluation Form requested them to make suggestions for improving the courses. The most notable set of suggestions for the counseling course expressed the thoughts that the time given to Counseling 292 might be reduced.

"Future training might be improved in the Counseling Course by . . ."

- (5) - changing nothing
- (8) - reducing the amount of time allotted to the course, e.g. to once weekly
- (2) - and/or to alternate the counseling class with the ITC (Introduction to Careers) class

- (2) - including personal counseling
- (1) - instead of group counseling
- [1] - (No comment)
- [2] - (Praise for instructor and/or course)
- [1] - (Criticism of need for class)

F. Student Comments on Last-Day Impromptu

The interview papers registered six appreciative comments on the counseling course, including the Human Potential Workshop.

Here are some quotes.

("What do you think that you have gotten out of the Basic Skills Program?")

1. "In addition, the [course] helped directing her toward the best program of her interest."
2. "In the Counseling class, [she] has learned about the rules of the college, courses and credit hours, also filling out college forms that will be of use to her in the future."
3. "[She] said she liked the Human Potential. She said 'it was fun.'"
4. "In the 'Human Potential Group,' [she] enjoyed learning about all the people in 'The Basic Training Group,' and [she] learned a few things about herself too, that was to her advantage."

("What more do you think that you could have gotten out of the Program?")

Though the answers weren't direct responses to the question, two students remarked that the time spent in the Counseling component could have been reduced.

G. Instructor's Comments

1. The personal aid visitors were valuable, of the financial aid expert was particularly important because of the complex personal and financial problems of the students.
2. The Holland Self-Directed Search was too complicated to be helpful and would not be repeated for a Basic Skills group.
3. If more time had been available to work on the computer-based Michigan Occupational Information System, the system would have been a more valuable tool. However, MOIS was useful and was worth using again both for the information it made available to the students and for the practice with computers which it provided.

4. The MOIS Career Search might have been more useful if the Self-Directed Search had been more effective.
5. The students seemed frustrated by the experience of the Differential Aptitude Test; therefore it would not be repeated.
6. The Human Potential Workshop was helpful to many students, but it might better have been scheduled at a different time in the semester.
7. Group and individual work on educational plans proved to be essential.
8. The Guilford-Zimmerman Temperament Test served only a minor purpose and might have been eliminated.
9. The Basic Skills students should be offered personal help beyond the end of the semester.

H. Summary

1. The personal assistance segment - including sessions on anxiety, health services, and financial aid - were considered useful by both the students and Counselor.
2. The career awareness segment - through given a reasonably high evaluation by the students - should eliminate the McHolland Self-Directed Search; but it should retain The Michigan Occupational Information System and the Kuder Interest Inventory.
3. The Human Potential Workshop should be repeated but should not be scheduled to extend a break in other activities.
4. Much personal counseling interwoven with group activity was vital.
5. Grading was not exactly appropriate to the course.
6. An effort to monitor unproductive behavior, such as absences and tardiness was important; personal contacts to reduce such behavior likewise appeared important.
7. The maintenance of personal and group counseling beyond the end of the semester was important.

XIII. REVIEW OF RELEVANT RESEARCH OF PRACTICES --- VOCATIONAL ORIENTATION CLASSES

The Introduction to Technical Careers Class (ITC 292) did not exactly correspond to any other course uncovered by a review of pre-vocational programs.

ITC 292 was incorporated late in the planning stages of the Basic Skills program. The course became part of the Basic Skills plan because of the instructors' anxiety to provide motivation for pre-vocational students during a sixteen-week semester. The hope was that the students would gain more from their academic studies if they experienced frequent reminders that their reading, writing, and math classes were leading to vocational pursuits.

The ITC class was also to serve the important purpose of helping students make career decisions:

A. Objectives

Murphy (Murphy, 74) refers to a definition of three objectives of remedial vocational education: (1) to provide instruction in basic academic skills; (2) to assist students in making a realistic self-appraisal on the basis of existing skills, interests, and aptitudes; and (3) to develop a commitment to an "educational-vocational-personal goal." Both the ITC course and the Counseling course pursued the last two objectives. The difference was that the Counseling Course emphasized personal guidance while the ITC course provided objective experiences to assist vocational decision making.

B. Integration With Personal Counseling

Other comparable programs, such as those of Kalamazoo Valley Community College and Southwestern Community College, combined personal guidance and an occupational survey into one course. This combination seems to have been the pattern of several "Vocational-personal Decision-Making Program Components" cited by the survey of New York State developmental studies for occupational students. (Cornell Institute for Research and Development in Occupational Education, 1976). The "outcomes" of these components were intended to be (1) improved understanding of personal needs and abilities, (2) identification of tentative career goals, and (3) selection of program major. Therefore a distinguishing characteristic of ITC 292 was the degree to which it concentrated on providing objective experiences to assist vocational decisions.

C. Length of Course

Another distinguishing characteristic - which the ITC course shared with other Basic Skills components - was the length of time which it gave to a pre-vocational experience. Other occupational orientation classes, such as those which Murphy describes, began a particular vocational sequence after a student had already made a general choice - or else they accompanied at least one vocational class.

The programs which are not premised on a vocational choice - such as at Southwestern Community College or Kalamazoo Valley Community College - last only four to eight weeks rather than sixteen.

The Macomb ITC course was considered useful by the students and by the instructor. However, their judgments suggest some modifications.

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XIV. TEACHING THE INTRODUCTION TO TECHNICAL CAREERS COURSE

A. Goals of the Course

The Introduction to Careers (ITC 292) Course was planned to perform several functions: (a) to motivate the Basic Skills students by helping them keep in mind the vocational purpose of their academic classes; (b) to acquaint the students with the variety of program possibilities which were available at MCCC; (c) to broaden the students' view of vocational possibilities; (d) to provide the students with first-hand acquaintance with the nature of some kinds of work; (e) to supplement the vocational guidance provided by the Counseling Course.

B. Course Practices

The ITC class met once a week, usually on Tuesday afternoon from 1:30 - 4:30 p.m. It sometimes held discussions in the Basic Skills classroom, but it frequently left the classroom to visit other campus sites or to take field trips. Several guest speakers from the vocational and technical areas were introduced. Most class sessions had defined learning objectives, and most had short homework assignments. A variety of materials was distributed to the class to assist discussion and to supplement the lessons, but no texts were used.

Letters grades were given at the end of the course. The instructor, Chris Panos, would have preferred not to have administered grades because they did not seem appropriate to the design and purposes of the course. However, grades were required if the students were to be given college credit and if they were to receive CETA payments for course work. Therefore the students were graded according to their performances on homework and personal projects.

C. Course Design

During the first eleven weeks of the course, the class was introduced to the requirements and conditions of employment in these vocational areas: design technology, mechanical careers, business, and health services. In the last five weeks, the students concentrated on and discussed concerns affecting their personal vocational choices.

D. Chronology

The course followed this schedule:

1/20 WEEK I: WORLD OF WORK

A. Development of work as we know it today.

1. Introduction of class members
2. What is work?
3. Work ethics.
4. Development of workweek.
5. Identification of jobs.
6. What kinds of training, education and experience does one need to obtain a position.
7. Film - Automation: the Next Revolution

Learning Objectives:

1. The student will be able to develop an understanding of the concept of work, productivity and changes occurring in the community.
2. Identify opportunities for employment.
3. Develop a historical overview of work, 1950 to 1980.

