1974

Effectiveness of a compensatory program for selected secondary students

Donnie LaRance Brubaker

Iowa State University

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Effectiveness of a compensatory program for selected secondary students

by

Donnie LaRance Brubaker

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of The Requirements for the Degree of

DOCTOR OF PHILOSOPHY

Department: Professional Studies
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Iowa State University
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CHAPTER I. INTRODUCTION

Educational needs of secondary school students vary depending upon their background (15). Many children in large metropolitan cities come to school with serious educational handicaps. This phenomenon is especially true in communities that contain areas of substandard housing and a highly mobile population. Some 15 percent of today's youth have difficulty in the maturation process (65) and approximately one-third drop out of school before graduating (116). To combat educational limitations and low achievement of youngsters from depressed areas of the community, school districts have attempted to develop compensatory programs which would correct for a student's limited background, low motivation for success and a general lack of readiness to learn.

The main purpose of compensatory education has been to provide additional experiences to help deprived students become more successful in school. Gordon provided a more comprehensive description of compensatory education when he wrote (55, p. 339):

Compensatory education is a term which has come into use since 1960 to refer to those pedagogical efforts directed at overcoming or circumventing assumed deficiencies in the background, functioning and current experiences of children from economically deprived, culturally isolated and/or ethnically segregated families.
A wide variety of compensatory programs have been implemented since local school districts started receiving a larger share of federal funds. Certain programs have emphasized remedial reading while others have stressed language development, enrichment experiences, parental involvement, human relations development, work-study and many forms of vocational training (55).

The proliferation of compensatory programs reflects the belief held by the late President Johnson, Congress and the general public that schools have the capability of solving the social and economic problems of this country. This belief was in turn supported by massive educational legislation passed from 1963 to 1972 during Johnson's administration, i.e., Economic Opportunity Act of 1964, Higher Education Act of 1965, Elementary Secondary Education Act of 1965, Educational Professional Development Act of 1967 and the new Vocational Educational amendments of 1968.

The Research and Policy Committee of the Committee for Economic Development (CED) declared their support for compensatory education as late as July, 1968 when they stated (73, p. 23):

To make real headway in the attempt to provide adequate schooling for the disadvantaged, the nation must be willing to invest heavily in compensatory education that will help to make up for barren preschool years. An extra measure
of teacher talent, time and energy will be re-
required to teach effectively those who often
lack the motivation for schooling for the en-
vironment essential to success in school.

Although there are many proponents of compensatory
education, such as the CED, others have questioned the suc-
cess of such programs to help disadvantaged youth (9).
Goldberg (53) reported that evaluations of special pro-
grams conducted prior to 1971 were neither negative or
highly encouraging. The Department of Health, Education
and Welfare (89) was more specific in their assessment
however. Federal officials concluded that compensatory
education had not been effective in significantly improving
the educational achievement of disadvantaged children after
conducting four large-scale evaluations for the school

Concern regarding the effectiveness of compensatory
education was generated in part by the Equality of Educa-
tional Opportunity Study commissioned by the Civil Rights
Act of 1964. Results of that study were published in 1966
under the title of the Coleman Report (27). Data collected
for this study have been examined by persons (6, 134, 62)
other than Coleman. The most recent reassessment was con-
ducted by Jencks et al. (75) who used additional data from
Project Talent, the United States Bureau of Census and
smaller studies to examine the effectiveness of schools to
reduce socio-economic inequality. The following three general conclusions were reached by that reassessment (9, p. 37):

1. Poverty is a condition of relative rather than absolute deprivation. People feel poor and are poor if they have a lot less money than their neighbors. This is true regardless of their absolute income. It follows that we cannot eliminate poverty unless we prevent people from falling too far below the national average. The problem is economic inequality rather than low incomes.

2. The reforms of the 1960's were misdirected because they focused only on equalizing opportunity to "succeed" (or "fail) rather than on reducing the economic and social distances between those who succeeded and those who failed. The evidence we have reviewed suggests that equalizing opportunity will not do very much to equalize results, and hence that it will not do much to reduce poverty.

3. Even if we are interested solely in equalizing opportunities for economic success, making schools more equal will not help very much. Differences between schools have very little effect on what happens to students after they graduate.

It was not the intent of this investigation to support or refute the effectiveness of compensatory education, debate the issue of whether schools or other institutions can best bring about desired social changes, or whether this country should attempt to reduce economic differences rather than try to equalize opportunities for the disadvantaged. It was the purpose of this study to determine the effectiveness of a program designed to compensate for limited
backgrounds and experiences for which Jencks et al. (75) believe the school has very little influence over.

The compensatory program investigated in this study was initiated in 1968 before the controversy concerning compensatory programs gained momentum. The program in question was concerned with providing work experience beginning at age 14, a different organizational teaching structure and additional guidance and counseling services. The program is quite similar to that described by Passow when he wrote (107, p. 342):

Special modifications have been made for potential school leavers. Among these, work-study programs, in which youth are placed and supervised in part-time jobs, are widely used. The employment experiences are then dovetailed with work-oriented English, social studies, mathematics, and guidance experiences. The work-study approach is seen by some school systems as "an alternative pathway to adulthood" beginning with youth ages 13 to 14.

Statement of the Problem

This investigation was conducted for the purpose of determining the effectiveness of a compensatory program found in two junior high schools in Des Moines, Iowa. The program was designed primarily to provide selected secondary students with work experience, flexible scheduling during a two-period block-of-time, team teaching and additional guidance and counseling services not available to
other junior high students of the school district. More specifically, the study was to determine if enrollment in the experimental program contributed significantly to a student's: (1) attendance, (2) punctuality, (3) grade point average, (4) teacher rating, (5) achievement, (6) personal and social adjustment, (7) self-concept, (8) study habits and attitudes, and (9) continued enrollment in school.

Hypotheses

Hypotheses tested in this study were:

1. There is no significant difference between the attendance of students in the experimental group and control group.

2. There is no significant difference between the punctuality of students in the experimental group and control group.

3. There is no significant difference between the grade point average of students in the experimental group and control group.

4. There is no significant difference between the teacher ratings of students in the experimental group and control group.

5. There is no significant difference between the academic achievement of students in the experimental group and control group.

6. There is no significant difference between the personal and social adjustment of students in the experimental group and control group.

