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ABSTRACT

A study synthesized existing data and information on the characteristics of actual and potential dropouts and identified strategies and techniques employed in vocational programs in order to remedy basic skill deficiencies in these youths. During the study, a veriety of sources were examined, including school performance and job proficiency data, standardized test scores, various research studies, and research projects to address the skill needs of dropouts. Data from these sources revealed that the average performance of secondary vocational students on standardized basic skill measures is between the 35th and 40th percentile or about one-half a standard deviation unit below the average for all secondary students. The average performance of potential and actual secondary school dropouts is near the 25th percentile. Furthermore, the performance of dropouts in reading and math areas appears to be equally poor. It appears, however, that when potential and actual dropouts are afforded the opportunity to participate in vocationally oriented programs that have an integrated basic skills component, their basic skills attainment will usually increase substantially. Based on the study, recommendations were made calling for earlier certification of potential dropouts, for increased use of individualized instruction or materials, and for further research on the benefits and problems of innovative, flexible program delivery. (MN)

Research & Development Series No. 236

BUILDING BASIC SKILLS: THE DROPOUT

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FOREWORD

Vocational educators have been aware of the marked decrease in the quality and quantity of secondary-level students' basic skills for some time. Recently, their awareness has been heightened by the specter of increasing unemployment. The combination of few or no basic skills and no gainful employment paints a frightening picture of the future for students who have not enjoyed the full benefits of the educational system, either because they were inadequately served or because they opted to leave school. For these students, the problem is particularly acute.

This paper presents a synthesis of data and information on the characteristics of actual and potential dropouts; surveys empirical findings on the basic skills of dropouts and on how dropping out affects basic skills proficiency, employment, and earnings; and examines the possibility of enhancing the basic skills of dropouts through vocational training. In addition, the most frequently used and successful strategies and techniques employed in instructional programs with actual and potential dropouts are delineated according to a conceptual model structured on content, methodology, and organization.

Descriptions of secondary and postsecondary practices to reinforce basic skills or to remedy basic skills deficiencies should provide useful information to both practitioners and decision makers interested in strengthening basic skills through vocational training. A listing of recommendations for effecting positive change through vocational and basic skills instruction may yield insights into the establishment and support of a critically needed educational intention.

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EXECUTIVE SUMMARY

Basic skills are essential to successful participation in today's society. For example, they are crucial to acquiring further education and training, demonstrating employability and occupational competence, and attaining upward mobility. Given their importance to functioning in our society, basic skills represent a critical area of learning that should be fostered in all secondary education programs, including vocational education.

Analyses of school performance, job proficiency data, and standardized test scores suggest that the basic skills attainments of secondary vocational students in today's schools are declining. Precursory literature reviews, examinations of various research studies, and other efforts to address this problem have revealed that a serious lack of systematic information exists regarding such issues as (1) What level of basic skills attainment characterizes secondary vocational students? (2) How does participation in vocational education affect basic skills attainment, if at all? (3) How do the basic skills levels of vocational students compare with those of nonvocational students? and (4) What relationships, if any, exist among secondary students' basic skills, participation in vocational education, and such outcomes as completing school, earnings, employment, and securing additional training?

The study described in this report represents an attempt to assemble and summarize extant data that bear upon these issues. These data were secured through an extensive search of published studies as well as the solicitation of "off-the-shelf" data sets from a diverse sample of local- and national-level education agencies. During the course of the study, these data were processed and analyzed, and the results used as the basis for a series of conclusions and recommendations. The following are general conclusions and recommendations yielded by the data.

Conclusions

- The average performance of secondary vocational students on standardized basic skills measures appears to be somewhere between the thirty-fifth and fortieth percentiles (or about one-half a standard deviation unit below the average for all secondary students). Using the decision rules currently available, this discrepancy in average performance would be deemed both statistically and educationally significant.

- The basic skills levels of students in different vocational programs vary significantly. The performance of students enrolled in business is generally higher than that of students enrolled in agriculture, health, technical, and trade and industrial programs, which in turn is generally higher than that of students enrolled in distributive education and home economics.

- The average basic skills attainment of secondary vocational students is typically (1) significantly lower than the attainment of academic or college preparatory students and (2) comparable to the attainment of general students.

- The average performance of potential and actual secondary school dropouts appears to be at or near the twenty-fifth percentile or at a grade equivalence level of 5.4.

- The performance of dropouts in the reading and mathematics areas appears to be equally poor, and sufficient data are not available to reach any firm conclusions regarding other basic skills.

- The basic skills levels of high school dropouts average significantly lower than those of completers.

- When potential and actual dropouts are afforded the opportunity to participate in vocationally oriented programs that have an integrated basic skills component, their basic skills attainment will usually increase substantially.

Recommendations

- Additional research dealing with the ramifications of the "less than average" basic skills attainment exhibited by vocational students needs to be undertaken. The available data indicate that vocational students' basic skills levels are typically below average; however, they fail to yield significant insights regarding either the level of basic skills deemed essential for successful performance of various occupational tasks or the sufficiency of the basic skills levels exhibited by vocational students relative to such a set of "standards."

- Improved data collection and evaluation strategies related to the basic skills attainment of vocational students and associated instructional efforts need to be identified and utilized.

- Innovative and potentially effective strategies for incorporating basic skills instruction in vocational settings need to be either identified or developed and evaluated.

- When dealing with dropouts, particular consideration should be given—

  (1) to ensuring that the goals and objectives for the basic skills, vocational training, and career education components of any program are very clear and well "spelled out";

  (2) to identifying potential dropouts early (e.g., by the fifth grade), but in as unobtrusive a manner as possible;

  (3) to developing and evaluating instructional programs comprised of two articulated components, i.e., a presecondary and a secondary component;

  (4) to utilizing individualized instruction or materials and techniques that can be adapted for use via such a mode;

  (5) to exploring the benefits and problems of innovative, flexible program delivery; and

  (6) to researching and delineating the contributions of various support services to the overall effectiveness of program delivery.

- Additional monies need to be allocated to support the kinds of research and development activities noted above as well as to foster improvement in basic skills instruction in vocational settings, particularly at the local level.

INTRODUCTION

Dropout students, largely ignored for the past several years as a research topic, continue to pose serious problems not only for themselves as individuals, but for the general public as well. As a group, dropout students tend to feel frustration and hopelessness. As a group, they fail to retain entry-level jobs or to progress up the employment ladder. As a group, therefore, dropouts of all ages are more often than not counted among the chronically unemployed, publicly assisted, or delinquent. Vocational education, coupled with a strong basic skills program, is perhaps the only means available within the context of public education to address the dropout problem.

Studies indicate that by the time a potential dropout can be identified, efforts made to direct that student toward the completion of a college preparatory or vocational training curriculum usually fail. Frequently, potential dropouts are culled from academic programs and placed in vocational programs. This process is based on the assumption that students who are unsuccessful in academic pursuits will find vocational subjects more relevant and more manageable than academic subjects. It is only a matter of time before these potential dropouts become actual dropouts. Dropouts, when and if they return to the educational setting, usually do so for skill training.

It is in this framework that vocational educators are presented with a unique opportunity, for dropouts and potential dropouts lag furthest behind their peers in the area of the basic skills. They have learned too little and retained less [research on reading shows a gap of two to five years between the reading ability of vocational students and the mean readability of vocational texts (Karnes and Ginn 1976)]. Yet the basic skills are essential not only to occupational success, but also to successful integration into all aspects of society. Thus, by incorporating a basic skills component into vocational training and thereby addressing the affective as well as the cognitive domain, vocational education may be able to provide successful instruction in the basic skills, enhance the retention rate of potential dropouts, and improve the training afforded dropouts who have returned to the program.

IDENTIFICATION OF ACTUAL AND POTENTIAL DROPOUTS

Who Are the Dropouts?

At the turn of this century, only 11 percent of all high school-aged youths were actually in school (Thornburg 1974). By 1909, only 13 of every 100 children who enrolled in the first grade were still in school at age sixteen (Schneider 1981). Now, although approximately 90 percent of all high school-aged youths begin high school, approximately 30 percent of the students entering fifth grade will leave high school prior to graduation (Sewell, Palmo, and Manni 1981). This statistic takes into account the variability of the dropout rate from state to state and from urban to rural areas.

Although we have obviously seen a significant increase in the retention rate, the "dropout factor" remains a problem largely because our educational system has evolved from an elitist to a public stance in the eight decades since the turn of the century when only the wealthy were able to educate their children. Currently all youth are expected to attend school and to graduate. Some students can not cope with formalized school, consequently they "drop out" before graduating. A 30 percent dropout rate can perhaps be explicated by listing some of the characteristics of potential and actual dropout students.

Research indicates that the prototypical *potential* dropout displays the following characteristics:

- **Cognitive characteristics.** Potential dropouts typically—
  - are at least one year behind their grade level in reading and mathematics achievement;
  - are academically below average and have a trend of declining grades;
  - exhibit a lack of goal orientation in school;
  - are classified as slow learners (IQs of 75 to 90) or have a mean IQ of 90; and
  - seldom question or reason critically.
- **Affective characteristics.** Potential dropouts typically—
  - demonstrate failure syndrome by habitually refusing to try and by being easily discouraged;
  - manifest low self-esteem;
  - are categorized by teachers as uncooperative, inattentive, and unmotivated;
  - display an active dislike of school;
  - feel alienated, isolated, insecure, and inadequate;
  - do not participate in school affairs;
  - are socially immature; and
  - are not accepted by teachers.

- **Other characteristics.** Potential dropouts typically—

  - have poor attendance records;
  - are older than their grade-level peers;
  - come from low socioeconomic backgrounds frequently accompanied by a lack of parental emphasis on the importance of education; and
  - have parents whose own educational attainment level is low.

Research indicates that the prototypical, *actual* dropout displays the following characteristics:

- **Cognitive characteristics.** Dropouts typically—

  - score low on intelligence tests (mean IQ = 90);
  - have repeated at least one grade;
  - have limited academic success accompanied by poor academic performance; and
  - read poorly, have poor computational skills, and tend to show little or no improvement in either area.

- **Affective characteristics.** Dropouts typically—

  - are loners and feel alienated from the school environment itself, from teachers, and from peers;
  - are not accepted or respected by teachers;
  - tend to lack interest in school or schoolwork;
  - have a low self-concept, evidence little satisfaction with self, and exhibit characteristics of social immaturity; and
  - are either hostile and unruly or passive and apathetic.

- **Other characteristics.** Dropouts typically—

  - are sixteen to seventeen years of age and are older than their classmates at the time they leave school;
  - are members of low income families in which neither parent finished high school;
  - are from weak or broken homes;
  - are not encouraged by parents to stay in school or are actually encouraged by them to leave school to contribute to family support;
  - tend to be members of a minority group;
  - display excessive absenteeism or irregular attendance; and
  - do not participate in extracurricular activities.

Empirical Data Regarding the Basic Skills of Dropouts

Nineteen studies were identified that contained empirical data dealing with the following questions or issues concerning dropping out of school and basic skills proficiency:

- What levels of basic skills attainment are exhibited by both potential and actual secondary school dropouts?

- How do the basic skills levels of secondary school dropouts compare with those of completers?

- What changes, if any, are observed in the basic skills levels of potential and actual dropouts who are afforded the opportunity to participate in some form of basic skills/vocational education program?

- What effect does dropping out of school have on selected vocational education outcomes (e.g., earnings and employment)?

In thirteen of the nineteen studies cited, subjects participated in some form of vocationally oriented training effort. In the remaining studies they were simply "tracked" across varying periods of time, and no direct interventions were undertaken other than to collect pertinent project data.

In relation to the initial issue cited previously, the major question posed was, At what levels of basic skills are potential and actual secondary school dropouts functioning?" An associated concern was, "Are the performance levels exhibited by dropouts comparable across different basic skills areas? Results of research related to these issues suggested the following:

- The basic skills levels of both potential and actual secondary school dropouts are well below average and their expected grade level. Across the various basic skills areas they score, on some standardized tests, at or near the twenty-fifth percentile, which translates into a grade-equivalence rating of approximately 5.4 on other measures.

- The potential dropouts have the same disparity between their reading/verbal and their math/quantitative skills as the actual dropouts have. The information available regarding the other basic skills areas is too limited to warrant any conclusions at this time and merits further inquiry.

- The performance of potential and actual dropouts across the different basic skills areas appears comparable—that is, in general, equally poor.

Appendix A expands on these results.

The primary question related to the second issue was, How do the basic skills levels of secondary school dropouts compare with those of completers or graduates? Several ancillary concerns were, Are the differences in basic skills observed for female dropouts and completers similar to the related differences observed for males? Do the differences between dropouts and completers vary across basic skills? and Are the differences between dropouts and completers who are enrolled in vocational programs comparable to the related differences between dropouts and completers in other curricula? The empirical results related to these questions are summarized in appendix B. From the information obtained, the following is suggested:

- The basic skills levels of students who drop out of high school are usually significantly lower than the basic skills levels of completers or graduates. Generally, the average scores observed for dropouts are about half a standard deviation unit less than the average scores observed for graduates.

- Although only one study yielded data that compared males and females, the results reported in that study indicate that the differences between the basic skills levels of dropouts as compared to those of completers were approximately the same for females and males. That is, female dropouts scored about half a standard deviation less than female completers on the various basic skills measures employed in the study, which paralleled the findings observed for males.