Homework Assignment:

From want ads provided identify jobs and requirements needed to obtain.

1/27 WEEK II

- A. Discussion of homework assignment.
- B. Awareness of the historical development of educational institutions To train and prepare workers
 1. University
 2. College
 3. Community College
 4. Trade Schools
 5. K-12
 6. Private and Military
- C. MCCC Programs.
- D. T.V. Presentation Robot Tech 1980.

Learning Objectives:

The student will obtain an insight and understanding of the educational institution's structure and its development to meet the needs of our technical society.

Homework Assignment:

1. Prepare a list of career opportunities that were not in existence 25 years ago.
2. Based on presentation, project into the future and make a list of career opportunities that will be in demand.

2/3 WEEK III

- A. Overview of career cluster:
 1. Design technology.
 - a. Drafting (Chris Panos)
 - b. Graphic communication (Bill Meador)
 - c. Graphic reproduction (Roger Cherry)
 - d. Tour of "R" building.
 2. Inter-relationships between idea - design - production and communicating the idea.

Learning Objectives:

1. The student will be able to identify 4 major drafting and design career fields.
2. The student will be able to identify and develop an understanding of the career areas of graphic communication and their relationship to product design.
3. The student will be able to identify methods of graphic reproduction and the communications field.

Homework assignment:

Prepare a list of specific career positions in each of the three career clusters of design technology.

2/10 WEEK IV

A. Overview of the career cluster.

1. Mechanical technology (Ben Selleck)
 - a. Instrumentation
 - b. Materials
 - c. Manufacturing
2. Inter-relationships between idea - methods of production, qualification and use of product.

Learning objectives:

1. The student will be able to identify 4 major mechanical technology career fields.
2. The student will be able to identify the inter-related areas of instrumentation and manufacturing of product.
3. The student will be able to identify ferrous materials and their use in production of products.

Homework assignment:

Prepare a list of specific career positions in each of the three clusters of mechanical technology.

2/17 WEEK V

A. Overview of the career cluster.

1. Business Technology (Allan Levy)
 - a. Data processing (Allan Levy)
 - b. Accounting (William Callaghan)
 - c. Marketing (Allan Levy)
 - d. Clerical Science (Dirilda Shankie)
 - e. Overview of Business Area (Pat Chupailo)
2. Inter-relationships between financial - marketing - information and clerical operations of business

Learning objectives:

1. The student will be able to identify 4 major business technology career fields.
2. The student will be able to identify the inter-related fields of business technology.

Homework assignment:

Prepare a list of specific career positions in each of the 4 career clusters for business technology.

3/3 WEEK VII

A. Overview of the career cluster (Sam Petros)

1. Nursing
2. Medical Technology
3. Medical and Dental Office Practice

3/10 WEEK VIII

Tour of Harrison Community Hospital

Spring Break and Human Potential Workshop

- 3/31 WEEK X
Selection of occupational areas for in-depth discussion.
- 4/7 WEEK XI
Field trip to the Society of Manufacturing Engineers at Cobo Hall. The students were assigned a short paragraph describing their observations.
- 4/14 WEEK XII
Discussion of Students' Occupational areas.
- 4/23 WEEK XIII
Discussion of MCCC Job-Placement Services (Adam Mick)
- 4/28 WEEK XIV
Discussion of MCCC Co-op Programs (Paul Gould)
- 5/5 WEEK XV
Discussion of Students' Occupational areas with focus on their anxieties and needs.
- 5/12 WEEK XVI
Evaluation day. Students' discussed their grades and their experiences with the instructor.

D. Student Evaluation

The tours of the MCCC Occupational areas during the first half of the semester seemed useful to the majority of students. Of course, no one tour would apply to every student's interest.

TABLE 47 Tours

	The experience was valuable to me.				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
The tour of the Design and Graphics areas (R-Bldg.).	12	3	1	1	13	3	0	1
The tour of the Mechanical Tech. areas (T-Bldg.).	11	5		1	13	3	0	1
The tour of the Business areas.	11	4	2	0	12	4	1	0
The tour of the Allied Health areas (Center Campus).	9	5	2	1	12	4	1	0

The majority of students likewise considered the field trips useful.

TABLE 48 Field Trips

	The experience was valuable to me.				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
The Field trips	10	4	3	0	10	5	2	0

The guest speakers also maintained the interest of most students.

TABLE 49 Guest Speakers

	The experience was valuable to me.				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
The guest speakers	6	9	2	0	7	8	2	0

The classroom discussions of occupations which took place, for the most part, in the last weeks of the course appeared to be useful to the large majority of the ITC class.

TABLE 50 Classroom Discussions

	The experience was valuable to me				The experience was valuable to enough people to be included in the program the next time it is offered.			
	SA	A	D	SD	SA	A	D	SD
Classroom discussion of various occupational areas at M.C.C.C.	11	3	3	0	10	5	2	0

When asked to suggest improvements for future ITC courses, most students volunteered positive comments. Nevertheless, several students thought that the time allotted to the ITC course could be reduced or that the ITC course could be combined with the Counseling course. The students' suggestions have been listed below.

"Future training could be improved in the Introduction to Careers Course by..."

- (5) - changing nothing
- (6) - reducing the amount of time allotted to the course
- (2) and/or to alternate with or combine with the counseling course
- (4) - including more field trips
- (1) - allowing students to experience a day in actual training classes for their future programs
- (4) - (Praise for instructor and/or course)
- (1) - (Criticism of need for course)

F. Comments on Last-Day Impromptu

Four more positive student comments were volunteered in the final assignment of the writing class. A couple are quoted:

("What do you think that you have gotten out of the Basic Skills Program?")

1. "Much helpful advice came from ITC. She thinks it helped show (her) various courses and explained many different job opportunities."
2. "Furthermore, she liked the different types of careers in ITC class. That was a help to her in choosing types of courses for next semester."

Only two criticisms were volunteered.

("What more do you think you could have gotten out of the Program?")

Two students commented that the ITC component could have been reduced.

G. Instructor's Suggestions

The ITC 292 Instructor, Chris Panos, had several judgments pertaining to future career orientation courses:

1. The course is a good idea for CETA students.
2. The time given to the course might be cut back.
3. No grades should be required for the course.
4. More field trips should be planned.
5. Assignments should be kept short.
6. Personal interviews are useful to help the students set reachable goals.
7. The group should be split up into smaller groups, each of which could concentrate upon tours, field trips, and discussions which would fit the interests of its members.

H. Summary

1. Student evaluations indicate that the students considered the ITC 292 tours of MCCC occupational areas, the field trips, the guest speakers and the classroom discussions to have been useful.
2. Some students and the instructor concurred that less time might have been given to the course.
3. Some students and the instructor would have preferred more field trips.
4. The judgments of a few students and the instructor suggest that the class might be divided into sub-groups for some projects to improve the likelihood that each student will be studying an occupational area which interests him/her.

XV. GENERAL CONCLUSIONS

Conclusions have been inferred from the experience of planning elements of the program and from teaching specific components. These specific conclusions may be examined in the summaries of the following divisions of this report:

<u>Program Design and Sequence</u>	pp. 48-49
<u>Teaching the Reading/Study Skills Course</u>	pp. 101-110
<u>Teaching the Writing Course</u>	pp. 151-152
<u>Teaching the Mathematics Course</u>	pp. 166-167
<u>Teaching the Counseling Course</u>	p. 182
<u>Teaching the Introduction to Technical Careers Course</u>	p. 190

In addition, some general conclusions have been defined or re-emphasized here.