7. There is no significant difference between the self-concept of students in the experimental group and control group.
8. There is no significant difference between the study habits and attitudes of students in the experimental group and control group.

9. There is no significant difference between the drop-out rates of students in the experimental group and control group.

Definition of Terms

Operational definitions were specifically developed for selected terms used in this investigation. Terms used extensively in this study that require clarification are defined as follows:

**Work Experience** is a practice employed by school districts to provide under achieving students who have become disinterested in school with the opportunity to receive special reading instruction, additional counseling, large-block instruction and an opportunity to work part-time during the school day. Employment, to which individuals are assigned by the school, need not be related to occupational goals of the student (34). Persons participating in work-study programs are regarded as students at work not workers at school, and their first responsibility is to learning rather than earning a wage (111). The program provides a student with responsibility of holding employment, opportunity to earn money so they can remain in school and the chance to see the need of staying in school to acquire skills necessary for success later in life.
Target Area School is an educational facility located in a neighborhood that contains a high concentration of minority children with learning deficiencies who come from low income families. Schools in this category have sufficient quantities of educationally deprived children to warrant the expenditure of federal funds on compensatory programs.

Educationally Deprived or Disadvantaged Children are youngsters who come to school from low income families. The United States Congress has by law defined these children to be (44, p. 116):

Children who have need for special educational assistance in order that their level of educational attainment may be raised to that appropriate for children of their age. The term includes children who are handicapped or whose needs for such special educational assistance results from poverty, neglect delinquency, or cultural or linguistic isolation from the community at large.

Potential Drop-Outs are students who are likely to leave school before graduating from high school. This is a student who is usually achieving below grade level, has little motivation to remain in school, views education as unnecessary, has a low self-concept and has an undesirable attitude toward school.

Work Experience Advisor is a person who coordinates the instructional program, supervises work experience and provides additional guidance and counseling for approximately
50 youths in a compensatory program in Des Moines, Iowa.

Delimitations

The scope of this study was confined to 48 selected students in each of four target-area junior high schools in Des Moines, Iowa. Two junior high schools provided the treatment and two served as control schools. The study was limited to a period of four academic years, 1968-69 when students were attending seventh grade and 1971-72 when the same students were completing tenth. Participation in the study was restricted to those students who, in the judgment of teachers and counselors, were reading two more years below their assigned grade placement and had not responded to the traditional elementary program found in Des Moines, Iowa. In addition, participating students were identified as potential drop-outs because of their low achievement and motivation. Variables on which the experimental and control group were compared were confined to grade point average, academic achievement, reading skills, attitude toward school, teacher rating, personal and social adjustment, self-concept, attendance, punctuality and drop-out rates.

Students originally selected for participation in the program were excluded from the study if they were asked to leave the program as a result of disciplinary action, dropped the program due to disinterest, were unable to
continue because their parents moved to another attendance area, they enrolled in another program that was available to them or they dropped out of school entirely.

Sources of Data

Data for this study were obtained from two sources, standardized tests and cumulative records of students. Standardized measures used in this study were: (1) Metropolitan Achievement Test, (2) California Test of Personality, (3) Science Research Associates Reading Record, (4) Tennessee Self-Concept Scale, and (5) Survey of Study Habits and Attitudes. These measurements, with the exception of the Tennessee Self-Concept Scale and the Survey of Study Habits and Attitudes, were collected in September, 1968 when students involved in the study were beginning seventh grade, again in May, 1970, when the same students were completing eighth grade and finally in May, 1972 at the end of the tenth grade. Results of the Tennessee Self-Concept Scale and Survey of Study Habits and Attitudes were collected only in May, 1970 and May, 1972. Data gathered from cumulative records included absences, times tardy, grade point average and teacher rating. These observations were obtained at the end of seventh, eighth and tenth grade. In addition to the data mentioned, the Lorge-Thorndike
Intelligence Test administered in sixth grade as a part of the district's city-wide testing program was also used in the analysis of this study.
CHAPTER II. REVIEW OF RELATED LITERATURE

Work-study programs are not a new educational phenomenon but have become increasingly common in senior high schools since the depression days of the 1930's (64, 113). Phi Delta Kappa (125) conducted a survey of its members in 1961 and found over 1,500 work-study programs in operation. Later in 1966, Schill (122) surveyed the 50 states and identified a total of 2,704 work-study programs serving potential drop-outs under the provisions of the Vocational Education Act of 1963.

Although the origin of work-study programs can be traced to an earlier period, the use of these programs to serve a once-neglected segment of the school population, commonly referred to as the disadvantaged, is relatively new. The sudden proliferation of work-study programs after 1960 can be attributed largely to the threat of poorly prepared youth to a highly industrial country, an increased acceptance that everyone has a right to an education which will prepare them for employment, the passage of the Vocational Education Act of 1963 and a new interest in providing more effective programs for culturally deprived children (86). When funds were appropriated in 1964 under the Vocational Education Act, it initiated a new era in education (90).
Research (56) reported in 1966 indicated that one urban child in three was disadvantaged. It was further estimated that by 1971 half of all metropolitan children could be labeled culturally deprived. If this research is valid and if children from under privileged homes have skills and competencies different than those from more affluent homes, as reported by Miller (98) and Clift (26) one of the highest priorities of the public schools should be to find an effective means of educating metropolitan children who are culturally deprived (39). Work-study programs, designed to provide potential drop-outs with a flexible curriculum and work experience, are becoming increasingly popular with secondary schools as a means of holding potential drop-outs. Passow wrote of this new interest in work-study programs to retain alienated youth when he reported (107, p. 348):

> Work-study programs, by giving equal importance to academic achievement and work skills, increasingly are viewed as the means for secondary schools to hold youngsters with meaningful, gainful experiences.

Concern has been expressed that students participating in work-study programs get half an education. Others believe that work-study takes the option of college away, and some feel it is only a bribe (57). The fact that school officials are critical of work-study (47, 60, 95) is understandable. It is the belief of this writer that work-study is not the answer for all students. However, it does
provide a viable alternative for retaining some students in school to continue their education even though they may not see the importance of such pursuit at the time.