- The reading or verbal skills and the mathematics or quantitative skills of completers are half a standard deviation above the dropouts' skills. The information available regarding other basic skills areas (e.g., listening and writing) is too limited to warrant a conclusion at this time and represents a topic that should be researched further.

- Of all the studies reviewed, only one yielded data dealing with the basic skills of both vocational and nonvocational dropouts and graduates. The results reported in that study suggest that the basic skills levels of vocational completers are more like the basic skills levels of nonvocational dropouts, while the basic skills levels of vocational dropouts are considerably lower. Since the sample upon which these results are based was restricted, these results need to be replicated in other settings using other samples before any firm generalization can be made.

The third issue addressed through the empirical results of the studies was, Is exposure to a vocationally oriented program related to changes in the basic skills levels of actual and potential secondary school dropouts? Two ancillary questions were, Of what magnitude were the observed changes in the dropouts' basic skills levels? and Were the observed changes comparable across basic skills areas? An overview of the specific findings related to these questions is found in appendix C. The information summarized suggests the following:

- Usually, the basic skills levels of potential and actual secondary school dropouts will increase substantially when they are provided an opportunity to participate in a vocationally oriented program that has an explicit integrated basic skills component. Although two of the reported eleven studies did not yield information that unequivocally supported this conclusion, in both instances the nature and quality of the reported program and related data were questionable. Furthermore, these studies serve to indicate that such improvements cannot be assumed to occur in all settings and circumstances, but rather that they represent outcomes that must be pursued and that are based upon overall program quality, including the criteria employed.

- The observed changes in dropouts' basic skills levels averaged half a standard deviation unit higher. Even with these improvements, however, the affected students' levels of performance were still usually well below either the high school or the eighth grade level, which is considered by many educators as the minimal level of competency needed to function effectively in today's society. Therefore, additional research and program development activities should be undertaken to improve the potential of programs designed to sustain growth in affected students' basic skills levels.

- Most studies reported positive change in both the reading and the mathematics skills of affected students. In most cases, the students' mathematics scores increased as much as or slightly more than their reading or verbal scores.

The fourth issue addressed was, How is dropping out of school related to selected vocational education outcomes, such as employment, earnings, skill level requirements of jobs, and the acquisition of additional training? The available results related to this issue are few and fragmented. An overview of those results is provided in appendix D.

The summarized information suggests the following:

- In those instances in which no specialized vocational training was provided as part of the study (i.e., the subjects were simply "tracked" over some specified period of time), the results were generally equivocal and inconclusive. For example, in one study

(Combs and Cooley 1968), it was found that the average annual earnings of dropouts (one year after the twelfth grade) were slightly higher than those of high school graduates who did not go on to college; while in another (Redfering and Cook 1980), it was found that the annual earnings of dropouts were significantly lower than those of high school graduates (twenty years after the tenth grade).

- In those instances in which some specialized vocational training was provided to dropouts, the results are somewhat more conclusive and interpretable. They suggest that dropouts who receive vocational training generally experience higher employment rates and higher average annual earnings than dropouts who do not receive such training.

With regard to the other outcomes mentioned (e.g., acquisition of additional training and skill level requirements of jobs), few if any data were available. The scarcity of specific data as well as the general paucity of information in this area suggests that additional research should be conducted to increase the data base if the question of outcomes is to be evaluated adequately.

PROGRAMS TO IMPROVE BASIC SKILLS OF ACTUAL AND POTENTIAL DROPOUTS

In addition to the nineteen studies with empirical findings, a number of descriptions were reviewed and information was culled about specific techniques that are currently being used in different settings to incorporate and improve basic skills instruction for actual and potential dropouts in vocational education. The purpose of this effort was to provide ideas on and insights into what is currently being done or what might be done to improve the basic skills attainment of both potential and actual dropouts. The results should be a useful source of information for educational decision makers, researchers, and practitioners who are engaged in program planning and operations in vocational education.

An Overview of Programs Designed to Foster the Basic Skills of Dropouts

The strategies and techniques obtained from the studies mentioned previously have been abstracted and organized according to a conceptual model for describing instructional programs developed by Stufflebeam et al. (1971). That information is summarized (with programs for actual and potential dropouts described separately) in appendices E and F.

Actual Dropouts

The information contained in appendix E suggests that programs designed to serve actual dropouts are generally characterized by the following:

- **Content**
  - A listing of both general and specific objectives for basic skills training courses or vocational training courses with a basic skills component
  - Use of norm-referenced tests to evaluate skill levels and to measure student progress after basic skills instruction.
- **Methodology**
  - Integrated programs that combine basic skills instruction with vocational training or career exploration activities designed to prepare students for specific employment, simultaneously increasing their basic skills attainment levels
  - Nonintegrated programs predicated on remediation of basic skills deficiencies generally through individualized instruction provided on an as-needed basis
  - Instructional modes or methods that entail intensive and, most frequently, individualized instruction in reading, writing, speaking, and computation that allows for each student's unique learning rate and style (In some cases, vocational course content and basic skills course content are meshed to provide students with a sense of continuity in the vocational program.)

- Teaching styles matched with learner characteristics in order to foster favorable and successful experiences in the classroom
- Use of commercially available materials supplemented by teacher-made materials or the use of teacher-made materials supplemented by commercially available audiovisual materials (Often both approaches are employed in a learning laboratory setting.)

- **Organization**

  - Use of both academic and vocational instructors to diagnose basic skills deficiencies, to provide basic skills and vocational instruction, and to provide related services as needed
  - Programs of four to nine months' duration with varying numbers of hours devoted to basic skills instruction, vocational training, or both
  - In-school locus or separate facilities within a local school district depending upon type and duration of program

Potential Dropouts

The information presented in appendix F suggests that programs designed to serve *potential* dropouts are generally characterized by the following:

- **Content**

  - A listing of both general and specific objectives for basic skills training in concert with vocational education, with particular attention to attitudinal improvement for dropout prevention
  - Use of norm-referenced tests to evaluate skill levels and to measure student progress after basic skills instruction (Staff administer a battery of commercially available instruments.)

- **Methodology**

  - Integrated programs in which vocational instruction in various occupational areas is combined with compensatory or remedial instruction in the various basic skills
  - Nonintegrated programs predicated on remediation of basic skills deficiencies as well as attitudinal and behavioral problems
  - Individualized attention and instruction provided on an open-entry/open-exit basis, often in combination with a work/study plan
  - Instructional modes or methods that allow curriculum to be tailored to meet specific student needs and to reflect occupational requirements whenever possible (Frequently, basic skills course content is closely related to work-related concepts that can be applied both in the classroom and at work.)
  - Teaching styles matched with learner characteristics through positive affective change, improving self-image to prevent dropping out
  - Use of commercially available materials adapted by teachers to respond specifically to individual students' needs (These materials are usually supplemented by teacher-prepared instructional units, audiovisual aids, and the like. All materials are most frequently used in a learning laboratory setting.)

- **Organization**

  - Use of both academic and vocational instructors to diagnose basic skills deficiencies and to provide basic skills and vocational instruction (In addition, counselors, psychologists, and other staff provide assistance with behavioral and attitudinal adjustment. All personnel are selected for their stability, flexibility, and empathy in dealing with the problems of the potential dropout.)
  - Program duration of one academic year with varying numbers of hours devoted to basic skills instruction, vocational training, or both

Reinforce Basic Skills and Remediate Deficiencies at the Secondary Level

From the nineteen studies reviewed the staff collected information regarding practices used specifically at the secondary level to reinforce basic skills. A synthesis of that information revealed some general trends that reinforce basic skills typically—

- are locally supported;
- are directed to disadvantaged, dropout-prone students;
- favor an integrated vocational-academic approach to curricular content and structure; and
- emphasize an individualized approach to instruction.

Secondary school strategies are an effort to meet the needs of non-college-bound, low-achieving, disadvantaged students who have not planned long range career goals, and often desire to drop out of school before completing graduation requirements. Teachers attempt to teach math, science and communication skills in the context of vocational education so that the student sees some value in learning math, science, etc. Coupled with work experience, students can relate to the basic skills and the occupational skill training.

In order to assist vocational teachers, programs and practices studied were those included in national databases such as the Federally-Administered Projects in Vocational Education. Local or state projects funded with local or state funds usually are not reported unless the project director has sent the project to ERIC files. There will be quite a few people who have programs that work as well. Our database was limited to the fourteen programs studied. While these programs are significantly sufficient, to study approaches they are not a complete full range of current practices.

From our study of the fourteen programs, there seem to be four basic approaches:

- Compensatory or remedial programs
- Support-oriented programs
- Alternative school programs
- Inservice training programs

Eight programs exemplify Approach #1, three exemplify Approach #2, two exemplify Approach #3, and only one fits Approach #4. Each of the four approaches is described as follows:

- **Approach 1: Compensatory or Remedial Programs**

  - **Designed for students**—Unmotivated, low-achieving, or disadvantaged who have not had equal opportunity to learn basic skills, or low socioeconomic status, and often classified by school personnel as unable to succeed in regular classrooms

  - **Emphasizing**—Reinforcement of basic skills emphasizing integration of special academic and vocational curricula into a special program.

  - **Goal**—Prepare students to go into regular classrooms, or to go into a job or both.

  - **Example**—Georgia's coordinated vocational academic education program as described in the *VocEd* 1979. The operation of this program is directed from the office of the state supervisor of special needs programs.

    > . . . offers vocational education for underachieving or alienated youth whose behavior indicates that they will probably not complete high school, or that they will continue in a pattern of underachievement unless their special needs are recognized. The program is financed by vocational funds for disadvantaged and special needs students.
    >
    > The program is a year-long course for students in grades nine through twelve. The curriculum focuses on a combination of (1) competencies necessary for occupational entry, adjustment and advancement in a field of vocational education and (2) special emphasis on remediating individual deficiencies in reading, language and math that are impeding the student's progress in the regular vocational classroom. In addition the state prepared materials covering life adjustment and career seeking skills. Today CVAE offers 157 programs across the state with an enrollment of approximately 12,500 disadvantaged students (p. 40).

- **Approach 2: Support-oriented Programs**

  - **Designed**—Support basic skills interaction in the vocational class.

  - **Emphasis**—*Reinforces* existing proficiencies rather than to *remedy* basic skills deficiencies by using typical vocationally relevant materials or subject matter (e.g., business math, communication, and science) related to service area.

  - **Goal**—Serves all of the vocational student population. Regular classroom teachers usually provide the actual classroom instruction, there has been a joint planning effort of vocational and regular teachers.

  - **Example**—This approach is exemplified by the Communication Skills Program in West Linn, Oregon (Schuberg and Cannon 1972).

    > This was an exemplary project aimed to extend a program designed to help high school students with industrial occupational goals achieve practical communication skills necessary to efficient employment entry.

The original developmental planning was undertaken by four industrial teachers, two language arts teachers, chairman of English, and the director of vocational education. The language arts teachers conferenced [sic] a minimum of four hours in each of the four industrial curriculum areas observing operation of each machine or piece of equipment, viewing the course content, surveying the occupational publications for each field, reviewing the cluster communication skills as suggested in the state guide, and interrogating the occupationally competent industrial instructors about the nature of communication processes in the respective occupational areas. . . .

Each major category was subdivided into specific communication skills. For each specific skill multiple job sheets were developed to utilize the differential skills. The language arts personnel subdivided the established communication categories into differential skills. Job sheets were developed for each differentiated skill. As the language arts teachers developed job sheets, the vocational instructors "plugged in" content for their respective occupational field (p. 1).

- **Approach 3: Alternative School Programs**

  - **Designed for students**—Disaffected, alienated, or "turned off" by the regular secondary program. The unsuccessful and disinterested students are removed from the secondary school site into typically smaller and more informal schools.

  - **Emphasis**—Learning through work. These alternative school programs are little more than direct work experience supported by a few required courses in basic skills areas. Individualized attention and instruction are emphasized. Many of the rigid rules are bent in order to assist the student in adjusting.

  - **Goal**—"Separate" instruction carried to its logical extreme. Totally separate facilities are provided.

  - **Example**—The Syracuse, New York, Occupational Training Program is an example of an alternative school approach for reinforcing basic skills proficiency through, and in relation to, vocational subject matter.

    The Occupational Learning Center Program is an alternative high school experience for young people who are academically or socially unable to cope with the regular high school program. The curriculum includes development of basic skill, vocational development, personal and vocational counseling, and job placement and follow-up (Wolff, 1973, p. 2).

    The OLC employs a two-phase curriculum. The first phase concentrates on developing basic proficiencies in general reading skills, vocabulary, English grammar, and arithmetic. Phase 2 continues to upgrade these skills, but adds course materials in social studies, English, health, and science. It also gives the student an in-depth understanding of the world of work, including the principles of work, the problems of the working adult, the structure and nature of labor unions, government, economics, consumer education, and national and international cultural institutions.

    All students are involved throughout the program in career planning and preparation which includes vocational technical training, on-the-job training,

intensive work experience in a specialized skill area and/or preparation for higher education (Wolff, 1973, p. 6).

- **Approach 4: Inservice Training Programs**

  - **Designed for teachers**—To assist content-area teachers minimize the gap between students' basic skills abilities and the requirements necessary for them to achieve in an occupational skill.

  - **Emphasis**—Inservice training requires a fiscal investment beyond the ability and/or interest of many local districts to make.

  - **Goal**—An innovation that has met the performance standards of the Joint Dissemination Review Panel, thus attesting to the power and effectiveness of this strategy.