A. Team Approach

1. An intensive team approach to the remediation of the academic difficulties of basic skills students is effective.
2. The development of a team approach to a basic skills program requires a considerable expenditure of time for research, discussion, planning, and reporting.
3. A team approach requires the kind of sympathetic and responsive administrative support which was given to the Basic Skills Team.
4. A team approach requires a compatibility of philosophy, attitudes and temperament among team members.

B. Program Components

1. A reasonable combination of academic courses in a basic skills program includes reading/study skills, writing, and math.
2. Academic courses in a basic skills program can be effectively complemented by a course which encourages vocational orientation.
3. Academic courses in a basic skills program can be effectively complemented by a counseling course which encourages self-discovery of interests, aptitudes, and personal utilization of institutional resources.

C. Counseling

1. Personal counseling, encouragement, and prodding is important to retain students in a basic skills program.
2. Once adult basic skills students have made vocational choices, they can only with difficulty be encouraged to review those choices in light of new discoveries about their own preferences and aptitudes.
3. With a counselor's cooperation, academic instructors can integrate elements of vocational guidance into academic courses.

D. Tutoring

1. Tutorial assistance has a strong positive influence on the academic progress of basic skills students.
2. Tutors are important to gain knowledge of the academic and personal problems of basic skills students.
3. One effective system of using tutors is to have the same tutors be available for help in all of the academic courses and working labs of a basic skills program.

E. Course Design

1. The length of the program is an important consideration.
 - a. A semester-long pre-vocational basic skills program can be effectively maintained.
 - b. However, personal pressures and problems may discourage productivity during a semester-long program.
2. A thirty-hour instructional week can be effective.
3. A seven-hour instructional day can be effective.
4. The pattern of alternating instruction periods with working labs is highly useful.
5. A semester-long Basic Skills program which is introduced in the Spring term may lead to difficulties for some students who (a) may be obliged to undertake accelerated summer courses or (b) may be obliged to defer important vocational classes until the Fall term.

F. Effects of Class-sized Group Upon Student Behavior

1. A class-sized Basic Skills group may generate some positive mutual support.
2. A class-sized Basic Skills group may generate some juvenile behavior.

G. Selection of Students for a Basic Skills Program

1. A useful criterion for the selection of students for a Basic Skills group is the 7th - 9th grade range on the composite score of the Nelson-Denny Reading Test.
2. A pre-selection interview is essential to introduce the candidates to the purposes and requirements of the program and to determine their interest in it.

H. Course Procedures

1. Productivity is enhanced by clear definitions of the program's purposes at the beginning and throughout the semester.

2. Clear definitions of attendance and promptness policies, and consistent enforcement of them, will enhance retention.

I. Teaching Methods

1. Methods of constantly varying short lessons and utilizing self-pacing materials will help to promote attentiveness and interest.
2. Classwork can often be effectively adapted to vocational interests.

J. Follow up

1. Personal counseling and encouragement after the conclusion of the basic skills program is important to enhance the students' chances of success.
2. Mutual support of the Basic Skills students after the conclusion of the program can be encouraged.

XVI. RECOMMENDATIONS

Some recommendations may be made as a result of the experiences of the Basic Skills program.

A. Cooperation with CETA sponsor

1. If a CETA sponsored program is planned, the instructors should acquaint themselves with the sponsor's guidelines, its selection techniques, and its experiences with similar programs.
2. The instructors and the CETA sponsor should develop a clear mutual understanding of the purposes and limitations of the program.

B. Selection of Candidates

1. The criteria for selection for a Basic Skills program should be as homogeneous as possible.
2. Selection criteria should be influenced by the learning requirements of the students' future courses.
3. A minimum criterion for a Basic Skills program should be the seventh grade level of the composite score of the Nelson-Denny Reading Test.
4. Selection should follow an interview of the student by the instructors which would clearly inform him of the purposes and requirements of the program and which would determine the students' interest in the program.

C. Program Components

1. The academic core of a Basic Skills program should be math, reading/study skills, and writing.

2. The academic courses should be complemented by a counseling effort.
3. The academic courses should be complemented by a vocational orientation effort.
4. Two types of design should be considered in planning (a) a program for students with similar vocational goals (b) a program for students with diverse vocational goals.
 - (a) A program for a group with similar vocational goals should include the academic courses plus a vocational course which would introduce students to the specific possibilities of the vocation in addition to some practical experience.
 - (b) A program for a group with diverse vocational goals should include the academic courses plus a course which would acquaint students with various vocational possibilities.

D. Counseling

1. Two alternatives for introducing the counseling effort should be studied: (a) presenting a counseling course as a distinct component, and (b) integrating the counseling effort with the academic effort.
 - (a) A Counseling Course, if presented as a distinct component of the program, should include elements of personal assistance, self-discovery, and vocational orientation.
 - (b) If the counseling lessons are integrated with academic lessons, the counselor might provide academic assistance.
2. The counseling effort should extend beyond the classroom to entail monitoring of absences, tardinesses, and personal difficulties which might interfere with student achievement.

E. Tutoring

1. Tutors should be considered essential to a Basic Skills program in order to provide personal academic help and informal encouragement and guidance.
2. If possible, the same set of tutors should be available for all of the academic courses and working labs.

F. Program Design

1. Eight-week and twelve-week programs should be studied as alternative to semester-length programs.
2. A thirty-hour instruction week should be planned.
3. A seven-hour day should be planned.
4. The schedule should provide for some free study time with instructors or tutors present.

5. In the academic courses, instruction periods should be alternated with working labs.

G. Starting Point

1. The effects of starting Basic Skills programs at various times of the school year should be carefully considered.
2. A Basic Skills program should probably not be initiated in the Spring term because it might oblige students who complete the program to undertake accelerated summer courses.
3. A Basic Skills program might best begin in the Fall term because, upon its completion, students could soon begin vocational courses at the pace for which the courses are usually designed.

H. Faculty Load

1. The assignment to a Basic Skills program - especially a new one - should take into account the time which a teacher must take to perform research to original lessons, to provide personal attention to students, to prepare records, and to meet with the other teachers of the program.
2. The recommended load for a faculty member engaged in designing and developing a Basic Skills program should consist of program duties plus one other section which might serve as a control group.

I. Course Procedures

1. A clear attendance and tardiness policy should be presented to the students at the beginning of the semester, and it should be carefully enforced.
2. The Canfield Learning styles inventory - or a similar instrument - should be administered early in the semester to discover the students' preferences and expectations.
3. A system of pre-post tests should be devised to provide objective evidence of student progress.
4. A student evaluation instrument should be employed to provide evidence of student judgments.
5. If possible, control groups should be identified to allow objective comparisons.

J. Methods

1. Academic lessons should relate to vocational interests as directly as practical.
2. Self-pacing materials should be utilized to the limits of practicality.

K. Follow-up

1. Student scores, grades, and subsequent progress should be monitored on a continuing basis in order to provide measures of success and to encourage improvements in Basic Skills programs.
2. Counseling and guidance of Basic Skills students should extend beyond the semesters' end.

L. Dissemination

1. Experiences and findings should be communicated to the general faculty.
2. Experiences and findings should be exchanged with other institutions which have developed Basic Skills programs.