Another approach to helping potential and actual drop-outs was taken by California. When that state legislature passed a compulsory attendance law requiring all youth to attend school through age 18, public schools were mandated to provide opportunity schools for 14 through 16 year olds and continuation high schools for youth 17 through 18 years of age who did not or would not attend the regular secondary schools of that state. The opportunity and continuation schools provided youth with an alternative to attending an institution of learning full or part-time until they graduated or reached the age of 18. Work-study and other innovative practices were often incorporated into these programs in an effort to provide a more relevant education for students who had dropped or were going to drop out of school for reasons of truancy, delinquency or lack of academic progress.

Much has been written about work-study programs in recent years. Yet, an examination of the literature reveals considerable confusion as to the meaning and value of these secondary school programs. In an effort to clarify certain misconceptions and to provide a basis for more thorough understanding of work-study programs, this chapter
will review related drop-out literature; report the meaning, objectives, value and type of work-study programs; identify prerequisites necessary for successful programs; establish when work-study experience should begin; and discuss related research which supports or refutes the effectiveness of work-study programs in general. Team teaching literature will also be examined as it was one of two components added to the compensatory program under investigation.

Drop-Outs

Statistics compiled and reported in the fall of 1968 indicate the holding power of secondary schools may be increasing as revealed by the United States Department of Health, Education and Welfare (43, p. 4):

The increasing retention rate of public high schools is indicated by the improvement taking place during the most recent 5-year period.

Most drop-out studies estimate, however, that approximately one out of every three youth will drop out of school before graduation (116, 140). The fact that many youth and adults lack a high school diploma was well established when the United States Department of Commerce, Bureau of the Census, reported that 46.5 percent of all males and 45.5 percent of all females 25 years of age and over in March of 1969 had not graduated from high school (85).
How important is it that a student completes high school and what is gained by graduating? Will a student with a diploma earn more money, have greater job security and be more likely to find employment? The literature strongly suggests that earnings are dependent upon education, but research has been conducted which is contradictory to this belief. It is the belief of this writer that a cause and effect relationship does not exist between earning power and high school graduation. The distinct possibility that intelligence, motivation and a person's determination are the influencing factors that keep a student in school and allows one to earn more money rather than the number of high school credits is most plausible. The underlying assumption of this compensatory program, however, was that saleable skills are important and can best be acquired in school under the direction of teachers.

In the past, an unsuccessful student who lacked the motivation to achieve in school could acquire status in our society by dropping out of school and going to work. For all practical purposes, this is no longer possible due to automation, laws restricting employment of minors and more persons seeking employment (19). Venn (144) found that approximately 30 percent of all drop-outs can expect to be unemployed at any given time. Bienstock (14) concurred when he reported that the unemployment rate for drop-outs
currently is about four times higher than those with college training and two times higher than high school graduates. The drop-out must come to realize that as the need for skills and competencies increases, the demand for untrained workers declines. The unprepared drop-out will have considerable difficulty finding employment in today's labor force and must come to understand that education is a necessity for survival rather than a luxury as it once was considered (92).

Benefits of a high school education and diploma can be shown rather dramatically as reported by the Department of Labor (73, p. 22):

In 1963,...youths who had completed high school were earning on an average of $61.09 a week, while dropouts were averaging $50.84. In 1965, the graduates had advanced to $98.54 a week, a raise of $37.45, while the drop-outs averaged $61.89, a raise of only $11.84.

The lack of a high school diploma not only limits persons financially, but places a burden on society through reduced national revenue as well as increased costs of crime and welfare. Using information developed by the United States Department of Commerce and other sources, Levin (85) estimated that the failure of all males 25-34 years of age in 1969 to complete high school cost the wage earner $237 billion in lifetime income. In addition, it cost the Nation an additional $71 billion in government revenue, $3 billion
in welfare expenditures each year and $3 billion a year in additional crime costs.

Jersild (76) wrote that the person who has a diploma is more likely to be employed than those who do not. Rogers (116) emphasized the importance of graduation when he stated that completing high school does not assure success or the guarantee of employment. It does mean, however, that those who graduate will be more likely to find employment and success than those who leave school early. Tannenbaum summarized the value of graduation when he stated (137, pp. 1-2):

A high school diploma can be valuable in two ways. It can symbolize achievement in academic or vocational studies and it can have credential value in a society that places a high premium on school attendance regardless of how much is accomplished there.... We are fast approaching the time when a child from an underprivileged environment will be doomed to a life of economic dependency and status depression unless he can master even more academic skills than are necessary to earn the high school diploma.

Gallington found in a follow-up study of graduates and drop-outs in Alexander County, Illinois during 1963, 1964, and 1965 that those who graduate have certain advantages over students who drop out of school. He contended that (49, p. 21):

1. A high school diploma opens many doors of opportunity to those students who graduated.

2. One's opportunities for advancing in education are enhanced by a high school diploma.
Without the high school diploma the opportunities for educational advancement are almost negligible.

3. Dropouts' futures are very uncertain.

4. Generally, the immediate job opportunity for a dropout is common labor, and then only if such work is available.

5. Graduates can find work almost immediately upon graduation; dropouts require several months to find work and then it is not of a lasting nature.

Potential drop-outs are often considered to be academically and socio-economically handicapped (80), culturally deprived (39), disadvantaged (56) and/or alienated (107). These references present a portion of the terms used to describe conditions from which drop-outs come or individuals most likely to drop out of school.

The New York State Department Bureau of Guidance conducted a Holding Power Project (100) in 89 secondary schools in that state. The Project developed a variety of forms and procedures for collecting drop-out data, but more importantly the study found that (100, p. 18):

Potential school dropouts can be systematically identified well in advance of their departure...the attitude of parents significantly affects the decision of students to leave school early....

A comprehensive drop-out study was implemented in Quincy, Illinois. Data gathered over a period of eight years revealed that a student who dropped out of school was generally one who (72, p. 10):
1. Rejects school, himself, competitive situations, feels frustrated and insecure.

2. Develops into a poor reader, and is, therefore, unsuccessful academically.

3. Is usually withdrawn or aggressive, or both, takes little or no part in the extracurricular activities of the school.

4. Does not relate school with a future vocation and is not interested in anything in school.

5. Comes frequently from a home with low socioeconomic status where parents are indifferent to the importance of education.