  - **Example**—The Vocational Reading Power project is "a staff development program designed to help content-area teachers minimize the gap between student reading abilities and the reading requirements of printed instructional material" (Educational Programs That Work 1980, pp. 9-74).

    The program consists of five components. Testing trains teachers to use formal and informal tests and inventories to assess the reading abilities of their students. Readability Analysis provides teachers with the knowledge and tools to analyze the reading levels of printed instructional materials, to apply this knowledge when selecting texts, and to modify and improve use of the printed materials to fit students' reading abilities. Fifteen Reading in the Content Area Modules provide for additional staff development in content-area reading. The modules, which are designed to be used in group or individual inservice, provide basic strategies and procedures that can be incorporated into any classroom curriculum. Vocabulary Development focuses on practical vocational activities that the teacher can incorporate into the total curriculum. In addition, for vocational adopters, project developed vocational student reading-support materials in the form of 32 Occupationally Specific Key Word Glossaries are available. Instructional Materials System involves the development of a resource system that provides teachers with ready access to a wide variety of instructional materials in their field (pp. 9-74).

Reinforcement of Basic Skills in Postsecondary Institutions

Nineteen studies at the postsecondary level were reviewed. The information collected revealed that at the postsecondary level, efforts to reinforce basic skills are typically classified or identified as follows:

- Programs that are multiplex in nature, i.e., providing reinforcement in more than one form

- Organizational subunits, e.g., learning centers or laboratories

- Competency-based programs

- School- or program-wide efforts

- Students who self-enroll

The phenomenon of postsecondary education is structured toward a policy of open enrollment. In most institutions, a high school diploma is desired, but not necessary. Enrolling diverse students in large numbers who plan to work on the high school equivalency exam or whose basic skills are at low levels of proficiency, has directed these institutions to search for institutional responses to meet the needs of the myriad of students. One popular response to all the problems of low levels of basic skills is the learning center. Freshmen in most postsecondary schools are subjected to diagnostic testing and then remediation. These institutions respond to specific problems for a subset of students with the response that basic skills instruction will be taught to all students who need remediation or who wish to brush up on skills acquired years ago.

There are three basic approaches to the provision of basic skills instruction at the postsecondary level. These approaches were gleaned from eleven postsecondary programs studied.

- Compensatory or remedial programs
- Designated courses
- Learning centers or laboratories

As stated earlier, this inventory only covers programs reported through national data bases. The eleven program descriptions are necessary, but not sufficient data to allow understanding of the current practices of postsecondary schools for reinforcing basic skills.

Individualized instruction is the primary instructional approach with attention to individual needs and interests being of uppermost importance. The mode of instructors was either competency-based, programmed instruction, or mastery of learning. In a recent report on changes in community colleges during the period 1970 to 1974 it was noted that

> the predominant trend is toward individualized instruction . . . . The other trend . . . is the increased willingness of teachers to share responsibility for the education of students with fellow teachers, other students, and employees (Cross 1975, p. 2).

The three basic approaches to the provision of basic skills instruction at the postsecondary level are described as follows:

- **Approach 1: Compensatory or Remedial Programs**
  - **Design**—To serve those students whose basic skills proficiencies are sufficiently low to interfere with the satisfactory completion of their vocational courses of study.
  - **Emphasis**—Huhn (1976) reported the screening all students and provision of remediation to those below certain levels of competency. Some students are admitted on the basis of high school records and student self-selection.
  - **Goal**—Remedial programs are viewed as a prerequisite or preparation for entrance to a regular vocational program. Remedial courses are designed to help students "catch up," to overcome academic deficiencies carried over from high school.

- **Example**—The following passages describe a technical development curriculum, which is a remedial program. It is somewhat unusual in that it is designed for students without high school diplomas. In that sense it is truly a transition program between high school and the postsecondary vocational curriculum.

  > The chief purpose of the Remedial Program is the preparation of students for regular vocational or technical programs. This program is for students with academic deficiencies and/or uncertain career goals. Depending upon the students' needs, this program may be terminal, leading to direct job entry (Murphy 1974, p. 86).

This curriculum provides a wide array of both vocational and academic courses that become the basic building blocks of individual curricula.

> Two subject content areas, furniture upholstery and industry sewing-machine operation, lead directly to job placement and require no additional course work outside this program. Other occupationally related courses lead directly into other programs once the student has exited from the remedial program. These courses include basic electricity, basic drafting and basic photography. These courses permit a student to explore subjects of possible vocational interest as well as learn some foundation skills and receive basic information in these areas. . . .
>
> The subject areas also include several academic courses, including social foundations, preparatory mathematics I, general concepts of science, communication skills and reading development. Additionally, science and mathematics courses are designed to help prepare a student for his chosen vocational or technical program (Murphy 1974, p. 83).

- **Approach 2: Designated Courses**

  - **Designed**—Paralleling the "support-oriented" programs at the secondary level. Specific courses in basic skills areas are infused with a vocational content. For example, special math classes for drafting or technical fields are taught.

  - **Emphasis**—To help students be more successful in their vocational program. These courses may carry college credit. Student takes support courses as an integral part of vocational program.

  - **Goal**—Exemplifies true cooperation and coordination between general and vocational education. The strategy is not targeted to specific student subgroups or ability levels, but to vocational content or program areas. The development of these courses involves the joint efforts of vocational and academic-area teachers. In postsecondary institutions cooperation may be difficult to initiate and sustain because (1) not all vocational schools employ academic-area teachers and (2) when they do, the teachers are located in different departments.

  - **Example**—The College Reading and Study Skills course is an example of this type cooperation:

    > The curriculum of the College Reading and Study Skills course . . . includes the development of a core vocabulary through the utilization of the skills of context clues, word structure, and dictionary skills. The identification of main ideas and

supporting details is the keystone of the course . . . . In an effort to implement this transfer of reading and study skills to college level materials, two sections of the College Reading and Study Skills course were scheduled in conjunction with the introductory courses offered by the Business Department . . . The . . . course . . . limited itself to business materials, i.e., textbooks, essays, charts, graphs, term projects, etc. Each member of the course was expected to bring the . . . Business textbook to class—for it was utilized as a source book from which examples of textbook organization, main ideas, chapter headings, charts, graphs, summaries, essay and short answer questions, and glossaries were readily available. Test-taking skills, essay and short answer, were developed using content from the . . . course. While a term paper was not written in the College Reading and Study Skills course, assignments from the business courses were used to illustrate many of the difficulties of writing and organizing such a college level assignment (Hosey and Rapaport 1976, pp. 22-23).

- **Approach 3: Learning Centers or Laboratories**

  - **Design**—The centers are durable organizational subunits that permit the student to perform activities that relate to a subject area and the learning of basic skills.

  - **Emphasis**—This is a comprehensive approach to coordination between vocational and general education in reinforcing basic skills.

  - **Goal**—Learning centers become viable subunits. They ultimately lead to the *disjunction* of vocational and general education. They become a separate academic unit of a total vocational organization.

  - **Example**—The Allied Health Learning Center at New York City Community College conveys the range of activities and services such centers can provide.

    The Allied Health Learning Center represents a comprehensive network system designed to facilitate student learning in seven career departments within the Division of Allied Health. The center serves approximately 1800 students and 80 faculty members. The center utilizes a team of content faculty, specialists in learning methodology and a media production staff. Adjunct personnel are associated with the center on a regular basis and student tutors are utilized in a number of ways (Tuosto and Beitler 1976, p. 6).

This center supports the following activities:

- A freshman course, "Professional Learning System," aimed at the development of reading and study skills
- Diagnostic testing
- Maintenance of a comprehensive student data system
- The provision of instructional modules that support and supplement regular courses
- The development of multimedia teaching aids
- Informal study group sessions

- Peer tutoring
- Faculty workshops and seminars
- Licensure and certification seminars for students
- Career information and counseling
- General professional development activities, e.g., seminars, lectures (Tuosto and Beitler 1976).

Understanding the Differences

The twenty-five programs and case studies that were reviewed represent central tendencies only. Other approaches do exist, but were not found in the national databases reviewed. In review, the predominant cooperative efforts between vocational and general education to reinforce basic skills fall into these types:

1. Secondary-level approaches
   - Compensatory program
   - Support-oriented programs
   - Alternative schools
   - Inservice training
2. Postsecondary-level approaches
   - Compensatory programs
   - Designated courses
   - Training centers

These approaches to providing basic skills instruction have been described in terms of strategy by:

- providing compensatory instruction for students whose skills are deficient
- providing academic and basic skills support for students enrolled in particular vocational areas. In terms of an organizational arrangement for implementing that strategy various courses have been planned, special schools built and program centers designed.

CONCLUSIONS AND RECOMMENDATIONS

The empirical results obtained from the review of the various studies that dealt with the problem of dropouts prompted a number of conclusions, which are summarized in figure 1.

The conclusions presented in figure 1 and the information from the literature on specific techniques for improving the basic skills of dropouts led to the following operational and developmental recommendations for improving the instructional programming afforded such students.

- **Content Considerations**

  - **Goals and objectives.** Explicate the goals and specific objectives for the basic skills, vocational training, or career education components of any program for actual or potential dropouts, to provide a framework and structure for instruction. Too frequently, the dropout or dropout-prone student is plagued by self-doubts and insecurity resulting from weak or absent structures both at home and at school. Goals and objectives that are explicitly and clearly stated are practical and can foster positive results by providing the structure that these students need.

  - **Relationship of criteria and content.** Ensure that instruments employed as part of the instructional process (either norm-referenced or criterion-referenced) correspond directly to the content of both the basic skills and the vocational training curriculum. In this way, students can be assured of some degree of accomplishment and success as they progress through the curriculum, and clearly evident relationships can be shown between test criteria and learning content.

- **Methodological Considerations**

  - **Early identification.** Identify potential dropouts early. In several of the studies reviewed, it was suggested that this identification process should occur during the elementary school years. Moreover, any identification of potential dropouts should be as unobtrusive as possible in order to help avoid the stigma that labels have traditionally placed on these students, who already exhibit feelings of isolation and separation from the mainstream of activity in their schools.

  - **Terminology.** If a remedial rather than an integrated basic skills program is employed, avoid the use of the term "remedial," not only because of its pejorative connotation, but also because of its obvious effect of reinforcing a caste system that the actual or potential dropout finds so distasteful.

  - **Program integration.** Whenever possible, opt for an integrated program that combines basic skills instruction or remediation with vocational or occupational training. Research suggests that integrated programs are more meaningful to the dropout or dropout-prone student because the nature of integrated programs relates closely to the practical need of many of these students to find paying jobs.

- **Individualization.** Opt for individualized instruction. Successful programs for dropouts typically incorporate individualization to a greater or lesser degree to handle the multifaceted problems and needs of the dropout or dropout-prone student. Available research, although quite limited, suggests that the potential dropout, who is usually disenchanted with school and bored or frustrated by traditional teaching methods, tends to respond well to individualized attention.

- **Materials adaptation.** Be prepared to adapt or otherwise modify commercially available materials to specific programmatic needs. Available data suggest that most commercially available basic skills materials do not reflect vocational content and therefore are not directly useful for integrated basic skills efforts. Program materials should reflect a low reading level, but one that is appropriate for the students' interests. Consider using various media or multimodal materials and techniques that can sharpen certain basic skills that are frequently underrepresented in programs (e.g., listening rather than reading). Such multimodal materials and techniques can also build upon the fact that the aural facility and comprehension of many actual and potential dropouts are developed and utilized to a greater degree than their reading or writing skills.

- **Paid work experience.** Because most dropouts *must* work, include a paid work experience component for the duration of the program. In addition to providing subsistence, paid work experiences provide tangible rewards that actual and potential dropouts rarely receive. Also, every effort should be made to relate the students' on-the-job experiences to what they are learning in school, particularly in the area of basic skills.

- **Motivation.** Consider ways of providing actual and potential dropouts with incentives and motivation to complete programs (e.g., recognition of accomplishment given before their peers).

- **Peer-tutoring.** Consider the use of peer-tutoring as both an instructional and a reinforcement technique to assist the student with problems. Caution needs to be exercised, however, in establishing egalitarian relationships between tutor and learner to avoid or to mitigate the effects of creating a caste system.

- **Alternative programming.** Conduct further research on the benefits of alternative programming that integrates career exploration with vocational and basic skills curricula. Also, investigate the potential of alternative programming that accommodates flexible scheduling and shorter class periods, thereby avoiding the lock-step nature of current programs.

- **Organizational Considerations**

  - **Dual components.** Design and implement basic skills programs that address the needs of dropouts and that incorporate two separate but articulated components: (1) a presecondary component that is targeted toward potential dropouts early in their school careers and is intended to enhance their basic skills levels prior to entry into a vocational or other secondary program and (2) a secondary component designed to foster those basic skills deemed essential to vocational performance.

  - **Inservice workshops.** Conduct teacher inservice workshops to mitigate traditionally negative teacher attitudes toward actual or potential dropouts, to familiarize teachers

with the basic skills deficiencies of these students, and to acquaint teachers with effective remedies for addressing these weaknesses.

- **Linkages.** Investigate the establishment of improved linkages with apprenticeship and CETA programs as possible vehicles for securing funds and "work slots" for paid work experiences.

- **Staffing.** Conduct further research to determine the optimal mix of staff qualifications and staff size for delivery of both basic skills and vocational instruction.

- **Support services.** Conduct further research to assess the extent to which various support services contribute to program effectiveness (e.g., a program with several guidance counselors to provide needed support services versus a program with one guidance counselor and a working panel of business, industry, and community leaders).