Entry Reading Levels Required for CETA Students in Five Technical Programs

CETA students are commonly placed into five technical education programs at MCCC: Automotive Mechanic, Climate Control, Copy Prep and Type Setting, Drafting, or Quality Control. In Copy Prep and Type Setting, students are not required to study-read textbooks. In Drafting, only one course (EDT 116) requires extensive reading. In the other three programs, however, much study-reading is required for a majority of the courses.

Consequently, in order to determine what entry reading skills CETA students would need in order to compete with other students in those programs requiring reading, the textbooks used during the first module of the first trimester or semester were analyzed for readability.* Gunning's Fog Index was used for this purpose.

Basically, this index measures readability according to two factors: sentence length and vocabulary. (Passages that have long sentences and/or many polysyllabic words are high in reading level.) In order to determine the readability of a textbook, three representative passages are analyzed for these factors. The results indicate average readability in grade level as well as the range of readability found in the text.

Computing the average readability for these textbooks by program reveals the entering reading grade levels which CETA students must possess in order to be able to study-read for their courses:

<u>PROGRAM</u>	<u>EXPECTED READING GRADE LEVEL</u>
Automotive Mechanic	11.4
Climate Control	12.6
Drafting (one course only)	15.3
Quality Control	13.9
Copy Prep and Type Setting	NONE

An examination of the ranges of readability, however, shows that

Automotive Mechanic students could encounter passages as high as 17.8 grade level; Climate Control students, as high as 18.3 grade level; Drafting students, as high as 19.1 grade level; and Quality Control students, as high as 17.1 grade level.

AUTOMOTIVE MECHANIC (TRIMESTER I, First 7 weeks)

COURSE	TEXTBOOK	Range of Readability	Average Readability
ATA - 120	Crouse, William H. <u>Automotive Mechanics</u> . New York: McGraw-Hill, 1975.	10.1-12.4	10.5
ATA -110 ATA - 111	Abbott, Sheldon L. <u>Automotive Brakes</u> . Encino, California: Glencoe, 1977.	10.1-17.8	12.3
ATA - 126	Crouse, William H. and Donald L. Anglin. <u>Automotive Fuel, Lubricating, and Cooling Systems</u> . New York: McGraw-Hill, 1976.	10.8-11.6	11.3
ATM - 115	Henrix, T.G, and C.S. LaFavor. <u>Mathematics for Auto Mechanics</u> . Albany, New York: Delmar, 1978.	10.8-12.4	11.6

*except for the Drafting course (EDT 116) which is offered during the first eight-week module of the second semester.

QUALITY CONTROL (SEMESTER I - First 8 weeks)

COURSE	TEXTBOOK	Range of Readability	Average Readability
TMT 106	Ewen, Dale and Michael A. Topper. <u>Mathematics for Technical Education</u> . Englewood Cliffs, New Jersey: Prentice-Hall, 1976.	10.8-16.8	13.4
MCR 101	Busch, Ted. <u>Fundamentals of Dimensional Metrology</u> . Albany, New York: Delmar, 1964.	11.6-17.1	15.1
DBP 150	Ihne, Russel and Walter Stroeter. <u>Machine Trades Blueprint Reading</u> . Chicago: American Technical Society; 1972.	11.0-14.16	13.08

CLIMATE CONTROL (SEMESTER I - First 8 weeks)

COURSE	TEXTBOOK	Range of Readability	Average Readability
CCT 120	<u>Brazing: How and Why.</u> Benton Harbor, Michigan: Whirlpool Corp., 1969.	8.2-11.9	9.5
	<u>Laboratory Exercises.</u> Warren, Michigan: M.C.C.C.	11.8-17.3	14.5
	<u>Refrigeration Fundamentals.</u> Benton Harbor, Michigan: Whirlpool Corp., 1969.	9.3-10.3	9.7
CCT 120 CCT 140 CCT 170	<u>Air-Conditioning and Refrigeration Institute: Refrigeration and Air Conditioning.</u> Englewood Cliffs, New Jersey: Prentice-Hall, 1979.	16.6-18.3	17.1
CCT 160	<u>Reid, Hugh B. Sheet Metal Layout Simplified.</u> Vol. 1. Detroit: Sheet Metal Layout Books, 1954.	13.7-17.4	15.1
CCT 140	<u>Repair Procedures for Refrigeration Sealed Systems.</u> Benton Harbor, Michigan: Whirlpool Corp., 1969.	8.2-13.3	11.7
	<u>Laboratory Exercises.</u> Warren, Michigan: M.C.C.C.	10.7-18.2	10.9
CCT 170	<u>Langley, B.C. Electric Controls for Refrigeration and Air Conditioning.</u> Englewood Cliffs, New Jersey: Prentice-Hall, 1974.	10.4-13.4	12.3

DRAFTING (SEMESTER II, First 8 weeks)

COURSE	TEXTBOOK	Range of Readability	Average Readability
EDT 116	<u>Johnson, Harold V. Manufacturing Processes: Metals and Plastics.</u> Peoria: Chas. A. Bennett Co., 1973.	10.7-19.1	15.3

ANALYSIS OF ACADEMIC PREPAREDNESS FOR FORMER

C.E.T.A. STUDENTS - 1977- 79

In order to persevere and complete successfully the programs into which they are placed, C.E.T.A. candidates must possess -- among other things -- at least the minimum entry reading levels for those programs (as determined in the previous analysis). In fact, a reading handicap may very well be one of the factors contributing to the high drop out rate among former C.E.T.A. students at M.C.C.C.

However, available reading test score data collected from 1977-79 reveals that only 20.9% of the former C.E.T.A. students at M.C.C.C. during those years possessed the reading ability necessary for the programs they entered.

The following tables summarize the composite scores on the Nelson-Denny Reading Test by grade level, indicating by a line of asterisks the separation between those students who were academically prepared in reading from those who were academically deficient in reading: --

AUTO MECHANICS (Required level - 11.4)

1979

N = 15

GRADE LEVEL	NUMBER OF STUDENTS
-------------	--------------------

14 +	2	PREPARED = 5 = 33%
13 - 13.9	1	
12 - 12.9	2	
11.6 - 11.9		

11 - 11.5		DEFICIENT = 10 = 67%
10 - 10.9	2	
9 - 9.9	1	
8 - 8.9	3	
7 - 7.9	1	
-7	3	

CLIMATE CONTROL (Required level = 12.6)

1977 - 78 N=17

GRADE LEVEL	NUMBER OF STUDENTS	
14 +	2	
13 - 13.9		PREPARED = 4=23.5%
12.6 - 12.9	2	

12 - 12.5	1	
11 - 10.9	1	
10 - 10.9	6	DEFICIENT + 13=76.5%
9 - 9.9	2	
8 - 8.9	3	
7 - 7.9		

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DRAFTING (Required level = 15.3)

1977 - 78

GRADE LEVEL : NUMBER OF STUDENTS N = 13

14 -	3
13 - 13.9	
12 - 12.9	2
11 - 11.9	4
10 - 10.9	
9 - 9.9	1
8 - 8.9	3

DEFICIENT = 13-100%

QUALITY CONTROL (Required level =13.9)