6. Is usually not affiliated with any church.

The Vocational and Technical Education Division of the United States Office of Education studied environments of potential drop-outs and found that children who are considered to be educationally handicapped and early school leavers typically come from homes or neighborhoods which exhibits a preponderance of the following conditions (80, p. 25):

- Low income
- Poor educational background and preparation
- Poor health and nutrition
- Family heads are semi-skilled or unskilled
- Excessive unemployment
- Belonging to ethnic groups which have been discriminated against or have difficulty in assimilating into the majority culture
- Isolated from cultural, educational and/or employment opportunities
- Having emotional and psychological problems which are not serious enough to require constant attention or institutionalization
Lack of motivation for obtaining an education or acquiring a job skill...due to a combination of environmental and other factors
Dependency on social services to meet their basic needs
Lack of political power or community cohesiveness to articulate and effectuate their needs

Deutsch (30) speculated that children who come from impoverished environments are unprepared socially or academically to meet the demands of learning or behavioral requirements of the classroom. The inability of the socially deprived child to cope with expectations of the school results in failure, drop out and poor adjustment. Historically, public schools have not offered educational programs or provided learning environments which considers the limited background and special needs of the disadvantaged. Basic assumptions on which curriculum has been developed and program content selected has generally been more appropriate for the middle-class students than the disadvantaged (26).

The school's inability to provide meaningful educational experiences has contributed heavily to the drop-out problems in rural and metropolitan areas. According to Riendeau (114), most students drop out of school due to: (1) poor social relationships, (2) insufficient interest, (3) inadequate curriculum and (4) little participation in school related activities. The Educational Policies Commission (36) differed in their findings when they reported the need for money, mobility of family and inability of students to
succeed academically as being the most significant factors causing students to drop out of school. The Commission supported Riendeau, however, in his contention that students leave school because they see little relationship between a successful school experience and success in later life.

Many authorities are of the opinion that schools should attempt to classify students suspected of leaving school early so that appropriate programs can be offered. Hoch (68) reported that some students are more oriented toward dropping out of school than others and would profit from an intensive evening school program accompanied by additional counseling services. Other students, considered to be more work oriented, would benefit from a specialized program involving skill instruction and attitude development. Rovello (117) divided drop-outs on a different basis. He contended that schools have a responsibility to provide programs for only those students who have the capability to learn and an interest in being helped. Students found to be disinterested in learning, emotionally disturbed or disadvantaged should not be a concern of the school other than to identify and refer to the proper agency. Such a position is remarkably insensitive and thankfully is not held by many educators.

There are a variety of ways to assist and encourage students to remain in school until they graduate or acquire skills to become wage earners (139). One promising method
of combating the drop-out problem has been the work-study program (35, 143). The tracking system, a means of organizing content according to levels of difficulty, has not been successful in curbing drop-outs or assisting the slow or reluctant learner to stay in school according to Bristow (18). Brain (17) concluded that potential drop-outs can best be helped through highly flexible programs rather than those with traditional class organization and study prerequisites. Many authors (68, 139, 17) believe that one of the most successful ways to deal effectively with potential drop-outs and to hold students in school is to offer programs that include some form of work, study and guidance.

Meaning of Work-Study Programs

Many terms have been used to describe activity used by public schools to provide work experiences as a part of the regular school curriculum. Hunt (71) identified cooperative education, diversified occupation, school work, work-study, work education, job-experience, education for work and work experience as terms which have been used in the last 50 years to describe programs which involved work and study. Draper discussed the confusion over the meaning of terms used to describe public school programs involving work when he stated (34, p. 60):
Because of its wide use, the term work experience education has lost some of its particular meaning...terms like cooperative education, cooperative training, cooperative industrial training, work education, work experience, and work-study have been used to identify these programs.

Eisen provided little help in clarifying the meaning of work experience education when he reported (41, p. 16):

A review of the pertinent literature revealed a lack of agreement on the part of educators and others as to exactly what work experience education is. There is an even further diversity of viewpoint regarding what it purports to do.

It is not the intent of this review to define all terms used to describe work related programs. As Huffman (70) pointed out there is considerable confusion between the meaning of cooperative education and two other programs known as work-study and work experience. For this reason, work-study, work experience, and cooperative education will be defined for the purpose of gaining a better understanding of what these programs purport to do. Career education will also be discussed as a new concept which attempts to combine academic and vocational efforts.

Work-study is defined in the Vocational Education Act of 1963 and 1968 as a student assistance program designed to provide financial aid through part-time employment to allow students to begin or continue a planned vocational educational program. Mason and Haines gave a more complete
definition of work-study programs when they reported (91, p. 52):

In work-study programs the purpose in general occupational education and the instruction in school is only generally related to the work of the training station. There is no effort to teach topics in the order that they are needed on the student's job. Individual learning needs stemming from the job are not usually a focus of instruction. In addition, the instruction in school is often given before the job experience rather than concurrently with it. Lastly, the occupational experience may be only generally related to the student's career goal rather than contributing directly to it.

Work experience differs from work-study in that there is a greater effort to help students to understand the world of work. Work experience covers many different teaching and learning situations in which work or work orientation is used by schools to motivate students and to apply what they learn to the real world of work. Huffman (70) wrote that the primary goal of work experience is the improvement of general education, however, Smith and Bryan defined work experience as follows (135, p. 404):

Work experience occurs in connection with a school curriculum or course of study. The student spends part of his time on an actual job in a regular business or industry and attends school part time.

Cooperative education programs are directed more toward occupational education. There is more correlation between training on the job and study in school and all activities are based on a career objective according to
Mason and Haines (91). Sanders describes cooperative education as (118, p. 75):

The cooperating business, industry or public agency provides actual on-the-job learning experience based upon an agreement between it and the school. The student receives instruction in theory and practice in a school situation and then is guided through a series of experiences in an actual job situation. A training agreement is commonly used to assure a close relationship exists between the in school phase of the program and the actual job placement and experiences.

Huffman (70) in a discussion of cooperative education identified seven different cooperative programs presently being offered: (1) business and office procedures, (2) distributive services, (3) home economics, (4) trade and industrial skills, (5) off-farm agriculture businesses, (6) interrelated programs and (7) special purpose programs.

A new educational concept, career education, has been proposed by the United States Office of Education in an attempt to combine vocational and academic pursuits (24). Although the idea of careers is not entirely new to American education, Gordon (54) found that the topic of career education was considered synonymous with vocational education in the Educational Index as recent as 1971.