- **Other Considerations**

  - **Location.** Insofar as is possible, locate programs in the regular school facilities to avoid segregation and subsequent stigmatization of dropouts or potential dropouts and to encourage their participation in mainstream and extracurricular school activities.

  - **Staff cooperation.** Foster cooperation between basic skills instructional staff and vocational teaching staff to ensure the integrity of materials and techniques that are both relevant and realistic and that contribute to program popularity and success.

  - **Research on parental impact.** Conduct further research on the effects of parental education, parental involvement in the dropout syndrome, and the effects of increased parental involvement early in the educational process.

  - **Research on complementary basic skills.** Engage in additional research on such basic skills as listening, writing, and oral communications and their potential, complementary effects in fostering learning of other skills, such as reading and mathematics.

  - **Program assessment.** Conduct more rigorous assessments of various kinds of programs and program components in order to estimate their potential impact better (e.g., How reasonable are the estimates of program effects on basic skills noted in appendix G? and What expectations can we have for increasing those estimates?).

  - **Research on dropouts on vocational outcomes.** Undertake intensive, rigorous research and follow-up activities regarding potential and actual dropouts and various vocational outcomes such as employment history, earnings, and participation in additional training.

Although no specific study or set of recommendations can be expected to resolve a problem as pervasive and enduring as that of high school dropouts, if an effort were made to implement the kinds of research and development activities and instructional programming suggestions listed here, we should expect to realize a measurable degree of progress in that direction. The available evidence strongly suggests that a concerted effort reflecting the general framework and direction indicated by these recommendations could serve to improve both the basic skills levels and the occupational potential of dropout-prone students.

APPENDICES

APPENDIX A

A Summary Description of the Basic Skills Levels of Potential/Actual Secondary School Dropouts

Source	Basic Skill(s)	Statistics	Related Standards	Summary Interpretation(s)
Austin, J. J. and Sommerfeld, D. A. (1967)		*Group Averages (Prior to Training)*	*Related Percentiles*	The results of this study suggest (1) the clients being served were well below average on their basic skills performance when they entered the program, and (2) their performance in reading was slightly higher than their performance in math (although both were extremely low).
		Program (n=181) / *Control* (n=82) / *Overall* (n=263)	*Program* / *Control* / *Overall*	
	• Reading (WRAT)	86 / 85 / 85	18th / 16th / 16th	
	• Arithmetic (WRAT)	81 / 80 / 81	10th / 9th / 10th	
	• Verbal (IQ–WAIS)	93 / 92 / 93	–a value of 100 would be considered "average"	
Brantner, S. F. and Enderlein, T. E. (1972)		*Groups (all dropouts)*	*Related Percentiles*	The results of this study suggest (1) potential dropouts' scores are at about the 40th percentile on national norms, and (2) their performance on math-related items is slightly higher than their performance in the verbal area.
		Vocational (n=36) *Mean* / *S.D.*; *Non-Vocational* (n=30) *Mean* / *S.D.*	*Vocational* / *Non-Vocational*	
	• Verbal (GATB)	85.3 / 7.5 / 88.2 / 8.3	33rd / 38th	
	• Numerical (GATB)	88.2 / 10.0 / 94.2 / 12.1	40th / 52nd	
	• Verbal (APT)	23.2 / 14.9 / 32.7 / 22.7	– / –	
	• Non-Verbal (APT)	35.8 / 24.0 / 34.4 / 23.7	– / –	
Combs, J. and Cooley, H. H. (1968)		*Mean* / *S.D. (pooled)*		The results reported for this study suggest that (1) potential dropouts are probably near the 30th percentile in their basic skills attainment, and (2) their overall English and math computation skills are somewhat lower than their reading and arithmetic reasoning skills.
	• English – Total	68.5 / 13.2	– 25th percentile, .55 S.D. below est. pop. mean	
	• Reading Comprehension	20.3 / 9.8	– 35th percentile, .50 S.D. below est. pop. mean	
	• Introductory High School Math	7.2 / 3.5	– 35th percentile, .50 S.D. below est. pop. mean	
	• Arithmetic Reasoning	5.8 / 3.0	– 40th percentile, .40 S.D. below est. pop. mean	
	• Arithmetic Computation	13.6 / 26.1	– 20th percentile, .40 S.D. below est. pop. mean	
Crawford, J. (1964)		*Mean (Grade Equivalents)* / *S.D.*		The results of this study show that potential dropouts' reading performance is well below grade level.
	• Reading	4.4 / 1.3	– approximately 6 to 8 years below actual grade level.	

APPENDIX A (continued)

Source	Basic Skill(s)	Statistics	Related Standard(s)	Summary Interpretation(s)
Custer, H. F., Jr. (1973)		*Statistics (Percentile Ranks)* *Grade 7* — *Mean* / *S.D.*; *Grade 9* — *Mean* / *S.D.*	(Reflected in the reported means.)	The results reported for this study suggest that potential dropouts are scoring at about the 25th percentile in both reading and math.
	• Mathematics (SAT)	26.3 / 21.1 / 23.8 / 19.6		
	• Reading (SAT)	25.9 / 13.4 / 24.4 / 17.2		
Dickerson, E. (1973)		*Mean (Grade Equivalents)* / *S.D.*	– approximately 7 to 9 years below actual grade level in school.	The results obtained in this study suggest (1) potential dropouts scored considerably below grade level on all the basic skills indicators and (2) they scored about equally poorly in reading, arithmetic, and language.
	• Reading (CAT)	3.6 / 1.2		
	• Arithmetic (CAT)	4.0 / 0.9		
	• Language (CAT)	3.4 / 1.2		
	• Reading (GMRT)	3.8 / 1.1		
Johnson, L. (1973)		*Mean* / *Median*	– 18th percentile on national norms – equal to 26th percentile } on Minneapolis City norms – equal to 28th percentile } on Minneapolis City norms – 12th percentile on national norms	The results presented in this study suggest that (1) potential dropouts score well below the 25th percentile on basic skills measures (national norms) and (2) their numerical/arithmetic performance is about as high as their verbal/reading performance.
	• Verbal (DAT)	11.7		
	• Numerical (DAT)	10.3		
	• Reading (STEP)	438.6	– Equal to 11th percentile } on national norms	
	• English Expression (STEP)	432.0	– Equal to 13th percentile } on national norms	
Jones, H. B. (1973)		*(Reported averages are pooled across 3 schools)*	*Percentile*	The results of this study suggest that the sample of potential/actual dropouts scored at about the 30th percentile on reading and 10th percentile in mathematics.
	• Reading (WRAT)	Mean = 92.5	31st	
	• Mathematics (WRAT)	Mean = 81.3	10th	
	• Verbal (FAS)	Mean = 70.5	–	
	• Numerical (FAS)	Mean = 49.8	–	
Kelly, F. J. and others (1964)	• Listening (STEP)	Mean=264.4	–	These results suggest the sample of potential dropouts' basic language scores are very, very low.
	• Language (CTMM)	Mean = 28.4	6th	
Langsdorf, M. and Gibboney, R. A. (1977)		*Mean (Percentile Rank)* / *Mean (Grade Equiv.)* / *Percent Below 8th Grade*		The results reported in this study suggest that (1) the students were scoring somewhere near the 25th percentile on the various criteria, and (2) their reading performance was slightly higher than their math performance.
	• Reading (SAT)	34 / 7.2 / 73%	approximately 3 to 5 years below actual grade level	
	• Mathematics (SAT)	19 / 7.3 / 63%		

APPENDIX A (continued)

Source	Basic Skill(s)	Statistics	Related Standard(s)	Summary Interpretation(s)
Center for Field Research and School Services (1973)	• Reading • Mathematics	*Mean (Grade Equivalents)* / *S.D.* 6.9 / 2.6 5.8 / 2.6	approximately 5 to 7 years below actual grade level	Based on these results, it would appear (1) the potential dropouts' basic skills attainments are well below expectation given their grade levels, and (2) their reading skills are slightly higher than their math skills.
Sharar, P. H. (1974)	• Reading	*Program Group* Mean 6.7, S.D. 1.8; *Comparison Group* Mean 6.1, S.D. 2.0	4 to 6 years below actual grade level	The results of this study suggest the sample of dropouts are scoring well below grade level.
Spotts, R. and others (1978)	• Reading • Mathematics	*Mean* / *S.D.* 48.4 / 8.9 42.4 / 12.6	– –	The results presented in this study suggest (1) the students' basic skills are slightly below average, and (2) their reading attainment is slightly higher than their math attainment.
Stein, E. M. and others (1976)	• Mathematics • Reading Recognition • Reading Comprehension	*Mean* / *S.D.* 5.4 / 2.1 5.3 / 2.3 5.6 / 2.3	approximately 5 to 9 years below actual grade level ·	The results presented in this study suggest (1) the students' basic skills levels are considerably below grade level, and (2) their reading recognition and math skills are about equal, but both are slightly lower than their reading comprehension skills.
Walther, R. H. and Magnusson, M. L. (1975)	• Reading (SAT) • Mathematics (SAT)	*Group Means (In Grade Equivalents)* *High School Dropouts*: (1) *Detention Center*; (2) *Youth Corps Site 1*; (3) *Youth Corps Site 2* *Potential Dropouts*: (4) *H.S. Dropouts* 6.2, 6.7, 8.1, 5.4 5.5, 5.7, 6.7, 5.5	approximately 2 to 7 years below actual grade levels	The results from this study suggest (1) overall, the basic skills of the tested clients were well below normal, and (2) their math performance was typically lower than their reading performance.
Droege, R. C. (1968)	• Verbal aptitude • Numerical aptitude	*Grade Level* / *Male* Mean, S.D. / *Female* Mean, S.D. 9th: 84.9, 10.1, 87.8, 10.2 10th: 89.3, 11.2, 91.3, 11.5 11th: 92.4, 11.8, 96.6, 13.0 9th: 86.5, 14.5, 90.7, 15.1 10th: 90.2, 14.6, 93.3, 15.6 11th: 93.2, 14.8, 94.9, 15.5	*Grade Level* / *Related Percentiles* Male / Female 9th: 33rd, 38th 10th: 34th, 37th 11th: 35th, 43rd 9th: 37th, 44th 10th: 40th, 48th 11th: 47th, 40th	The results presented in this study suggest (1) the overall basic skills attainment of the sampled students is below average (i.e., it is at approximately the 40th percentile), and (2) their numerical/math performance is slightly higher than their verbal performance.

APPENDIX B

Overview of Analyses Comparing the Basic Skills of Secondary School Dropouts and Completors

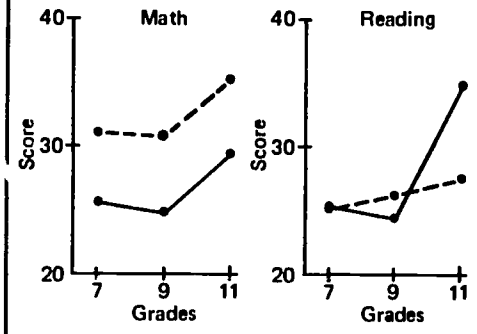
Source	Basic Skill(s)	Statistics a) Descriptive				b) Inferential		Summary Interpretations
Brantner, S. J. and Enderlein, T. E. (1972)		*Voc. Completor (VC)*	*Voc. Dropout (VD)*	*Nonvoc. Completor (NC)*	*Nonvoc. Dropout (ND)*	*F-Values*	*Results of Related Comparisons*	The following outcomes are suggested by these results: (1) the basic skills of the vocational completors are more like the basic skills of the nonvocational completors or the vocational dropouts; (2) the dropouts' scores (vocational and nonvocational) are about ½ standard deviation below those of the completors; and (3) the vocational dropouts' scores on three of the four criteria are about ½ standard deviation below those of the nonvocational dropouts.
	• Verbal (GATB)	92.0	85.3	95.3	88.2	17.2**	NC > VC ≅ ND > VD	
	• Numerical (GATB)	95.3	88.2	99.2	94.2	12.8**	NC > VC ≅ ND > VD	
	• Verbal (APT)	37.5	23.2	48.1	32.7	10.9**	NC > VC ≅ ND > VD	
	• Nonverbal (APT)	49.2	35.8	54.8	34.4	22.1**	NC > VC > ND ≅ VD	
						where **: significant at $\alpha = .01$ level; ≅: "approximately equal to" or "no significant difference between"		
Combs, J. and Cooley, W. W. (1968)		*Mean Scores*				*F-Values*		The results suggest that (1) the dropouts scored about .45 standard deviation below the control students (who completed high school but did not go on to postsecondary education) on all of the basic skills criteria, and (2) the differences between the two groups (i.e., dropouts and "controls") were basically the same for males and females.
		Males		*Females*		*Males*	*Females*	
		Dropouts	*"Controls"*	*Dropouts*	*"Controls"*			
	• English – Total	63.9	71.5	72.9	79.3	255**	220**	
	• Reading Comprehension	19.0	23.5	21.5	25.8	167**	176**	
	• Intro. High School Math	7.0	8.5	7.3	9.1	156**	241**	
	• Arithmetic Reasoning	5.9	7.0	5.7	6.9	114**	134**	
	• Arithmetic Computation	9.0	19.8	18.2	27.6	110**	144**	
						where **: significant at $\alpha = .01$		
Evans, R. E. and Patrick, C. (1971)		*Mean Scores*				*t-Values*		These results suggest that (1) the basic skills levels of high school dropouts are on the average about 2/3 standard deviation below those of completors, (2) the greatest difference between the two groups is in the area of writing, and (3) the smallest difference (although still significant) is in the area of listening.
		Dropouts (D)		*Nondropouts (ND)*				
	• Verbal (SCAT)	242.5		248.3		3.5**		
	• Quantitative (SCAT)	251.4		256.3		3.8**		
	• Mathematics (STEP)	239.5		245.1		3.6**		
	• Reading (STEP)	246.4		255.7		4.1**		
	• Listening (STEP)	260.3		265.6		2.9*		
	• Writing (STEP)	244.9		255.1		4.8**		
						where *: significant at $\alpha = .05$ **: significant at $\alpha = .01$		