1977 - 78 N=6

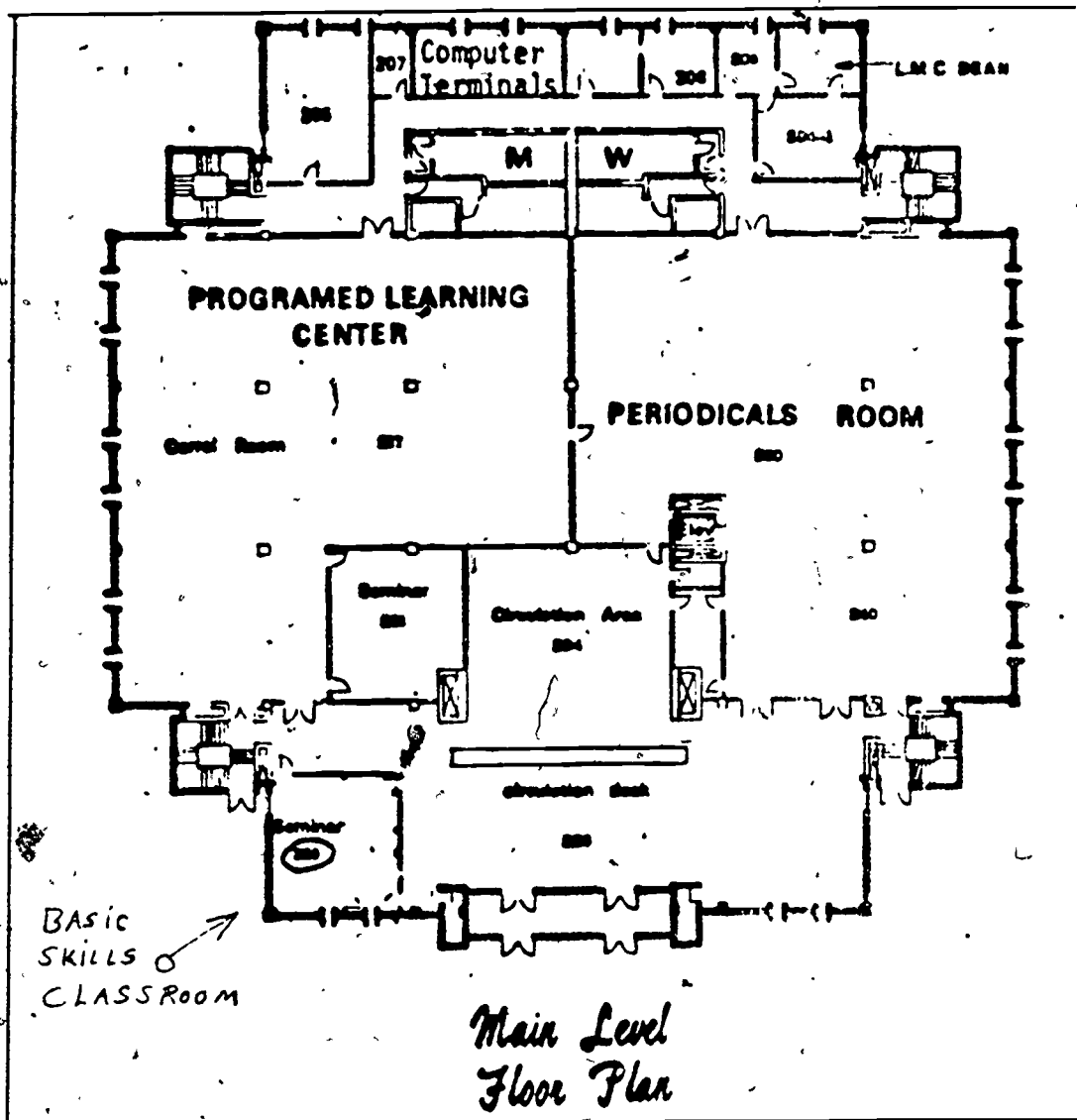
1979 N = 11

GRADE LEVEL	NUMBER OF STUDENTS	NUMBER OF STUDENTS	
14+	1	2	Prepared= 3=17.7%
13.9			

13 - 13.8			
12 - 12.9		2	
11 - 11.9	3	1	Deficient= 14=82.3%
10 - 10.9		2	
9 - 9.9	1	2	
8 - 8.9	1	2	

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The room for CETA classes and the reading and writing labs was located on the first floor of the Learning Media Center. This room, J-229, was across the hall, from the Programmed Learning Center.



The room had tables, rather than desks. The tables were set up in a U-shape to encourage exchanges between students. This room, J-229, although used for reading and foreign language classes, housed the reading and writing materials of the CETA project. Files and cabinets were added to accommodate the additional materials of the reading and writing "labs."

In addition to the classroom, the CETA students made use of the Programmed Learning Center. The Programmed Learning Center included 120 learning stations. Each learning station was equipped for use with electrical equipment such as television sets and tape recorders. One video tape playback unit, fifty guided and/or controlled readers, and forty tape players were available. Additionally, the Programmed Learning Center had a variety of software.

On the far side of the Programmed Learning Center from the classroom was the computer terminals room.

INTERVIEWER'S GUIDE

I. Overview of the program and its components.

- A. Reading/Study Skills
- B. Math
- C. English
- D. Career Counseling

II. Explanation of the schedule to be followed.

III. Discussion of the student's previous educational experience.

- A. Strong subject areas
- B. Areas in need of development

IV. Discussion with the student if this development program would serve his needs.

V. Discussion of the expectations the team will have of the student.

- A. Willingness to work
- B. Good attendance
- C. Commitment to developmental education prior to a technical program.

VI. Discussion of the rewards to be derived

- A. Hourly pay as determined by CETA
- B. Inclusion in a technical/skill development program upon completion.
- C. Development of basic skills to serve life-time needs.

Appendix D Course Descriptions
RDG 292 - Reading and Study Skills

The reading - study skills course will help you learn ---

READING SKILLS:

- how to adjust your rate of reading to fit your purpose for reading or the difficulty of the material.
- how to speed up your reading when it is good to do so.
- how to understand more of what you read.
- how to concentrate when you read.
- how to remember more of what you read.
- how to increase your vocabulary.

STUDY SKILLS:

- how to solve logical problems.
- how to study a textbook chapter.
- how to underline efficiently.
- how to take notes from reading and listening.
- how to memorize.
- how to take different kinds of tests.

MTH 292 - MATHEMATICS

Math 292 is a math class covering basic arithmetic including addition, subtraction, multiplication, and division of whole numbers, fractions, decimals and percents. Also some introductory skills on algebra and geometry will be covered. A lot of problems in applications to job situations and life situations will be worked. For example, we'll learn to read charts and graphs that might appear in the news paper or work manual. We'll learn how to estimate the tip on a restaurant bill or the amount of paint needed to cover a room and the like.

ENG 292 - WRITING SKILLS

The writing course will help you to improve your writing for your vocational classes and your eventual job. You will practice writing clear sentences and clear, organized paragraphs. Toward the end of the course, you will practice writing letters and short reports.

You will not get much grammar, just enough to help your writing. But you will learn some things about punctuation. As much as possible, the assignments will be related to vocational subjects.

COUN 292 - CAREER AWARENESS

Counseling 292 will be a career awareness course that will focus on getting to know yourself better. Emphasis will be placed on clarifying your career interest, abilities and what you want from a job/career. This course will work in conjunction with ITC 292.

ITC 292 - ORIENTATION TO OCCUPATIONS

ITC 292 will be a systematic exposure to the wide range of career programs available at Macomb. Even if you are decided about a career this course will give you more information as to what you will do on the job. Information about the job will be combined with actual lab experiences you will have in the areas of design and mechanical technology, business and allied health.