There are a variety of definitions for career education, but all seem to have certain basic similarities. Herr (66) felt that the purpose of career education was to prepare all students with skills which would enable them to
make a living, be economically responsible and employable. Career education according to the United States Office of Education was defined as (37, p. 1):

A systematic way to acquaint students with the world of work in the elementary and junior high years and to prepare them in high school and college to enter and advance in a career field carefully chosen from among many. For adults it is a way to reenter formal education and upgrade their skills in their established career or to enter a new field.

The fundamental concept of career education is that the total educational program will direct all its efforts toward preparing each student for economic independence and developing an appreciation for the dignity of work. Federal officials (24) believe the goals of career education can best be achieved by providing career and self-awareness activities in the elementary school, career exploration opportunities at the junior high level, and indepth exploration experiences and skill training in high school and at the post high school level. How successful career education will be has yet to be determined.

In summary, one can conclude from a study of definitions for work-study, work experience and cooperative education that terms have become confused with one another primarily because each involves students in work and study. In practice, however, one can say that work-study programs require no relationship between what students do in school
and their job. Although work experience is directed more toward a general education by allowing the student to explore a variety of career opportunities, the term has been used interchangeably with work-study. For the purpose of this dissertation, work-study and work experience will be synonymous terms. Cooperative education in contrast is directed more toward students developing a competency in a particular occupation and is more career education oriented.

Objectives of Work-Study Programs

One of the primary functions of education should be to provide worthwhile experiences to equip individuals for work which will enable them to continually adapt to and accommodate change (133). Schools have attempted to meet this responsibility by offering a variety of educational programs to prepare students for the world of work. Some have been successful and met the needs of students while others have not (61).

Kaplan (78) conducted a review of the literature in 1967 and found that potential drop-outs are in critical need of educational programs that allow them to: (1) improve their social and saleable skills, (2) experience on-the-job training while earning wages, (3) work toward some vocational goal and (4) improve their basic education. To assist all students, but more specifically the potential
drop-out, educational institutions have used work experience to achieve one or more of the following goals according to Mason and Haines (91, pp. 46-47):

1. To keep over-age pupils (or under-achievers and potential drop-outs) in school part-time while they obtain needed general education.

2. To help pupils and college students to explore the world of work and to assist them in occupational choice-making.

3. To help maladjusted pupils with personality and behavior problems.

4. To help students earn money who otherwise would need to drop out.

5. To provide practice in what has been learned in the classroom and assist in the transition from school to job.

6. To develop general and specific occupational skills, knowledge, and attitudes.

Campion (23) believes the future holds many new and interesting developments in the area of work experience and recommends that school administrators become better acquainted with the possibilities, techniques and limitations of combining work and study to provide a total educational experience.

Mohs (99) found from an examination of work experience programs that educators have historically viewed cooperative education as the only legitimate form of work and study worthy of consideration. This belief is no longer held so firmly as it once was. On the contrary, schools have turned
to many forms of work experience to attract and hold potential dropouts. Kimbrell and Pilgeram (81) wrote that work experience education has made a significant contribution toward preparing youth for careers. Savitzky (120) stated that work experience programs are gaining recognition as effective programs that help students who find the traditional school too difficult.

Many (23, 45, 112, 148) purposes and objectives for work experience programs have been reported in the literature. The following list of objectives developed by Campion was one of the more comprehensive sets to be found in the literature (23, p. 5):

1. To improve school adjustment of pupils for whom the traditional curriculum is found to be inadequate.

2. To promote personal and social adjustment of many students and to establish emotional stability through a feeling of doing worthwhile activities.

3. To establish good attitudes toward work and develop good work habits.

4. To furnish experience and training in cooperation and understanding of what teamwork means on the job.

5. Through the development of self-reliance, to afford an added opportunity to gain maturity.

6. To make easier the transition from school to work for students planning to drop out of school in the near future.
7. To furnish opportunity for students with economic need to continue their school program for a longer period.

8. To explore the activities and the demands of the normal work world and furnish a basis for realistic vocational guidance.

9. To motivate school subject matter and give meaning to much which has heretofore meant little to certain high school pupils.

10. To gain an understanding of the American plan of free enterprise and a knowledge of basic economics.

11. To aid in the development of competence in personal financial management and encourage saving for future needs.

12. For some students there may be definite vocational value; at least the work experience will arouse vocational interests and stimulate the development of elementary skills.

Ivins' (74) list of work experience objectives which stresses the affective domain, suggests that work experience programs should promote: (1) good attitudes toward work, (2) good work habits, (3) feelings of self-respect, (4) cooperative attitudes, (5) vocational preparation, (6) desirable traits of character and (7) an introduction to the demands of the world of work.

Value of Work-Study Programs

Public concern and awareness about the drop-out problem has continued to grow in recent years and is one of the major problems facing urban education. This concern has moved from
merely discussing the matter to a more determined effort to reduce the number of students who drop out of school. It is generally agreed that the traditional curriculum and school environment has failed to provide potential drop-outs with a meaningful educational program and vocational education has largely eliminated the disadvantaged student through their selection process (10). Some schools have attempted to solve this problem and achieve its goal of holding students in school by providing potential drop-outs with work-study programs (121). This effort has resulted in a steady increase in the use of work-study programs even though there is insufficient evidence that supports the use of such programs to retain youth in school (48).

There are many views regarding the benefits of work-study programs and support for these programs varies. Some strongly advocate the use of programs involving work and study to prevent drop-outs, others qualify their support and a few believe there is little value in this kind of educational experience. The remainder of this section will report the views of certain authorities concerning the advantages and disadvantages associated with many of the work-study efforts being offered across the country.

A substantial number of authorities believe that work-study programs provide definite benefits to potential drop-outs. Savitzky (121) for example contended that effort to
rehabilitate potential drop-outs must include some form of work experience as part of the program and schools should not compromise this requirement. It provides students with an opportunity to experience real life situations such as applying for a position, holding a job and being promoted. Douglas (33) believes that the value of money and the relationship of buying and earning are learned when students earn money through part-time employment. He also suggested that working for wages fosters the development of self-confidence when students can pay their own way by purchasing school lunches, supplies, clothes and other items of personal interest. The Task Force on Urban Education (123) reported that work-study programs are beneficial because they provide students with an opportunity to continue school while preparing for an occupation, experience working conditions in a variety of jobs and become acquainted with employers in occupations they hope to enter in the future. Equally as important, schools are forced to keep their vocational education program realistic and relevant when students work in the community (123). Alexander and Saylor summarized the value of work experience as a program which provides for the (3, p. 539):

1. Development of desirable attitudes toward work: its importance and social significance.

2. Appreciation of such important traits as regularity, reliability, and cooperation.
3. Understanding of proper employer-employee relationships.