APPENDIX B (continued)

Source	Basic Skill(s)	Statistics: a) Descriptive	Statistics: b) Inferential	Summary Interpretations
Kelly, F. J. and others (1964)		*Mean Scores*: *Delinquents* / *Dropouts* / *Completors*	*F-Values*	These results suggest that (1) the basic skills levels of high school dropouts are on the average about 2/3 standard deviation below those of completors, (2) the greatest difference between the two groups is in the area of writing, and (3) the smallest difference (although still significant) is in the area of listening.
	• Listening	265.6 / 264.4 / 274.6	2.3	
	• Language (CTMM)	29.9 / 28.4 / 32.4	9.9**	
			where **: significant at $\alpha = .01$	
Droege, R. C. (1968)		*Mean Scores*: *Grade Level* / *Dropouts* / *Graduates* / *Difference*		The results suggest that (1) the verbal and numerical aptitude scores of high school dropouts are on the average about 2/3 of standard deviation below those of completors, and (2) the differences in aptitudes between the two groups decrease with increases in grade level (from ¾ to ½ standard deviation at grades 9 and 11).
	• Verbal Aptitude (GATB)	9th: 86.3 / 94.4 / 8.1	Although no test statistics are presented, it is noted that all 3 differences are significant at $\alpha = .01$ level.	
		10th: 90.3 / 98.3 / 8.0		
		11th: 94.5 / 100.8 / 6.4		
	• Numerical Aptitude (GATB)	9th: 88.6 / 98.9 / 10.3	Although no test statistics are presented, it is noted that all 3 differences are significant at $\alpha = .01$ level.	
		10th: 91.7 / 100.6 / 8.8		
		11th: 94.1 / 102.9 / 8.9		

APPENDIX C

Overview of Studies Focusing upon Changes in the Basic Skills Levels of Potential /Actual Secondary School Dropouts

Source	Basic Skill(s)	Statistics: a) Descriptive	Statistics: b) Inferential	Summary Interpretations
Austin, J. J. and Sommerfeld, D. A. (1967)	• Reading (WRAT) • Arithmetic (WRAT) • Verbal	*Program (X)*: *Pre (X1)*, *Post (X2)*; *Program (Y)*: *Pre (Y1)*, *Post (Y2)* 85.4 / 89.6 / 84.7 / 85.3 80.8 / 88.8 / 99.7 / 80.2 93.3 / 96.4 / 91.3 / 92.6	*t-Values*: *T(1)*, *T(2)*, *T(3)*, *T(4)* -2.6** / -.3 / .4 / 2.2* -6.7** / -.3 / .9 / 6.3** -2.4** / -.7 / 1.3 / 2.4* Where: T(1) = X1 vs. X2 T(2) = Y1 vs. Y2 T(3) = X1 vs. Y1 T(4) = X2 vs. Y2 and *: significant at α = .05 with **: significant at α = .01	The results reported in this study suggest that (1) the basic skills levels of the program participants increased significantly more than those of the control subjects, and (2) the increase in the program students' mathematics scores was about 2/3 of a standard deviation, while the increase in their reading scores was about 1/3 of a standard deviation.
Crawford, J. (1974)	• Reading	*Grade Level* / *Pre* / *Post* / *Change* 8.0 & above / 1% / 1% / 0% 6.0 to 7.9 / 5% / 35% / +30% 4.0 to 5.9 / 54% / 49% / -5% 2.0 to 3.9 / 40% / 15% / -25%	*X^2-Value* 197.08** **: significant at α = .01	The results reported for this study suggest that the reading levels of the program students did increase significantly, but that there was still considerable room for improvement, i.e., at the time of the posttest only 36% of the high school students sampled exhibited reading scores at or above the 6th grade level.
Custer, H. F. (1973)	• Mathematics (SAT) • Reading (SAT)	*Mean Scores* *Program*: *7th* / *9th* / *11th*; *Control*: *7th* / *9th* / *11th* 26.3 / 23.8 / 29.9 / 31.1 / 30.9 / 35.6 25.9 / 24.4 / 34.8 / 25.6 / 26.9 / 27.6 *Graphs of Mean Scores:*  	*Multivariate F-Values* F (between groups) = .77 F (grades) = 4.63** F (Interaction/Change across groups) = 11.5** where **: significant at α = .01	The results from this study, although based on a very restricted sample, suggest that (1) the program students' math and reading skills decreased somewhat between 7th and 9th grades, while those of the control students increased slightly, (2) the program students' math and reading skills increased significantly more between 9th and 11th grades than did the comparable scores for the control students, and (3) the increase in the program students' math scores from 9th to 11th grades was about 1.2 standard deviations, while the increase in their reading scores was about 0.9 standard deviation.

APPENDIX C (continued)

Source	Basic Skill(s)	Statistics: a) Descriptive	Statistics: b) Inferential	Summary Interpretations
Dickerson, E. (1973)		*Pre* / *Post*		The results suggest that during the project period the students' basic skills scores increased significantly. More specifically, over the span of an academic year their reading scores increased by about .8 of a standard deviation, their math scores by 1 standard deviation, and their language scores by .7 of a standard deviation. However, their average performance levels on the respective posttests were still considerably below the 8th grade or high school levels.
		Mean / *S.D.* / *Mean* / *S.D.*	*F-Values*	
	• Reading (CTBS)	3.6 / 1.2 / 4.6 / 1.2	22.5**	
	• Arithmetic (CTBS)	4.0 / .9 / 5.0 / 1.2	21.4**	
	• Language (CTBS)	3.4 / 1.2 / 4.4 / 1.6	14.3**	
			where **: significant at α = .01	
		Length of Time in Program / *Means: Pre* / *Post*	*t-Values*	
	• Reading (GMRT)	1 year (n_1=12) / 4.0 / 5.0	2.3*	
		2 years (n_2= 4) / 3.3 / 3.9	2.5*	
		3 years (n_3=26) / 3.8 / 6.2	4.9*	
			*It is stated in the report that all three t-values are significant at α = .05	
Johnson, L. (1973)		*Pre* / *Post* / *Gain*	No inferential statistics were reported regarding the designated gains in basic skills levels.	The results of this study suggest that the affected students' basic skills scores did not increase between pre- and post-testing. Furthermore, the percentile equivalents of 9 and 15 reported for the posttests show that those scores remained at a very low level.
	• Reading (STEP)	Mean Scores: 459 / 444 / +5		
		Percentiles: 11 / 9 / -2		
	• English Expression (STEP)	Mean Scores: 432 / 435 / +3		
		Percentiles: 13 / 15 / +2		
Jones, H. B. (1973)		*Mean Scores:*		The results of this study are equivocal in that negative changes between pre- and posttesting were noted on two of the basic skills criteria, while positive changes were noted on two others. One interesting point is that the negative changes were observed on an "academically oriented" basic skills measure, while the positive changes were observed on an orally administered measure that emphasizes practical, occupationally relevant skills/behaviors.
		Site / *Pre** / *Post** / *Gain**	*t-Values*	
	• Reading (WRAT)	E: 95 / 95 / -.6	(not reported) — Not significant	
		W: 95 / 90 / -2.4	(not reported) — Not significant	
		C: 85 / 90 / -4.0	(not reported) — Not significant	
	• Arithmetic (WRAT)	E: 84 / 84 / 0	(not reported) — Not significant	
		W: 82 / 66 / -12.3	**: significant at α = .05	
		C: 77 / 76 / -2.8	(not reported) — Not significant	
	• Verbal (FAS)	E: 75 / 79 / 6.2	(not reported) — Not significant	
		W: 75 / 76 / 5.0	**: significant at α = .05	
		C: 62 / 69 / 4.1	**: significant at α = .05	
	• Numerical (FAS)	E: 61 / 51 / 1.3	(not reported) — Not significant	
		W: 47 / 47 / 2.0	(not reported) — Not significant	
		C: 37 / 42 / 3.2	(not reported) — Not significant	
		*The numbers of students upon whom the gain scores are based are not equal to the numbers who completed either the pre- or the posttests.	**The actual t-values were not reported for this study. Also, it was implied that those for which significance were not noted were found to be "not significant."	

APPENDIX C (continued)

Source	Basic Skill(s)	Statistics: a) Descriptive	Statistics: b) Inferential	Summary Interpretations
Langsdorf, M. and Gibboney, R. A. (1977)	• Reading (SAT) • Math (SAT)	*Average Gain Scores:* *Groups* — *Raw Score* — *Gr. Equiv.* "Interns" +3 +5 "Control" 0 0.0 "Interns" +1 +.4 "Control" −1 −.1 *Below 8th Grade in—* — *Interns Pre* — *Interns Post* — *Controls Pre* — *Controls Post* Reading 73% 58% 69% 69% Math 65% 57% 69% 70%	Significant difference noted, but no statistics were presented. Significant difference noted, but no statistics were presented. No inferential statistics were reported regarding these data.	The results presented in the study suggest that (1) the basic skills levels of the program students ("interns") increased significantly more than those of the control students between the administration of the pre- and posttests. Furthermore, it appears that the improvements in both reading and math were comparable. Even with the program students' improvement, however, over half of them are still scoring below an 8th-grade level.
Center for Field Research and School Services (1973)	• Reading (CAT) • Mathematics (CAT)	*Pre* — *Post* *Mean* — *S.D.* — *Mean* — *S.D.* 6.9 2.6 8.1 2.5 5.8 2.6 6.5 2.4	*t-Values* 8.3** 8.1** **: significant at α = .01	The results presently suggest that the basic skills of the affected students increased significantly during the course of the study—their reading increased by ½ of a standard deviation and their math increased by .3 of a standard deviation.
Spotts, R. and others (1978)	• Reading (SRA) • Math (SRA)	*Gains:* *Groups* — *Mean* — *S.D.* 2 years 1.8 6.7 1 year 2.0 4.8 Comparison 0.1 4.2 2 years 4.2 9.9 1 year 3.9 7.1 Comparison 1.0 6.1	*t-Values* 1.1 2.1* .2 1.8 2.9** .8 where *: significant at α = .05 and **: significant at α= .01	The results of this study suggest that (1) the program students' basic skills (particularly those of the students who were in the program for one year) increased more than the scores of the control students, and (2) the program students' math scores increased by about ½ of a standard deviation, while their reading scores increased by about 1/3 of a standard deviation.
Stein, E. M. and others (1976)	• Math • Reading Recognition • Reading Comprehension	*Mean Scores:* *Pre* — *Post* 5.4 7.6 5.3 7.1 5.6 7.2	*t-tests* t-value reported as significant at α = .01 t-value reported as significant at α = .01 t-value reported as significant at α = .01	The results presented in this study suggest that the affected students' basic skills levels increased significantly between pre- and posttesting. They also suggest that the increase in the students' math skills was somewhat greater than the increases in their reading recognition and reading comprehension skills.

APPENDIX C (continued)

Source	Basic Skill(s)	Statistics a) Descriptive				b) Inferential	Summary Interpretations
Walther, P. H. and Magnusson, M. L. (1975)		*Test Times:* *					The results reported suggest that the basic skills levels of subjects in both sites increased substantially over the course of the study, particularly during the three-month interval between the pretest and initial retest. The increases observed in reading and math scores were approximately equal in magnitude.
		Site	(T1) *Retest 1*	(T2) *Retest 2*	(T3) *Retest 3*	*t-tests*	
	• Reading (SAT)	S	8.1	9.2	9.6	Changes from T1 to T2 both significant at $\alpha = .01$; T2 to T3 tests not reported.	
		LB	6.7	7.4	8.0		
	• Mathematics (SAT)	S	6.7	7.7	8.3	Changes from T1 to T2 both significant at $\alpha = .01$; T2 to T3 tests not reported.	
		LB	5.7	6.4	7.1		
		* The differences between the indicated times are each approximately 3 months.					