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CAREER IDENTIFICATION CENTER	COUNSELING RECORD AND PERSONAL INFORMATION	DATE:
LAST NAME · FIRST NAME · MIDDLE INITIAL		SSN
ADDRESS (No. and Street, City and Zip Code)		DATE OF BIRTH
		TELEPHONE NO

SECTION B - EDUCATION AND TRAINING

TYPE OF SCHOOL	NAME OF SCHOOL	LOCATION (City and State)	DATES ATTENDED		CIRCLE HIGHEST GRADE COMPLETED	MAJOR COURSE OR SUBJECT
			TO	FROM		
High School(s)					9 10 11 12	
College(s) or University(ies)					1 2 3 4	General <input type="checkbox"/> College Prep <input type="checkbox"/> Vocational <input type="checkbox"/>
Other (Include Civilian & Military)						

SECTION C - SPARE TIME ACTIVITIES

LIST ANY HOBBIES OR OTHER SPARE TIME ACTIVITIES (Such as sports, church, drawing, collecting, hospital volunteer, reading, etc.)

SECTION D - HEALTH

HAVE YOU BEEN ADVISED OF ANY DISABILITY THAT MIGHT HINDER YOU IN ANY ACTIVITY
 NO YES (If yes briefly describe:)

EMPLOYMENT SINCE LEAVING SCHOOL

GIVE NAME OF JOB AND TELL WHAT YOU DID (Include military exp., if any) (Start with current job)	DATES	
	FROM	TO

SECTION F - EDUCATIONAL/VOCATIONAL PLANS

WHAT KIND OF WORK HAVE YOU THOUGHT ABOUT THAT MIGHT INTEREST YOU?

CETA BASIC SKILLS PROGRAMAttendance Policy

To be assured of the most productive learning experience possible, a student has the right to expect that every class session will meet. If an instructor cannot meet a particular session, he will have arranged for a substitute or he will have prepared useful class work in advance.

The student, likewise, must plan to meet every session. If a student cannot attend, he or she must let the instructor know, in advance, of the unavoidable circumstance and arrange to make up lessons. In case of illness or accident, the student must inform the instructor by telephone.

Two absences will necessitate a conference with the instructor. If a student has more than two unexcused absences, as judged by the faculty team, the team may recommend that the student be dropped from the program.

CETA policies oblige the instructors to keep strict attendance records. No one will, of course, be paid for any class time which he or she has missed.

Promptness Policy

The student has the right to expect that each class session will meet on time and be ready for business.

The student also has the right to expect that classwork will not be interrupted or delayed by late arrivals. Therefore habitual tardiness will result in a conference with the instructor. If habitual tardiness persists, a student may be dropped from the program.

In any case, CETA rules penalize each tardiness. If a student enters after the beginning of the hour, he or she will be paid only from the next quarter of the hour. For instance, if a student joins the class at 8:05 a.m. he or she will be paid only from 8:15 a.m. If he or she enters at 8:17 a.m.; the student will be paid only from 8:30 a.m.

Early departures must also be docked. An instructor may assign independent study out of the classroom; however, in such a case, the student must make sure that the instructor knows where he or she is. Furthermore, the student must return to the classroom before the end of the hour to get credit for that hour.

CETA Basic Skills Program
Promptness Policy,
Pg. 2

CETA policies are sharply defined to insure that each student gets the best opportunity to progress. *Those policies cannot be permitted to become lax.

Assignments

The student has the right to expect that assignments will be designed to fit his or her needs insofar as the instructors can perceive them. The student also has the right to expect that corrected assignments will be returned promptly.

In order to make personal progress, the student will be expected to complete assignments regularly. Because each student has different talents, each may not proceed at the same pace. Nevertheless, each will be expected to do his or her best to work on assignments at an appropriate rate.

If a student does not progress, the instructor will review the student's progress with him or her. Consistent lack of progress will be reviewed by the teaching team. In such a case, the student's status in the project may be re-appraised.

1/14/81
/vm

Appendix G

General Chronology

- October 15, 1979 Proposal by Dr. James Varty, Director of Cooperative Education and Special Services submitted to Special Services Unit Advisory Committee.
- November 5, 1979 Notice of endorsement of proposal by the Special Services Unit Advisory Committee to Dr. Varty.
- November 8, 1979 Proposal to Mr. Willard Walker, Michigan Department of Labor, Bureau of Employment and Training, Program Development and Information Division.
- April 18, 1980 Posting of positions for project English Instructor, Reading/Study Skills Instructor, Math Instructor, and Counseling Instructor.
- May 19, 1980 Notice of selection of Basic Skills Team.
- May 21, 1980 Administrative and teaching team discussed
 - division of responsibilities among team members
 - selection of internal and external consultants
 - housing of activities
 - documentation of activities
- May 27, 1980 Administrative and teaching team members, and representatives of the Mt. Clemens and Warren CETA offices discussed
 - division of administrative responsibilities
 - progress report format
 - organizing and filing of materials
- May 20, -
June 17, 1980 Teaching team members
 - surveyed pertinent literature in South and Center Campus libraries
 - initiated ERIC search at Macomb Intermediate School District offices
 - conducted a telephone survey of community and senior colleges which had listed special developmental programs in their hand-books
 - visited the Macomb CETA office in Mt. Clemens
 - accumulated documents and ordered books cited as influential research
 - developed theoretical teaching models
- June 11, 1980 Administrative and team members discussed
 - evaluation techniques
 - visitation sites
 - selection of consultants
 - utopian model of Basic Skills Program

June 17, 1980

Administrative and teaching team and CETA representatives discussed

- definition of target population (7th - 9th grade level scores on Nelson-Denny reading test)
- weekly schedule (30 hrs. per week for 16 weeks)

June 18 -

July 16, 1980

Teaching team members

- continued ERIC search
- surveyed pertinent literature in Wayne State University Library
- began telephone survey of Michigan CETA organizations
- surveyed descriptions of testing materials
- recommended postings for internal consultants

July 17 -

August 20, 1980

Teaching team members

- continued ERIC search
- continued survey of other pertinent sources
- continued telephone survey of Michigan CETA organizations

August 21 -

September 17, 1980

Administrative team members

- posted notices of positions for internal consultants
- initiated correspondence to possible external consultants

Teaching team members

- arranged for local visitations to basic skills CETA programs at Kellogg Community College, Kalamazoo Valley Community College, and Southwestern Community College on September 25 - 26.
- arranged for attendance at the Developmental Studies Conference in Atlanta, Georgia, on November 6 - 8.
- began formulation of testing program, phases of the basic skills courses, and the weekly schedule of classes
- ordered free pamphlets

September 18 -

October 15, 1980

Team members

- visited Kalamazoo Valley Community College, Southwestern Community College, and Kellogg Community College, September 25 - 26
- wrote definitions of pertinent aspects of the visitations
- Jerry Brantley, math teacher, attended the conference of American Mathematical Association of two-year colleges in Washington, D.C., October 9 - 12
- recommended selections of internal consultants
- Bart Flumano, Counseling Teacher, wrote a definition of the issue of integrated counseling vs. a distinct counseling course
- contacted Phoebe Helm, Director of Developmental Education, Triton College, River Grove, Illinois, in regard to a visitation on October 20