4. Development of good work habits and skills.

5. Acquisition of information about occupational opportunities and conditions.

6. Motivation of learning in school.

Some educators are less positive about the benefits derived from work-study programs. Freedman (47) was one who qualified his statement concerning the value of work-study when he wrote "it is felt" that work experience will have positive effects if it is sanctioned and supervised by the school. Lammers (84) was less supportive of work-study programs when he reported "there is a possibility" that attitudes of potential drop-outs will improve and they will return for additional education and training in the future. He also questioned the effectiveness of any kind of special educational program when he stated that no program can influence students to stay in school unless it helps to build confidence in themselves and a belief in the future.

One of the most comprehensive lists of benefits reported in the literature was developed by the California State Department of Education. The benefits as published in their work experience handbook are as follows (61, p. 3):

1. Learning to assume responsibility.

2. Gaining knowledge and attitudes necessary for successful job performance.
3. Acquiring good work habits.

4. Learning how to get along with fellow workers and employers.

5. Developing personality and poise.

6. Augmenting the financial resources of the students and assisting them to remain in school.

7. Developing an appreciation of the value of wages.

8. Developing an appreciation and understanding of the relationship between formal education and job success.

9. Exploring the fields in which they feel their vocational interests lie and determining whether or not these fields are suitable.

10. Broadening their understanding of the occupational world and working conditions in the world of work.

11. Giving students who must work a feeling that their jobs have added importance.

Many work-study experiences have proven to be valuable experiences for individual students. It has been found that successful programs, however, are more likely to be found in schools where they are least needed. What this essentially means is that most of the students in these schools have acquired a reasonable understanding of their vocational goals and they view the job as a bonus rather than a means of motivating them to remain in school until they graduate (60).

Although work-study programs are highly regarded by
many, they also have their critics (47, 60, 95, 145). Meade (95) contended that many schools have offered work-study programs because they did not know what to do with students identified as potential drop-outs, troublemakers or disad­vantaged. He exhibited his concern about work-study pro­grams as well as the regular school program when he wrote (95, p. 250):

In many cases the student is allowed to hold onto his job as long as he is "passing" his school work, or at least as long as his school attendance is steady. The tragic ele­ment is that all too often the job, however, menial, poor-paying or pedestrian, it is a thousand times more relevant and more real than the clutter of courses we offer as the general high school curriculum.

Freedman (47) was critical of work-study programs when he reported that combining work and study in secondary schools has largely been justified on the basis of improved work habits, general attitude and self-esteem rather than providing the necessary skill training to make the student employable. He described one weakness of work-study pro­grams when he stated that (47, p. 512):

Working outside the school may increase a young person's impatience with the rigid demands of the school setting. As demanding as work may be, it may still be possible to feel more free at work than at school. Many potential dropouts have only a tenuous relationship to the social life of the school. Going to work part of the day may further alienate a youngsters from his peers, and even enhance his desire to leave school.
Greene indicated that the greatest criticism has come from those who regard work-study as (57, p. 153):

Nothing more than a bribe. The students, they claim are given a 'watered down' program and then bribed to stay in school by a job that pays a salary. This point here is that the students who are given high school credit for working half a day are being deprived of the real benefits of the school and are not being taught subjects they should know.

Hamburger (60) reported that students who come from disadvantaged backgrounds benefit to some extent from working and identifying with employees that view their work as important and necessary. He questioned the educational value of work-study programs, however, when he concluded (60, p. 5):

The number of adolescents engaged in supervised work experience or work-study programs that presumably have built-in 'meaning' is quite small. Although it is claimed that meaningful work experience for students increases the holding power of the school, builds character, develops desirable habits and attitudes, and provides vocational orientation, research evidence on the efficiency of work experience as educational or therapeutic is lacking.

Meade (95) contended that the only desirable form of work and study are those programs commonly referred to as cooperative education in which work and study complement each other. In these programs students engage in work which is related to study in the classroom but more importantly the program provides a general education which leads to a career or occupation rather than a part-time
job.

No review of literature concerning work-study and compensatory education would be complete without reference to the work of Jencks et al. (75) who concluded that school reform was unlikely to bring about significant social changes outside the schools. Stated differently, there is little evidence that equalizing educational opportunity would make adults more equal. In summary, their study suggested that (75, p. 255):

Educational compensation is usually of marginal value to the recipient. Neither the overall level of educational resources nor any specific, easily identifiable school policy has much effect on the test scores or educational attainment of students who start out at a disadvantage. Thus even if we reorganized the schools so that their primary concern was for the student who most needed help, there is no reason to suppose that adults would end up appreciably more equal as a result.

Jencks et al. (75) contended that educational reform for the sake of helping the disadvantaged has been largely unsuccessful because: (1) children seem to be affected more dramatically by what happens in the home, in the neighborhood and on television than what happens in school; (2) changing the educational program seldom changes how teachers and children treat each other; and (3) even if schools are successful in influencing the achievement of children, improvements are often lost before they reach adulthood.

In short, adult success depends on many factors other
than family background, schooling and cognitive skills measured by standardized tests. Bane and Jencks (9) indicated that although they did not learn from their study what factors were influential in effecting change, there was substantial evidence that compensatory education has not been a viable method of bringing about desired social and economical changes.

Types of Work-Study Programs

There are many types of programs involving work and study operating in secondary schools today. The differences are due in part to different needs of students (147). Schools have responded to the needs and interests of students by offering work-study experience for retarded children (4, 48, 63, 129), college students (12, 96, 79), regular high school pupils (69, 71), potential drop-outs (5, 97, 102), seriously maladjusted youngsters (2), junior high students (31, 42) and others (104).