APPENDIX D

Reported Relationships Between Related "Vocational Education Outcomes" and Dropping Out of School

Source	Outcome(s)	Statistics: a) Descriptive	b) Inferential	Summary Interpretations
Austin, J. J. and Sommerfeld, D. L. (1967)	• Employed at time of follow-up • Average wage (for those employed) • Average wage (entire group) • Skill level of job	*Level of Job* / *Program* Pre / Post / *Control* Pre / Post 42% / 66% / 43% / 55% $1.26 / $1.79 / $1.36 / $1.82 $ .53 / $1.19 / $ .58 / $1.00 Unskilled 78% / 40% / 86% / 46% Semi-skilled 22% / 50% / 14% / 50% Skilled 0% / 10% / 0% / 4%	For all four outcomes, no statistical tests were reported.	The results reported in this study suggest that both the employment rate and average wage earned by the program participants (as a group) are greater than those of the control subjects, but that there was not much of a difference between the groups with regard to average earnings (just for those who were employed) or in the levels of the jobs they held.
Redfering, D. L. and Cook, D. (1980)	• Mean annual income • Mean job complexity	*Dropouts* Mean / S.D. — *Graduates* Mean / S.D. $5,418 / $1,918 / $5,771 / $2,644 17.7 / 2.7 / 16.5 / 4.0	*t-Values* 2.77** 5.33** where **: significant at $\alpha = .01$	The data presented in this study suggest that high school dropouts have a significantly lower annual income and secure less complex jobs than do high school graduates.
Sharar, P. H. (1974)	• No. of weeks worked (in a year) • Weeks spent in additional training • Weeks spent in military • No. of weeks unemployed • No. of jobs held (in a year) • Longest job (in weeks) • Average weekly pay (while working) • Highest weekly pay • Annual income	*"Experimental"* Mean / S.D. — *Control* Mean / S.D. 43.1 / 14.1 / 16.6 / 18.7 2.5 / 8.1 / .6 / 3.0 .8 / 4.2 / 3.6 / 13.1 4.8 / 7.8 / 21.9 / 20.6 2.3 / 1.6 / 1.1 / 1.2 34.0 / 16.2 / 14.5 / 19.8 $ 101 / $ 19.2 / $ 19 / $ 15.6 $ 108 / $ 20.4 / $ 80 / $ 15.8 $1,777 / $1323. / $2,237 / $2006.	*t-Values* 6.0** 1.2 1.1 4.1** 3.2** 4.8** 3.2** 4.4** 4.7** where **: significant at $\alpha = .01$	The results from this study suggest that those subjects who completed the program (1) worked for more weeks (in a follow-up year), (2) were unemployed less time, (3) held more jobs (on the average), (4) tended to hold their jobs longer, and (5) earned substantially more money than those subjects who were included in the control group. Basically no differences were observed between the two groups with regard to weeks spent in additional training or weeks spent in the military.

APPENDIX D (continued)

Source	Outcome(s)	Statistics: a) Descriptive	b) Inferential	Summary Interpretations
Hornbostel, V. D. and others (1967)	• Employed (at points of follow-up)	*Group** / *At 12 months* / *At 24 months* VA: 61% / 52% V: 71% / 73% A: 58% / 48% C: 33% / 36%	No statistical tests reported.	The results from this study suggest that (1) the employment rate for those subjects who completed the "vocational" program was somewhat higher than the employment rate for those who completed the "academic" or no program; (2) the duration of employment and average annual earnings of those subjects who completed the "vocational" program were significantly greater than those of the control subjects; and (3) there were no major differences observed among the groups with regard to hourly rate of pay, job satisfaction, or employer ratings.
	• Weeks of employment per year	*Group* / *12 mo.* / *24 mo.* / *12 mo.* / *24 mo.* VA: 26 / 44 / 23 / 23 V: 32 / 49 / 23 / 32 A: 20 / 43 / 18 / 27 C: 9 / 36 / 7 / 13	The results of follow-up tests showed that at 12 months VA ≅ V > C for males and females, but all differences were "wiped out" by the 24th month.	
	• Hourly rate of pay	*Group* / *Males* 12 mo. / *Males* 24 mo. / *Females* 12 mo. / *Females* 24 mo. VA: $1.72 / $1.86 / $1.44 / $1.60 V: 1.64 / 1.98 / 1.23 / 1.53 A: 1.96 / 3.25 / 1.25 / 1.35 C: 1.20 / 1.94 / 1.16 / 1.26	No significant differences were observed.	*The designated groups are: VA: Vocational-Academic combined V: Vocational only A: Academic only C: Control
	• Average annual earnings	VA: $2,379 / $3,180 / $1,250 / $1,458 V: 2,551 / 3,470 / 1,077 / 1,638 A: 2,222 / 4,069 / 771 / 1,431 C: 762 / 2,675 / 316 / 762	At 12 month VA ≅ V > C for both males and females, but all differences were "wiped out" by the end of the 24th month.	
	• Job satisfaction	VA: 61.2 / 58.8 / 64.5 / 70.6 V: 61.1 / 55.2 / 66.9 / 67.1 A: 52.2 / 56.4 / 51.5 / 59.1 C: 52.0 / 57.0 / 59.1 / 48.7	No significant differences were observed.	
	• Employer ratings	VA: 37.0 / 39.2 V: 37.0 / 44.0 A: 37.7 / 37.6 C: 27.6 / 30.8	No significant differences were observed.	
Combs, J. and Cooley, W. W. (1968)	• Employment rate (what would "normally" have been 1 year after high school graduation)	*Dropouts* / *Controls* 90% / 91%	No statistical tests reported.	The data reported in this study do not suggest that there are any major or substantial differences between the samples of dropouts and control students on the designated criteria. Although there are slight differences between them, those differences appear to be unsystematic, if not equivocal.
	• Annual salary (for those employed)	$3,650 / $3,500	No statistical tests reported.	
	• Post high school training — trade school — technical school	7% / 4% .7% / 5%	No statistical tests reported.	
	• Active military duty	30% / 33%	No statistical tests reported.	

APPENDIX E

Strategies for Dropouts

Study	Content	Methodology	Organization	Facilities
Austin and Sommerfeld (1967)	1. listed both *general and specific objectives* for training courses in basic communications and basic computations; includes detailed topical outlines 2. utilized standard *norm-referenced tests* to evaluate student progress, i.e., GATB (General Aptitude Test Battery); also WISC, WAIS, and WRAT Scales, other standardized personality measures	1. an *integrated* program designed to improve overall employability, to prepare clients for specific employment, and to increase basic skills achievement simultaneously with improvement in general training and employability 2. *instructional modes or methods* — the program began with a two-week orientation provided to trainees by representatives of local agencies who discussed opportunities for and future goals of trainees. During the first six months, trainees spent four hours in specialized training in reading, writing, speaking, and computation, in addition to training in personal health and habits and job orientation. Counseling sessions covered a variety of topics including current events, family problems, citizenship, budgeting, home management, personal relationships, and field trips to local businesses. The second program period entailed specific occupational training (trainees spent six hours a day in shop and one hour each in related math and communications techniques). Some vocational programs provided on-the-job training. In all cases, staff attempted to tailor both academic and occupational training to individual trainee needs, so that the *interaction of learner characteristics with techniques of program delivery* was generally favorable to overall improvement of trainees. 3. *materials* — No information was provided.	1. *staff* — consisted of six women and twelve men who were — vocational instructors — academic instructors 2. *staff qualifications* — • vocational instructors were successfully employed in subject area taught prior to delivery of services • academic instructors were successful high school teachers before coming to skill center • all counselors but one (a past employee of the state employment office) were previously high school counselors 3. *program duration* — minimum of four months and an average of nine months — phase 1: ½ day spent on basic skills and ½ day spent in various occupational training areas — phase 2: 6 hours in shop or occupational training and 2 hours of related math and communications training 4. *support services* — orientation provided by speakers from local agencies 5. 278 students participated in the Muskegon Skill Center; they were classified as disadvantaged according to the DOL definition (they were dropouts) 6. *program context* — operated in a separate facility, the Muskegon Area Skill Training Center, under the auspices of the MDTA 7. *environmental context* — urban (Muskegon, MI)	1. the program was separately housed in Muskegon Area Skill Training Center. No details of the physical plant were provided.

APPENDIX E (continued)

Study	Content	Methodology	Organization	Facilities
Carlson (1979)	1. listed *specific goals and objectives,* both for students and for the project— • student — enhance self-concept, set and develop personal goals, relate to others, eliminate sex role stereotyping, improve life and basic skills, understand job clusters and families, and develop expertise in consumerism • project — involve the community in the educational process, facilitate decision making, and develop a transportable experience-based career education model 2. provided training for improvement in reading, mathematics, and oral and written communication skills 3. utilized *norm-referenced tests* to evaluate skill levels, i.e., the Wide Range Achievement Test (WRAT), the Gray Oral Reading Test, the Cambridge Introduction to Arithmetic Diagnostic Test, and the English 2600 Series by Harcourt, Brace and World. These same measures were readministered as post-tests to measure improvement.	1. an integrated program in which most students received daily instruction in one or more basic skills areas, in addition to participating in career exploration activities provided either on-site by community employers or at the project site. In most cases, basic skills improvement was linked to the student's pursuit and completion of the GED or equivalency degree or by earning high school credit. 2. no information was provided on specific *instructional modes or methods* 3. *materials* used included competency units developed with input and assistance of community employers; in addition, a series of cassette learning packages covering work-related basic skills was purchased 4. the *learning process* employed was experience-based career education with additional instruction in the basic skills areas 5. the *interaction of learner characteristics with techniques of program delivery* was based on the development of individualized learning techniques that took into account each student's unique learning rate and style	1. *staff and staff qualifications* were not described, with the exception of community employers who were utilized as instructors at job sites 2. *program duration* — program duration was not described; the Pathfinder project itself lasted three years 3. *support services* — students were informed of assistance available through the state job service and job bank listings and were taught to utilize these services. They were also made aware of the services of agencies such as the Vocational Rehabilitation Office, Social Services, Mental Health Services, CETA, and the Bureau of Apprenticeship and Training 4. *primary actors* — 330 students were served by the program, which sought to teach dropouts, those who had not made career decisions, the handicapped adults reentering the labor market, and those with deficiencies in the basic skills or in employability 5. *program context* — operated within the local school district and at various job sites throughout the community 6. *environmental context* — primarily rural with an undiversified agricultural economy	1. the *locus* of the program was not described

APPENDIX E (continued)

Study	Content	Methodology	Organization	Facilities
Besant (1969)	1. lists no written *general or specific objectives* for a curriculum that included basic skills improvement in mathematics, language, and social studies. The goal of the Job Corps Center program was to increase basic skills achievement from the seventh-grade level to the ninth- or tenth-grade level. Included no *detailed topical outlines* 2. program description did not indicate the use of either norm-referenced or criterion-referenced measures to evaluate student progress	1. an integrated program described as a "continuous progress curriculum" (rather than a Carnegie unit pattern) that included approximately twenty-one weeks of instruction in mathematics, language, and social studies in addition to training in various vocational areas 2. *instructional modes or methods* — group instruction with individualized instruction provided on the basis of each trainee's individualized program. Individualized instruction was employed primarily for remedial work on an as-needed basis. Counseling was intensive, personalized, realistic, and focused on all aspects of the student's life. *All* staff members were involved in the counseling process. Curriculum was modified and adapted unit by unit to allow for flexible timelines. 3. *interaction of learner characteristics* with techniques of program delivery was generally favorable to overall improvement of trainees' basic skills and employability. Of particular interest is the fact that trainees aspired to middle-class values and status, an attitude unexpected by staff. These aspirations seemed to further trainees' progress. 4. *materials* — no specific information was provided	1. *primary actors* — male, primarily of minority origin; most were dropouts and came from broken homes 2. *staff and staff qualifications* — described as "master teachers" assisted by young, inexperienced tutor/counselors. In addition, the counseling staff consisted of a head counselor, senior counselors, and a counseling specialist. Teaching staff was a mix of skilled and untrained teachers. 3. *program context* was a Job Corps Center that included environmental control through an in-residence requirement 4. *program duration* — the center was in operation for three years; students spent six to nine months in class and three months in on-the-job training on average 5. *support services* — advice was provided to staff by representatives of the data processing, offset printing, and distributive trades 6. *environmental context* — urban (New Bedford, MA)	1. the *locus* of the program was the Rodman Job Corps Center in an urban area of a northeastern state

APPENDIX E (continued)

Study	Content	Methodology	Organization	Facilities
Ware (1975)	1. lists no *specific objectives* for the program 2. no *instruments* were used for pre- or post-testing students	1. a *non-integrated* program predicated on remediation through individualized instruction in art, business, home economics, language arts, mathematics, science, and social studies. Students also receive "coordinated vocational academic education." 2. *instructional modes or methods* — each program area provides instruction on the basis of individual student need through an "individualized program of work." Students sign in and out for work in subject areas as they would on a job. Attendance is not monitored in the traditional manner. Students select a topic for study from prepared "opportunity sheets" and must complete twelve topics in one semester. 3. *interaction of learner characteristics with techniques of program* — students sign learning contracts in which they list their objectives in behavioral terms and identify, describe, and write goals. The learning contract techniques elicit generally favorable or positive responses from students because they feel that they can control their own learning experiences. Flexible scheduling also contributes to program success because students feel less threatened by competition with peers and learn to manage their own time. 4. *learning process* employed was individualized instruction in an alternative school setting to remedy low basic skills achievement. 5. *materials* — programmed instruction books, filmstrips with activities, quizzes, questions, simplified learning packages, booklets with photographs, and actual laboratory experiences	1. *staff* — consisted of academic and vocational teachers. Teachers provide guidance to students through ongoing diagnosis of student needs and prescription of appropriate instructional materials 2. *staff qualifications* — not mentioned 3. *program duration* — appears to be a full-year program 4. *support services* — not mentioned 5. *primary actors* — maximum of 350 students at each of four centers to maintain a pupil–teacher ratio of about 15:1 6. *program context* — four separate centers that function as alternative schools 7. *environmental context* — urban (Dallas, TX)	1. *locus* of the program — four separate, leased facilities primarily in the central city area

APPENDIX E (continued)