September 18 -
October 15, 1980

Continued

- prepared course designs.
- defined as specific concerns relative to course designs:
 - incentives
 - course length
 - tutorial system

October 15, 1980

Administrative and teaching team and CETA representatives

- selected external consultants:
 - Dr. Martha Maxwell, University of California, Berkely
 - Dr. John E. Roueche, University of Texas, Austin
- selected classroom (J-229) and discussed possibilities for files to be used for records and teaching materials

October 20, 1980

Teaching team members visited the Learning Activities Center, Triton College, River Grove, Illinois

October 22, 1980

Teaching team members prepared definitions of the pertinent aspects of the Triton visitation

October 31, 1980

Administrative and teaching team members held first meeting with internal consultants to discuss

- purpose of the program
- design of the program
- contributions of internal consultants

October 31, 1980

Teaching team members prepared a report which was forwarded to external consultant, Dr. John E. Roueche in regard to

- testing program
- course designs
- questions and concerns

November 5 - 8,
1980

Administrative and teaching team members attended the Developmental Studies Conference in Atlanta, Georgia, November 5 - 8

November 6, 1980

Teaching team members met external consultant Dr. John E. Roueche

- Mathematics teacher, Jerry Brantley, met with Milton Spann, Appalachian State University, to discuss questions of developmental mathematics

November 10 - 11,
1980

Teaching team members prepared definitions of pertinent aspects of their discussions with Dr. John Roueche, Milton Spann, and the Developmental Studies Conference

November 12, 1980

Teaching team members met with internal consultant, Robert Marrs of the Center Campus Placement Office, in regard to problems of test anxiety

- November 14, 1980 Administrative and teaching team members met with internal consultants to discuss their suggestions including an occupational orientation program designed to supplement the counseling component
- November 19, 1980 Administrative and teaching team members and CETA representatives discussed
- reports from the Developmental Studies Conference and Triton College
 - meetings with internal consultants
 - the testing "package"
 - the first-week plan
 - the occupational orientation course
 - the visit to campus of Dr. Martha Maxwell on November 25
 - the selection process
- November 25, 1980 Administrative and teaching team and other members of the administration and faculty met with Dr. Martha Maxwell
- November 26, 1980 Teaching team members defined pertinent aspects of discussions with Dr. Martha Maxwell
- December 2, 1980 Administrative and teaching team members discussed with internal consultants Paul Gould of Industrial Coop Education, and, Ben Selleck, of Technical Education, their plans for an occupational orientation course to be added to the Basic Skills program and to be titled Introduction to Technical Careers
- December 4, 1980 Teaching team met with internal consultant Robin Avery, English Department, to discuss possibilities of record keeping by computer
- November 20 -
December 17, 1980 Teaching team members
- held discussions with Diane LaVeglia, Tutor Coordinator for Special Services, in regard to tutorial system
 - selected texts
 - developed materials to assist interviews of candidates
 - descriptions of the courses and course requirements, and a questionnaire
 - interviewed 30 candidates
 - selected 16 candidates
- December 17, 1980 Administrative and teaching team and CETA representatives met to discuss
- the ITC course
 - the selection and use of tutors
 - the processing of candidates
- December 18 -
January 16, 1981 Counseling teacher, Bart Fiumano, redesigned the Counseling Course to accommodate the ITC Course
- administrative team selected Chris Panos, of Technical Education, to teach the ITC course

December 18 -
January 16, 1981

Continued

- administrative team posted two positions for tutor technicians
- administrative team and teaching team interviewed candidates for tutor technician
- Linda Austerman and Frank Gunnip were selected for tutor technicians
- 20 more candidates were interviewed for the Basic Skills Program
- a final selection of 25 was made
- letters were written and mailed to the candidates who had been selected and those who had not

January 19, 1981

The Program began

- 21 of the candidates appeared
- 1 candidate appeared to inform team member that she would not be participating

First-day activities included

- introductions
- distribution of texts and materials
- discussion of attendance and lateness policies
- elaboration of course contents
- orientation to the campus
- testing
- interviews of other students
- the writing of paragraphs based on the interviews
- a talk on the importance of writing on the job by Leonard Rinke of Fisher Body
- Counselor Bart Fiumano called three missing students to determine why they had not begun the Program; two said they were ill and one had a transportation problem

January 27, 1981

Administrative and teaching team members met to discuss the beginning of the program

January 27 -
February 25, 1981

The teaching team

- proceeded with their courses on schedule
- met with Chris Panos, ITC instructor, to orient themselves to the direction of his class
- held a meeting with eight students who had acquired two absences or more

Counselor, Bart Fiumano

- arranged for Karen Rexin, of the financial aids office to visit class to provide help
- arranged for Cecelia Champion, college nurse to visit class to discuss basic health care and medical assistance programs
- assisted the students to take the Holland Self-Directed search to determine career objectives
- defined student concerns relative to the future of the CETA program

January 27 -
February 25, 1981

Continued

Reading/Study Skills Instructor, James Smarr, arranged for a collection of high interest, easy reading books from the library
- Internal Consultant, Art Wagner, assisted some writing students to practice with teaching computer
- two students dropped the program

February 25, 1981

The administrative and teaching team members and CETA representatives discussed
- course progress
- the two drops
- frequency of absenteeism (only ten students had not missed at all)
- charged emotional atmosphere, perhaps due to crowding, and to conducting most of the work in the same room

February 27, 1981

Administrative and teaching team meet with Internal Counselor to discuss progress of course

March

Teaching team members discuss problems and progress with students prior to Spring Break
- more emphasis to be placed on deadlines in mathematics and writing class

March 16 -
March 20, 1981

Spring Break

March 23 -
March 26, 1981

Bart Fiumano, counseling teacher, and Mary Preda, Counseling administer the Human Potential program to the Basic Skills group
Bart Fiumano administers aptitude and interests tests

March 25, 1981

Administrative and teaching team and CETA representatives discuss
- experiences of Human Potential program
- continuing problem of absenteeism
- adoption of deadlines for assignments

March 26 -
April 22, 1981

The teaching team developed student evaluation forms
Bart Fiumano, counseling teacher, helped students develop educational plans for summer and later.
- two students dropped

April 22, 1981

The administrative and teaching team and CETA representatives discuss
- dropped students
- absenteeism (14 of 21 missed at least once during the preceding two weeks)
- student evaluation forms

April 23 -
May 14, 1981

Two more students dropped (a total of 6 out of 24)

Bart Fiumano, counseling instructor, enrolled most of the students for summer school classes

The Teaching Team

- administered posttests
- administered student evaluations
- concluded the semester on May 14

May 21 -
May 23, 1981

James Smarr, Reading/Study Skills teacher, and Stuart Morton, Writing teacher, attended the Mid-American Association of Educational Opportunity Program Personnel Workshop in Chicago, Illinois

May 15 -
May 26, 1981

The Teaching Team

- evaluated posttests
- began final reports

May 26, 1981

Administrative and teaching team members and CETA representative

- discussed tentative findings
- discussed developmental conference to be scheduled in September ✓

NAME _____

PUT AN X NEXT TO THE STATEMENTS WHICH APPLY TO YOU AT THIS TIME.