The fact that many school districts refer to work experience as any kind of activity where a service is rendered or goods are produced has caused confusion and misunderstanding about the purpose and value of work experience programs. In an effort to clarify certain misconceptions about work study experiences, this review will report what appears to be accepted classifications which describe the different
Hunt (71) developed a classification which included six types of work experience programs. His list was published in an Office of Education Bulletin in 1957 and was generally thought to be representative of work experience programs prior to the Vocational Education Act of 1963 and 1968 and the rapid expansion of work-study programs. It is of value to this review because of its specificity in identifying work experience programs. He divided work experience as follows (71, p. 16):

1. In-school, Nonremunerative General Education Work Experience

2. Out-of-School, Nonremunerative General Education Work Experience

3. Remunerative General Education Work Experience Programs for Pupils in Junior High Schools (Grades 7, 8, and 9)

4. Remunerative General Education Work Experience Programs for Pupils in High Schools (Grades 9 to 12 or 10 to 12)

5. Remunerative Vocational Work Experience Programs in High Schools Not Subsidized from Federal Vocational Education Funds
   (a) Business education
   (b) Diversified occupations

6. Remunerative Vocational Work Experience Programs in High Schools Subsidized from Federal Vocational Education Funds
   (a) Trade and industrial education
   (b) Distributive occupations
Manson and Haines (91) indicated that the world of work provides a natural setting for many programs sponsored by the public schools. They summarized the hundreds of school work programs into five basic types which offer experience in some form of work situation (91, p. 48):

1. Programs for general education purposes
   A. Work observation programs
   B. General work experience programs

2. Programs for occupational educational purposes
   A. Work-study programs
   B. Internships
   C. Cooperative education programs

The California State Department of Education published a handbook on work experience education for school administrators to use when designing and operating programs. This handbook divided work experience education into exploratory, general and vocational programs as follows (61, pp. 5-6):

Exploratory work experience education is essentially a guidance program. In a program of this type students spend specified hours of school time at a variety of jobs—either within the school or at business, professional, or industrial—for the purpose of ascertaining their suitability for the occupation. During this time they are given opportunities to observe and to participate in a variety of activities. It is not intended that students do productive work. Students receive school credit but no pay.

General work experience education give teenage boys and girls maturing experiences
through supervised part-time employment that will help them to become productive, responsible individuals. This part-time work need not be related to the occupational goals of the students. Pay may or may not be received for jobs performed within the school. Students receive school credit for general work experience education.

In vocational work experience education programs, the employment of students is specifically within the occupations for which their courses in school are preparing them, the employment thus serving the function of a practical laboratory for reinforcing the in-school occupational education. Students in vocational work experience education receive both pay and school credit for their work.

Although a variety of divisions exist for work-study experiences offered in secondary schools, most of the programs according to Draper which are directed toward the imminent and potential drop-out can generally be described in the following manner (34, pp. 66-67):

1. The length of the training period and the amount of daily time on the job and in school can vary according to the tolerances of the individuals.

2. Individuals and jobs are carefully matched so that success is possible with reasonable effort.

3. Opportunities for identification and status are available.

4. Gainful employment is emphasized as a sign of maturity.

5. Adult leaders and supervisors are selected to offer models for youth to follow.
6. Counseling service is adequate to enable immediate help to solve personal, in-school, and on-the-job problems.

7. School instructional service is modified according to the immediate needs of the students.

8. Work alternatives and opportunities for re-entry to school and further vocational training are made known.

Prerequisites for Work Experience

Schreiber (126) contended that work-study programs are not the only or necessarily the best means of keeping potential drop-outs in school. They quite often provide schools with an incentive program for students but fail to attack the basic problems of many potential drop-outs or adequately train them for employment later in life. Even though work-study experiences are highly regarded by many, they are not a panacea for solving all educational problems of the potential or actual drop-out. If programs involving work and study are to be successful, they must be considered as part of the total school curriculum and philosophy. Schools that claim to have successful programs have probably written them into the regular educational program as well as complying with many of the following prerequisites (106, p. 16):

1. The school administration and the total faculty understand the objectives of the
work experience program and are supporters of the program.

2. The school curriculum is flexible so students in the work experience program can participate fully in all of the school's activities.

3. Parents thoroughly understand the purposes of the program for their children.

4. The teacher-coordinator makes careful plans with cooperating companies so that there is thorough understanding of the undertaking.

5. The businesses providing work opportunities are carefully selected as places where students will get constructive types of experience.

6. Students are provided with a thorough orientation to work in the modern business community.

7. Careful attention is given to the development of self-evaluation on the part of the student workers.

8. The teacher-coordinator is allowed sufficient time to visit students, to talk with them in personal conferences, and to talk with their work supervisors.

Work-study experiences need to be more than a reduced academic load and a part-time job. Programs must be well planned but equally as important they must have: (1) support from the school administration, (2) cooperation from the staff and (3) community acceptance. Any successful work-experience program must also have a conscientious leader who can relate to problems of students, concerns of parents, problems of employers and interests of teachers. Without this kind of support, Eisen (40) believes work-study
When Work-Study Programs and Other Drop-Out Prevention Efforts Should Begin

Tuel (142) reported that once a student decides to leave school little can be done to alter that decision. It seems logical to conclude that school districts interested in initiation programs to prevent drop-outs should do so before a student makes the decision to leave, but is evidence available to support early efforts?

Surveys conducted in Nashville, Tennessee (7), Minneapolis, Minnesota and Harlem, New York (128) showed that many students from deprived areas appear to be on their way to dropping out of school by the time they reach junior high school. These studies indicated that many students have already come in contact with law enforcement agencies, met with little academic success in school and are merely waiting until they reach an age when they can legally leave school. Based on these limited results, the decision to drop out of school appears to come early for many.

Havighurst and Stiles (65) supported early drop-out prevention efforts because many disadvantaged students are beyond help if assistance comes to late while others have already left school before special drop-out programs are made available to them. Although many will agree that experiences are likely to be unsuccessful and ineffective.
attempts to reduce the achievement gap must come early to be successful, such efforts will have little success in holding youth in school unless parents and educators change their attitudes about the drop-out and programs to keep him in school according to Schreiber (127).

Several authorities (17, 35, 107, 144) have suggested the use of work-study experiences to retain potential drop-outs in school. Levine (86) and Schreiber (128) hypothesized, however, that if work-study programs are to be successful in holding students in school, they must be offered as early as seventh or eighth grade rather than waiting until senior high school when such programs are traditionally offered.