Study	Content	Methodology	Organization	Facilities
Brown (1970)	1. lists no *general or specific objectives;* however, the program's philosophy includes helping students to analyze themselves honestly, restoring a sense of self-worth and confidence, providing them with salable skills, and increasing job opportunities 2. program description did not include the use of *norm-referenced* or *criterion-referenced* measures of student progress 3. no *topical outlines* were provided; however, nineteen vocational training areas offered through this program are listed	1. a *remedial* program designed to upgrade the basic skills achievement levels, increase the employability, and facilitate the placement of the clients of this MDTA program 2. *instructional modes or methods* — the first six to twelve weeks, depending on individual performance level, were devoted to basic education classes in reading, arithmetic, library use, and attitudinal improvement. The following three weeks were spent in prevocational experiences through which students rotated through all vocational classes before selecting an area of concentration. Staff provide psychological counseling and aptitude testing to assist the student with vocational choice. Vocational training occupies the remaining 25 weeks. 3. *interaction of learner characteristics with techniques of program delivery* — was generally favorable to improvement of clients' basic skills achievement and to job placement. Program is predicated on the transformation of failure and inability to succeed to a positive attitude and "self-help" to success. Program rationale is to remove psychological crutches, thereby increasing students' self-respect. 4. *materials* — not mentioned 5. *learning process* — basic education courses integrated with psychological counseling and attitudinal improvement through self-questioning	1. *primary actors* — approximately 262 students between eighteen and thirty-five years old, functioning at third grade level, and either unemployed or underemployed, both male and female, completed this program each year of its three-year span 2. *staff and staff qualifications* — were not described 3. *program duration* — approximately forty weeks— • twelve weeks of basic education • three weeks of prevocational training • twenty-five weeks of vocational training 4. *support services* — placement through Missouri State Employment Service 5. *program context* — not described 6. *environmental context* — primarily rural	1. *locus* — not described

APPENDIX E (continued)

Study	Content	Methodology	Organization	Facilities
Hornbostel et al. (1967)	1. describes *neither general nor specific* objectives for the three training courses (academic, academic/vocational, and vocational) 2. includes *no topical outlines* of training course content 3. utilized a battery of norm-referenced instruments (pre-test, post-test, or both) including the General Aptitude Test Battery (GATB) and the Sequential Tests of Educational Progress (STEP) to evaluate academic achievement levels of trainees	1. a tripartite *non-integrated* treatment that consisted of vocational, vocational/academic, and academic instruction predicated on complementary functions of these educational components 2. *instructional modes or methods* — separate academic curriculum (communications skills, mathematics, social studies, and science) and vocational curriculum (eight occupational areas) offered on an individualized (as needed) nongraded basis 3. *learning process* — group lectures, demonstrations, and peer tutoring indicate a traditional approach with individualized attention as needed 4. *interaction of learner characteristics with techniques of program delivery* — each class accommodated varying rates of learner progress or task mastery and relied on peer tutoring to facilitate < or > proficiency 5. *materials* — commercially available textbooks supplemented by demonstrations and hands-on experience with equipment when appropriate	1. *primary actors* — 338 unemployed or underemployed dropouts between the ages of 17 and 22 who had been out of school at least one year 2. *program context* — program operated in a large urban high school 3. *program duration* — total length varied from 20 to 48 weeks • academic group — 3 hours per day • academic/vocational group — 8 hours per day • vocational group — 5 hours per day 4. *staff qualifications* — not described 5. *support services* — consisted primarily of extracurricular activities — • a student speaker's bureau • enrichment classes offered by regular staff • assemblies with speakers from government and business and industry In addition, both in-school and out-of-school counseling were provided by program staff and state employment security commission respectively 6. *environmental context* — urban (Oklahoma City, OK)	1. *locus* — program operated within a large urban high school; physical plant was not described

APPENDIX F

Strategies for Potential Dropouts

Study	Content	Methodology	Organization	Facilities
Buckner (1976)	1. lists *broad objectives* — prevention, control, and elimination of delinquent behavior correlated with a comprehensive dropout prevention and crime reduction program. Also includes *specific objectives* that reflect interventions to improve basic skills achievement levels as reflected by standardized tests, school achievement records, and school grades; to increase employability; and to improve attitude and behavior. 2. mentions *cognitive and attitudinal testing* but does not specify instruments used	1. a *remedial* program designed to improve basic skills achievement, increase employability, and effect attitudinal and behavioral change 2. *instructional modes or methods* — not specified 3. *interaction of learner characteristics with techniques of program delivery* — the program was predicated on the following generalization: that education contributes to a reduction in juvenile crime and in recidivism among program participants who are returnees from correctional institutions. Two approaches to program delivery: the community organization approach and the work role approach provide comprehensive support and reinforcement both in the cognitive and affective realms. The combination of support services and work experience with tangible rewards encourages students to develop full potential. 4. *learning process* — potential dropouts and delinquents attend the program on a part-time basis for remedial academic work supplemented by appropriate support services 5. *materials* — no descriptive information was provided	1. *staff* — consisted of teachers of English and mathematics, counselors, community youth workers, school and community representatives, and correctional counselors 2. *staff qualifications* — described as those with "a cool head, a warm heart, and a firm hand" who could foster a positive attitude in clients toward school and the benefits of education 3. *program duration* — not indicated 4. *support services* — professionals from community agencies who assist with diagnostic procedures, social service requirements, inservice training, and instruction in effective teaching methods for staff 5. *primary actors* — a total of 300 students per year who have been identified as potential dropouts or delinquents or both 6. *program context* — operated in five separate dropout prevention centers in a large metropolitan area 7. *environmental context* — urban (Chicago, IL) including ghetto or poverty pocket areas	1. *locus* — the program was separately housed in five "dropout prevention centers" in metropolitan Chicago

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Karnes et al. (1966)	1. includes no *specific objectives* or *topical outlines* 2. utilizes *norm-referenced* instruments (Stanford Achievement Tests) to measure changes in basic skills achievement levels over time	1. an *integrated* program for potential dropouts classified as slow learners with instruction in basic communication skills (reading, speaking, writing, and spelling) and in practical math integrated with "vocationally necessary" skills or requirements 2. *instructional modes or methods* — curriculum was tailored to meet specific needs. Students in basic communication and computation courses received individual and small-group remedial instruction on an "as needed basis," as determined by severe educational retardation or specific learning disability 3. *interaction of learner characteristics with techniques of program delivery* — the highly structured classroom environment, constant routinization, and an approximate pupil-teacher ratio of 20:1 provided students with individualized instruction, attention, or both when needed and produced generally favorable results both in academic and vocational classes 4. *learning process* — a highly structured classroom environment with individualized instruction and attention provided as needed. 5. *materials* — although specific materials were not mentioned, staff selected, adapted, and prepared instructional materials geared to student needs because of a paucity of commercially available products. Various audiovisual aids were used to supplement materials.	1. *staff* — consisted of teachers, social workers, and psychologists 2. *staff qualifications* — teachers were chosen both for professional training in various vocational areas and in special education and for personal characteristics such as stability, flexibility, and creativity 3. *program duration* — students were enrolled for a minimum of two years 4. *primary actors* — 286 students between the ages of thirteen and twenty-one, of low SES, and with IQs between 75 and 90 5. *support services* — were provided primarily by social workers and entailed assistance in ameliorating students' social and emotional maladjustive behavior. All had masters' degrees in social work and had prior experience with "troubled youths."	1. *locus* — program was separately housed in facilities renovated specifically for this program

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Dickerson (1973)	1. lists *specific goals and objectives* to counsel students as needed in self-appraisal with regard to occupational preferences; to provide a sheltered work experience and vocational curriculum incorporating, combining, and relating basic or compensatory education with the acquisition of vocational skills according to student ability and interest 2. utilized *norm-referenced testing* measures such as the California Basic Skills Test, the Gates-McGinities Reading Test, and the General Aptitude Test Battery (GATB) used both as pre- and as post-tests 3. includes no *topical outlines*	1. an *integrated* program in which vocational instruction in five occupational areas was combined with a compensatory program in basic communication skills, reading, and mathematics as needed for jobs. A remedial reading unit also was available. 2. *instructional modes* or *methods* — teachers prepared materials to be used with the individualized instructional approach. Basic skills (communication, reading, and mathematics) reflected the information necessary to perform successfully in the chosen occupational area, insofar as it was possible. 3. *learning process* — materials and curriculum were individualized to accommodate each student's unique needs and to include functional learning experiences applicable to daily living 4. *interaction of learner characteristics with techniques of program delivery* — basic skills education based on concrete problems coupled with its relevance and relationship to vocational instruction and sheltered or part-time work experience was generally favorable to program participants 5. *materials* — teachers created, adapted, or modified both vocational and general education curriculum materials. Their efforts resulted in 38 teaching units with a low reading age level utilizing individualized instruction coupled with vocational orientation, information, and work experience activities.	1. *primary actors* — 171 students participated in the program during its three-year span. They were predominantly black and male. 2. *staff* — consisted of a project director (a member of the school's administrative staff), four teacher-coordinators, one reading specialist, and ten sheltered work station supervisors together with consultants and third-party evaluators 3. *staff qualifications* — project director is an administrator as well as on the school board. Four teachers all have bachelor degrees and a genuine concern and understanding of special youth. Ten sheltered work station supervisors were department heads within their specific areas. All staff attended a two-day inservice session that addressed curriculum, materials, and professional training to enhance awareness, understanding, and affective skills needed when dealing with special youth. 4. *program duration* — data collected for the period from July 1, 1970 to June 30, 1973 5. *support services* — extensive individual, group, and behavioral counseling was provided to students. Interest and aptitude testing were completed as well as career exploratory activities. Part-time job placement services were provided. Students also obtained instruction from a reading specialist.	1. *locus* — facility for this project was divided between a junior high school and a high school • junior high school was over-crowded; therefore, two portable classroom units were provided • high school was equally as crowded. One classroom was divided into two rooms by a partition

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Johnson (1973)	1. lists *broad objectives* – to serve potential dropouts in the tenth grade who had basic skills deficiencies, poor attitudes toward school, or individual adjustment problems. Also includes *specific objectives* – to improve academic basic skills; to promote more positive self-concepts; to foster more positive attitudes toward school and the dropout prevention program; to foster awareness and acceptance of responsibility for behavior; to develop greater ability to relate well to others; to increase awareness of job characteristics; to clarify educational and vocational goals 2. utilizes *norm-referenced* instruments (Sequential Tests of Educational Progress) to measure changes in some academic basic skills over time (reading, English expression, and social studies). Locally developed mathematics achievement tests also were administered to students at the beginning and end of the school year. *Attitudinal* measurement was accomplished through teacher ratings of students in six behavioral categories—classroom involvement, assumption of work responsibility, critical questioning, classroom leadership, consideration of others, and feelings about self.	1. an *integrated program* for tenth-grade students considered to be potential dropouts with individualized instruction in the basic skills coupled with an emphasis on vocational awareness and orientation 2. *instructional modes or methods* were highly individualized for every class (English, mathematics, and social studies) and were purposely vocationally relevant 3. *interaction of learner characteristics with techniques of program delivery* was generally favorable to students enrolled in the program. Individualized instruction and attention resulted in modest gains on STEP reading and English expression tests and greater gains on social studies test. Students themselves indicated that reading improvement equalled 85%, writing 65%, math 74%, and social studies 63%. The majority felt that, in addition to academic improvement, they increased their understanding of themselves as well as of careers and jobs. 4. *materials* – not described other than the fact that all were job- or career-related. Work experience and counseling departments provided occupational materials. Field trips, work-related films, and job shadowing augmented the curriculum.	1. *staff* – consisted of a reading teacher and four certified teachers –one each in English, mathematics, reading, and social studies. In addition, a tutor, a work experience coordinator, a counselor, a social worker, and four teacher aides assisted basic skills instructors. 2. *staff qualifications* – not described, except that academic instructors were certified 3. *program duration* – basic schedule was three consecutive one-hour classes in English, mathematics, and social studies in the morning and a special one-hour reading class for students with severe reading problems. Actual program duration was a nine-month academic year. 4. *support services* – were provided by a school counselor and a school social worker 5. *primary actors* – about 100 potential dropouts from the tenth grade	1. *locus* – the program was housed within an urban high school in Minneapolis, MN

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Center for Field Research and School Services (1973)	1. lists the following *specific objectives*— • 80% of participating students who complete the program will make measurable progress toward their high school diploma • 80% of participating students who complete the program will show significant improvement of absenteeism and tardiness • 80% of participating students who complete the program will show a statistically significant improvement in academic achievement as measured by a standard teacher-made examination for each major subject • the program will enable at least 80% of participating students to obtain at least average ratings of work performance from work component supervisors 2. also lists *specific evaluation objectives* to measure level of accomplishment of the corresponding program objectives cited above 3. lists *norm-referenced* instruments used both as pre- and post-tests to determine student progress in basic skills/ academic areas: • California Reading Test • California Achievement Test—mathematics In addition, students were pre- and post-tested in science and social studies by teacher-made and city-wide examinations respectively.	1. a *nonintegrated program* with a remedial instruction component to supplement academic and occupational skills training, job orientation and guidance, and paid work experiences 2. *instructional modes or methods* — were not described 3. *interaction of learner characteristics with techniques of program delivery* was generally favorable to student progress toward meeting the stated program objectives 4. *learning process* — was a work-study program combining selected academic classes and paid work experience in alternate weeks for a full year 5. *materials* — commercially available curricula supplemented by teacher-made materials as needed	1. *staff* — consisted of three counselors, an unspecified number of teachers, and administrative personnel 2. *staff qualifications* — were not described except for a comment made by evaluators on the relative lack of experience of counseling staff 3. *program duration* — a full year (summer and academic year) 4. *support services* — not described 5. *primary actors* — 240 potential dropouts from fourteen urban high schools, predominantly minority members 6. *program context* — operated separately from regular high schools	1. *locus* — the program was separately housed in a facility in metropolitan New York City