1. Because English is not my native language, I have trouble reading and speaking English.
2. I do not like to read, but I know that I have to improve my reading skills.
3. I read all the time.
4. I do not read much at all.
5. I have difficulty pronouncing most words in anything I read.
6. The only words I sometimes have trouble pronouncing are big names or long new words.
7. I do not know how to use the pronunciation guide in a dictionary to figure out the pronunciation of new words.
8. Often, because I am a poor reader, I am too embarrassed to read a passage aloud in class, to prove a point.
9. I have difficulty spelling most words when I write.
10. When I read silently, I read word by word.
11. I read everything at the same rate.
12. I know I am a slow reader.
13. Almost everything I read--from the newspaper to text books--is hard for me to read.
14. I have difficulty understanding most things I read.
15. I can understand things I read for pleasure, but I have difficulty understanding assigned material.
16. I usually miss the main point that an author is presenting.
17. When I read, I am usually not conscious of the author's thought plan.
18. While reading, I am not conscious of paragraphs.
19. When I finish reading, I usually cannot remember what I have read.
20. I have a hard time concentrating on anything I read.

- 21. I have a hard time concentrating only on things I am required to read.
- 22. There usually are many words in a reading which I do not understand.
- 23. I usually just pass over difficult words without trying to figure out what they mean.
- 24. I have a very weak vocabulary.
- 25. I usually do not look over something I am about to read, before reading it.
- 26. When I read an assigned chapter, I start with the first word and keep going till I have to stop or until I finish.
- 27. When I study-read, I usually underline important ideas.
- 28. When I study-read, I take notes.
- 29. I usually take too many notes when I study-read.
- 30. In reading difficult material, I usually do not stop after a paragraph or section to summarize to myself what I have just read.
- 31. I do not usually use the study or review questions at the end of a chapter to test myself.
- 32. I do not know how to find books or articles on a particular subject in the library.
- 33. While reading, I usually am not aware of questions which arise in my own thinking about the material being read.
- 34. Prior to this semester, I have used a machine (controlled reader) to improve my reading.
- 35. I dislike using controlled readers.

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POSSIBLE ASSESSMENT INSTRUMENTS

SCREENING

<u>METHOD</u>	<u>FACTOR(S)</u>	<u>RESPONSIBILITY</u>
1. Nelson-Denny Rdg Test	Potential for Successful Achievement within 16 week Semester (3%ile-12%ile; total score)	CETA Local Prime Sponsors
2. Interview	Desire to pursue occupational curriculum at MCCC; Commitment to semester of intensive work on basic skills; Sufficiency of financial support; Freedom from serious personality or social disorders	CETA Local Prime Sponsors Basic Skills Team
<u>DIAGNOSIS</u>		
<u>READING</u>		
<u>METHOD</u>	<u>FACTOR(S)</u>	<u>RESPONSIBILITY</u>
1. Nelson-Denny Rdg Test	General Rate of Rdg; General Vocabulary Level; General Level of Comprehension; Overall Reading Ability	CETA Local Prime Sponsors
2. McGraw-Hill Rdg Test	Reading rate flexibility; Skimming ability; Scanning ability; Recognition of main idea; Recognition and understanding of specific facts; Awareness of paragraph structure and organization; Critical evaluation of tone, intent, validity of arguments; Discrimination of Fact vs. Opinion	Basic Skills Team
3. California Phonics Test	Word Attack Skills	Basic Skills Team

STUDY SKILLS

<u>METHOD</u>	<u>FACTOR(S)</u>	<u>RESPONSIBILITY</u>
McGraw-Hill Study Skills Test	Underlining Library Information	Basic Skills Team
Teacher-Made Test or McGraw-Hill Study Skills Test or Brown-Holtzman Survey of Study Habits and Attitudes	Study Skills (SQ3R, etc.)	Basic Skills Team
McGraw-Hill Study Skills Test or Whimbey Analyt- ical Skills Inventory	Problem Solving Abilities	Basic Skills Team
Teacher-Made Test	Dictionary Skills	Basic Skills Team
Teacher-Made Test	Structural Analysis Skills	Basic Skills Team
Xerox Effective Listening Pre- Test	Listening Comprehension	Basic Skills Team
Teacher-Made CLOZE Test(s) from textbooks.	Ability to Cope with content text material	Basic Skills Team
<u>MATHEMATICS</u>		
Teacher-made Test	Skills taught in each unit	Basic Skills Team

ASSESSMENT (CONTINUED)

<u>COMPOSITION</u>	<u>FACTOR(S)</u>	<u>RESPONSIBILITY</u>
<u>METHOD</u>		
Diagnostic Expository Essay	Organizing Skills Mechanical Skills	Basic Skills Team
McGraw-Hill Writing Test		
<u>LEARNING STYLES</u>		
Canfield Learning Styles Inventory Nowicki-Strickland Locus of Control Scale	Preferences in: conditions content mode Expectancy Level Internal - External Control	Basic Skills Team Basic Skills Team
<u>COUNSELING</u>		
Kuder D D	Interest Test	Counselor
Strong-Campbell	Interest Test	Counselor
Holland Self-Directed Search	Interest Test	Counselor
D. A. T.	Multiple Aptitude	Counselor
G. A. T. B.	Multiple Aptitude	Counselor
Gullford Zimmerman Temperament	Temperament	Counselor

APPENDIX J

THE HUMAN POTENTIAL -WORKSHOP

The McHolland version of Human Potential was used as part of the counseling component of this project. The group was divided in two with each group led by a counselor. (Mary Preda of the counseling department led one group while the program's counselor, Bart Fiumano, led the other group.)

- I. The McHolland approach has a very positive tone and is based on two principles:
 - A. All people have many talents and strengths of which they are not aware.
 - B. Through positively structured exercises we can become more fully aware of these talents and make use of them.

- II. The methodology systematically leads the individual through six essential experiences.
 - A. Unfolding - is a basic process whereby the participants get to know one another and themselves better. The emphasis is on sharing what the individual wishes to share with the group. Those aspects of the individual that are shared are the positive dimensions of the individual's history and personality. During this process the individuals in the group begin to realize what they have in common with the other members of the group.
 1. Basic unfolding - a three minute sharing of one's past.
 2. Empathy recall - an exercise whereby we remember what is common in others' backgrounds.
 3. Peak experience recall - positive yet critical experiences are remembered and shared.
 4. Mini-peaks - a review of small pleasures and satisfactions.

 - B. Achievement Analysis - is a structured exercise in which an individual first lists both major and minor achievements, and then using an evaluation grid looks for those conditions we deem necessary to consider something a success, achievement or strength.

 - C. Value Clarification - through both games and a study-exercise approach, the participants are assisted in identifying their values.
 1. Value Analysis Chart - a conscious analysis of values that is later used to point out "should" values.
 2. Values Auction - a games approach used to identify sub-conscious values.
 3. Structured Value Analysis - a series of questions and answers are reviewed by the group to help the individuals identify their operative values.

- D. Strength Acknowledgement - a structured exercise during which the now close-knit group exchange with one another those talents, strengths and abilities they see in one another. Often others will note talents in a person that he/she does not see in himself or herself.
- E. Goal Setting - a series of activities spaced throughout the program whereby the participants learn first how to set goals and then to achieve them. The participants learn the criteria for good goal setting then practice achieving goals based on these criteria. Goals are first set on a concrete basis then on a value-related basis.
- F. Life-Style Planning - this culminating activity has the participants review their strengths and values and establish some specific and achievable goals for themselves. Because the participants are now positively aware of their strengths and talents, they are able to set value-related goals with confidence.

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