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Thompson, D. E. (1971)	1. lists both *broad* and *specific* objectives — the broad objective of this program was to assist junior and senior high school students with high dropout potential to overcome academic deficiencies and to provide these students with occupational orientation and skill development training experiences. Specific objectives were — • to intensify the holding power of school through dynamic motivation and expert guidance • to develop and strengthen basic communication and mathematics skills • to provide learning experiences to combat the influence of competing, "pull away from school" attractions • to cultivate more positive attitudes of students toward their limitations • to help students improve self-image and to elevate their aspirations • to prepare school dropouts not subject to compulsory attendance to become constructive members of society • to ensure that students have marketable skills when they leave school 2. no specific *instruments* were described. Eligibility was based on chronological age, intelligence quotient of 70-90, academic retardation of two or more years in language and mathematics, cumulative record of academic, emotional, and social maladjustment, and a record of irregular attendance in elementary school. 3. includes *detailed topical outlines* of selected basic skills courses at various grade levels	1. an *integrated* program predicated on the remediation of basic skills deficiencies in oral and written communication and in mathematics 2. *instructional modes or methods* — within the framework of the traditional classroom, basic skills course content was purposely related to work on occupational concepts that could be readily applied by students. Skill development training was provided through actual employment for fifteen hours weekly during the latter portion of the program. 3. *interaction of learner characteristics with techniques of program delivery* was generally favorable to successful learning experiences for students. Class size was limited. Curriculum and materials were revised or otherwise altered to reflect simplicity and a pragmatic approach. Improved self-image and a more positive attitude resulted from direct attention to deficiencies in these areas. 4. *learning process* — potential dropouts follow a full academic and vocational program with a work experience component designed to enable them to relate academic courses to the world of work. 5. *materials* — not described	1. *staff* — not described 2. *staff qualifications* — not specified except for a statement that project teachers were selected on the basis of their ability, understanding, and desire to help students of low academic achievement 3. *program duration* — a four-year program consisting of nine-month academic periods 4. *support services* — included a carefully planned guidance program, and prevocational, vocational, work-study, and training station experiences 5. *primary actors* — approximately 1200 students identified as potential dropouts were served	1. *locus* — program was housed within the area high schools offering these services in a major southwestern metropolitan area (Houston, Texas)

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Hakanen, L. J. (1978)	1. *broad objectives* — wanted students to attend school voluntarily, to achieve some academic success while there, and to improve their negative self-images 2. studying basic subjects—English, computational skills, science, and social studies—during an abbreviated three-hour school day; also study problems of getting and holding a job; a complete curriculum is currently being developed	1. *instructional modes and methods* — not specified 2. *learning process* — self-contained classroom situation that allows the teacher to develop a very thorough knowledge of the problems of each student; pace of class is individualized to fit their needs; self-discipline is emphasized as an important success factor 3. *environment* — full of positive thoughts and reinforcing messages 4. *interaction of learner characteristics with techniques of program delivery* — individualized and continued positive reinforcement led to positive self-images 5. *success factors* — quality teachers, school board, and administration not afraid of change; and support staff	1. *staff* — teachers (no academic specialty listed), counselors, school psychologist, and assistant principal 2. *staff qualifications* — described as not the average teacher duties; included multidiscipline teaching, counseling, report writing, staffing, and coordinating 3. *program duration* — not originally designed as a terminal program; initially on semester-to-semester basis for 9th and 10th grades but now covers 11th and 12th also; the maximum length was originally set at one year; students in school for ½ day 4. *support services* — none listed 5. *primary actors* — between 15 and 20 students per semester who had been identified as potential dropouts	1. *demography* — Harlem School District, Rockford, Illinois; 150,000 people 2. *locus* — program is housed in regular high school building
Gorman, C. V. (1978)	1. *major objective* — to enable students to return to the regular school program or enter the Occupational Work Experience program 2. three hours of lab experience devoted to two chores: (1) manufacturing cap frame; (2) assembling frame and completing cap; students spent 1½ hours per day in related instruction consisting of general and related subject matter. General subject matter includes: orientation to world of work, employer-employee relations, human relations, hygiene, free enterprise system, and job application. Related subject mat- *(continued)*	1. a *remedial* program designed to help voc-ed students particularly disadvantaged to acquire manipulative skills and social adjustments before they were placed in the Occupational Work Experience program 2. *instructional modes or methods* — based on open entry/open exit concept; unspecified otherwise 3. *interaction of trainee characteristics with techniques of program delivery* — extensive motivation achieved through incentive evaluation system; students evaluated daily on 20-point *(continued)*	1. *staff* — career education staff, supervisor of T&I, voc-ed teachers, vocational guidance counselors, and English and history teachers 2. *staff qualifications* — not identified 3. *program duration* — open entry/open exit 4. *support services* — local dealer of truck caps who handles financial arrangements; no other information provided on support services 5. *primary actors* — disadvantaged youth who have lost interest or are underachieving; enrollment limited to 20 students/teacher	1. *demography* — located in northeastern Ohio in heavily industrialized community of 65,000; major industries—steelmaking and auto assembly plants 2. *locus* — in-school sheltered workshop 3. *equipment and expandables*

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Gorman, C. V. *(continued)*	ter includes: blueprint reading, shop math and assembly line techniques. Academically students are required to take English and history classes. 3. *cognitive and attitudinal criteria* – students are: (1) performing in IQ range of 79-90; (2) ability to learn but low achiever; (3) at least one year behind academically; or (4) unable to adjust to co-op work experience. No specific tests mentioned.	system broken down as: quality–5 pts., quantity–4 pts., safety–4 pts., attitude–4 pts., and clean-up–3 pts.; at end of nine weeks students receive monetary rewards in direct proportion to the number of points they have accumulated; *philosophy* – disadvantaged youth, given purposeful educational experiences, can develop employable skills, technical knowledge, desirable work habits, and attitudes that will enable them to take their places in the community as productive workers 4. *learning process* – hands-on experience for students in voc-ed for three hours a day 5. *materials* – not described		
Casella, D. A. and Schrader, D. R. (1975)	1. *scope* – not an academic urban studies course; it was true counseling with elements of interpersonal struggle, modeling, trust-building, reality-testing, and catharsis 2. *dependent variables* – (1) self-concept measured by Tennessee Self-Concept Scale; (2) interpersonal orientation assessed by FIRO-B Scale; and (3) behavior reported by school records of attendances, credits earned, and productivity 3. *findings* – experimental group showed more improvement in the three areas of self-concept, credit earning, and productivity although not statistically significant	1. a *remedial* program to decrease the alienation felt and exhibited by most continuation students; activity counseling was used to meet this goal 2. *instructional modes or methods* – not really instructional in nature; activity counseling (a) removes the counselor from the adult authority role, (b) develops natural relationships, (c) increases counselor comfort and student relaxation, (d) becomes a medium for spontaneity, and (e) gives rise to natural limits 3. *learning process* – group of twelve students, one teacher-counselor, and one adult volunteer had urban encounter lasting four hours, which *(continued)*	1. *staff* – teachers-counselors and adult volunteers 2. *staff qualifications* – not identified 3. *program duration* – ten weeks 4. *support services* – meeting on-the-scene with some person involved in urban life; the entire metropolitan area functioned as a supporting service 5. *primary actors* – 50 dropout high school students from Beverly Hills Continuation High School	1. *locus* – Beverly Hills Continuation High School – a small learning center located in an industrial park

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Casella, D. A. and Schrader, D. R. *(continued)*		consisted of meeting with some person involved with urban life on-the-scene and a subsequent exchange of opinions, judgments, and feelings. The group then split into triads and explored the surrounding area interviewing and talking with people. 4. *interaction of learner characteristics with techniques of program delivery* — urban activity counseling offers abundant connections or contact points with community, school, and self and therefore is tailor-made for borderline dropout high school students 5. *materials* — no descriptive information		
Thornburg, H. D. (1974)	1. *broad objectives* — (1) a measure of the effectiveness of special academic programs designed especially for the potential dropout determined in terms of holding the students in school; (2) based on the assumption that attitude toward school is an important variable affecting a student's decision to stay in school, the effectiveness of special academic programs in producing positive attitude shift was measured 2. *specific hypotheses* — (1) no difference in IQ between students placed in special academic program and voc-ed program as measured by Otis Quick-Scoring Mental Ability Test; (2) no difference in entering attitudes between special academic voc-ed measured by Pupil Opinion Questionnaire, *(continued)*	1. a *remedial* special academic class covering English and mathematics not designed to increase academic skills as much as to help students feel self-worth and gradually develop a positive attitude toward school 2. *instructional modes or methods* — team teaching and positive reinforcement techniques were the primary learning-instruction component although teaching style was left up to the two instructors.	1. *staff* — two instructors of English and mathematics 2. *staff qualifications* — no selection criteria provided 3. *program duration* — one academic year 4. *support services* — not outlined 5. *primary actors* — 154 high school freshmen from lower SES families passed on family income. Group was divided: 41.7% Mexican American; 27.8% black; 22.2% Anglo; 48.3% Indian. 36 placed in special academic programs and 118 in regular voc-ed program; an additional 94 students selected as control group. *(continued)*	1. *locus* — rural Arizona high school

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Thornburg, H. D. *(continued)*	Form A; (3) post-test using Pupil Opinion Questionnaire, Form B will show increase in positive attitude toward those in special academic programs compared to those in voc-ed; (4) no difference in change scores between those in academic and those in regular classes; (5) greater proportion of dropouts among potentials in voc-ed course in contrast to regular academic program; (6) greater proportion of dropouts among potentials in special academic programs in contrast to regular academic program. 3. *results* – hypotheses 1 and 2 were accepted; data for hypotheses 3 and 4 were not statistically significant; hypothesis 5 was accepted, and hypothesis 6 was rejected. 4. *conclusions* – (1) a special academic program in which positive reinforcement techniques are used is an effective way of maintaining attitudes toward school as well as holding potential dropouts in school; (2) no clear evidence that placement in voc-ed program is sufficient to hold youth in school; (3) since effects found were result of special academic programs, thought should be given to placing students in program for greater portion of day.		6. *criteria for selection* – (a) low in academic potential measured by Academic Promise Test; (b) below average in IQ measured by Otis Quick-Scoring Test; (c) 8th grade appraisal by teacher; (d) attendance records; (e) academic grades; and (f) if they were averaged.	

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Perkins, L. H. (1980)	1. *broad objectives* — to reach a point where success in voc-ed program is possible 2. *orientation* — adult with procedures to: • analyze individual student strengths and weaknesses in 3 Rs • prescribe instruction to correct weaknesses • manage itself • modify itself as needed 3. used a *norm-referenced* Test of Adult Basic Education (TABE) to establish starting point for students	1. IMTS (Individualized Manpower Training System) was established as a support program for students to correct basic education skills 2. *instructional modes or methods* — IMTS is a self-paced, modularized system with pre- and post-tests 3. *interaction of learner characteristics with techniques of program delivery* — the inherent characteristics of motivating students, open-entry and open-exit study, little or no duplication of past educational achievements; staff work closely with students initially to ensure successful completion of the first programmed module and post-module test 4. *materials* — 20 study carrels, a conference room, a testing room, and a staff office	1. *staff* — one professional and two paraprofessionals per 30 students 2. *staff qualifications* — professionals must be able to analyze, prescribe, manage, evaluate, coordinate with other programs in its school, and administer IMTS 3. *program duration* — studies in IMTS are completed when student satisfies objectives stated at beginning as determined by a Test of Adult Basic Education (TABE); they have found that daily two-hour sessions in IMTS are most successful. 4. *support services* — a local university provides workshops in orientation, establishing and staff training; they also analyze data on results 5. *primary actors* — students entering voc-ed program and who have deficiencies identified by teachers or counselors in the three Rs 6. *program context* — operated in 101 different schools in Florida	1. *locus* — housed within area voc-tech centers, community and junior colleges, high schools, junior high schools, skill centers, adult programs, correctional institutions, and on Indian reservations

APPENDIX F (continued)

Study	Content	Methodology	Organization	Facilities
Raymond, E. (1978)	1. *broad objectives* – counseling and tutorial program designed for secondary school potential dropouts; specific objectives to improve the confidence and self-concept of the potential dropout 2. *testing* – reading improvement is measured by San Diego Assessment and Gates-MacGinitie Reading Test; self-concept is measured by Piers-Harris Self-Concept Scale 3. *specific objectives* – (1) have 25% of students reduce treasury by 25% (2) have 33% of students raise GPA by minimum of .25 (3) 25% of students would develop more positive attitudes	1. a *volunteer* program to improve self-concept and confidence 2. *instructional modes or methods* – not specified; students were mainstreamed 3. *interaction of learner characteristics with techniques of program delivery* – provides humane services to point where student can say "Somebody cares about me." 4. *learning process* – just a room where students can go between classes 5. *materials* – no descriptive information	1. *staffing* – two professionals and one paraprofessional with no specific academic background 2. *staff qualifications* – teachers who can love kids, who can confront them with their failures in a positive manner and who are capable of seeing the potential in every human being 3. *program duration* – not mentioned 4. *support services* – not mentioned 5. *primary actors* – potential high school dropouts 6. *environmental context* – Fargo South High School, Fargo, North Dakota	1. *locus* – housed in the basement of the regular high school

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