It would appear that three conclusions can be drawn from this review of related literature. First, certain efforts to retain potential drop-outs in school will have more success when offered early in grade school. Secondly, work-study experiences will be more effective in curbing the drop-out problem when started in junior high and continued throughout senior high school. Finally, few programs will have success unless parents and educators change their attitudes about drop-outs and what should be done to help them remain in school.
Related Work-Study Research

A review of the literature reveals that much has been written about work-study and work experience programs, but little has been done to determine the success of such efforts. Smith and Bryan conducted a review of work experience programs between 1950 and 1956 and concluded (135, p. 404):

Much of the literature written concerning work experience was of a descriptive nature. There was also much written concerning the pros and cons of work experience, but little of the material was backed up with facts obtained thru actual studies.

Although there is evidence that a greater effort has been made to evaluate the effectiveness of work experience programs in recent years, this new interest can be attributed largely to governmental funding and legislative mandate. This portion of Chapter II will be devoted to reporting selected work experience and potential drop-out prevention studies published since 1962.

An examination of work experience literature shows there has been a proliferation of material appearing in professional journals and trade magazines in recent years. Much of the material, such as that by Devin (31), Savitzky (119), Slotkin (132) and others (11, 58, 108) was of little value in assessing the success of work experience because they described rather than evaluated programs. Sheloy identified
the same problem in 1967 when he reported (131, p. 50):

In reports of various programs to help alleviate the dropout problem, in most cases, adequate descriptions of the program as to how it was started, who can participate, and what was offered were readily available. Evaluations of any validity, although available in some cases, were not obtainable in most cases.

The matter of too little research will be discussed in more detail later in the chapter.

The question of how related work-study research should be organized and presented posed a problem. Should all work-study programs be considered as the same treatment? Yaegel (147) said no two work-study programs are alike yet most have the same two basic characteristics of a half-day of work and a half-day of study (57). Programs are usually strengthened and individualized by adding such elements as remedial instruction, guidance and placement (52). Some programs even incorporated a lower-pupil-teacher-ratio (88) or flexible scheduling (54) in an effort to strengthen the treatment.

The work-study program under question in this investigation had four components: study, work, team teaching and additional guidance. The issue of how to present the review of literature was resolved by presenting information relative to work-study according to the research design used in the study rather than classifying studies according to elements added to strengthen the work-study program. There is
one exception as the concept of team teaching has been singled out and briefly discussed. Additional guidance was not presented separately since most work-study programs incorporated more guidance as an integral part of the program. The remainder of this section will be devoted to a discussion of work-study research without control groups, with control groups, with control groups and test of significance and finally an examination of team teaching effectiveness.

Although no attempt will be made to evaluate the research reported in this chapter, a description of what others feel the quality and quantity of research has been in the past ten years has been included.

A number of work experience and drop-out related studies found in the literature did not have control groups. Studies of this kind were reported by Congemi (28), Donovan (32), Joseph (77), Littlefield (87), McCarthy (93), Roberts (115) and Schrader (124). Each study will be reported separately.

A World of Work project was implemented in Syracuse, New York to demonstrate that potential drop-outs will respond favorably if treated with respect and a concern is expressed for their future. The total number of students served was quite small. Of the 28 students who participated in camping, work experience, counseling and tutoring programs; four dropped out of school while five failed to make a
satisfactory progress. From the evidence presented by Congemi (28) it is doubtful that the project was considered a success.

Donovan (32) found from surveying terminal students and others who enrolled in a work-study program in New York that a large majority of the work-study participants responded positively when sampled. Of the 132 students returning the questionnaire, 82 percent felt the work-study program had helped them to decide on a career, 98 percent indicated the program had accomplished all it could for them, over 50 percent had worked for the same employer since leaving school and 94 percent were actively employed at the time of the study. The program was judged a success by students as well as school officials who hoped to expand the program to serve additional students the following year.

A Work Opportunity Center in Minneapolis, Minnesota opened its doors in 1967 to serve youth who had left school. Over a period of two years, 91 drop-outs returned to school, 52 graduated and 742 were employed. Was the Center a success? Joseph contended it was when he stated (77, pp. 14-16):

Lost in these statistics is 'the' success story. A school dropout headed for a dead-end job, if any job at all, has been able to succeed where before he had failed. He now sees
himself as a contributing agent in a society once perceived as hostile and hopeless.

A project involving 250 youth over a period of 27 months in simulated work experience and personal adjustment counseling was considered successful by Littlefield (87). The project was effective in maintaining a relatively low rate of absence, there were only a few adverse incidents, youth in the program were easier to place on jobs than those not in the program and a follow-up showed that most of the participates were employed within three months after leaving the program.

The Research and Development Department of the Detroit Public Schools (93) evaluated the effectiveness of a Job Upgrading Project in improving the employability of school drop-outs. Data were collected on 1644 male and female drop-outs from September 1, 1967 to August 31, 1968. Analysis of the records showed that: (1) 319 youth returned to the regular school program, (2) 334 students entered full-time employment, (3) 448 youth earned credits in 815 classes and (4) 818 students completed a paid work-study experience. The evaluation concluded that the program was achieving its stated purpose and should be continued.

The Urban Youth Program for out-of-school and out-of-work youth had four components that served 5,921 drop-outs in Chicago from 1961 to 1969. The Double C component provided counseling and vocational guidance. Another part of
the program known as the Double E provided education and employment. A third section, the Double T, offered guidance and training. The final component was the Multi-Occupation portion which provided training and subsistence. Whether the program can be termed successful is questionable as revealed by an evaluation conducted in 1969 (115, pp. 29-30):

For those who have completed training, the Urban Youth Program has been effective in getting them successfully placed on jobs, referred to other suitable training programs, or returned to full-time school.

Although the program provides intensive counseling and makes many curricular and procedural adaptations to meet the needs of students, a sizable proportion leave before completion of training.

The public school system in Hobbs, New Mexico has had a work experience program involving junior high students since 1956. The program was designed to provide youth with saleable skills, help students relate to society, instill the desire to be self-supporting, develop character and guide students back to the regular school. There was insufficient evidence in this report to show the Vocational Core Program was meeting its objectives. Schrader (124) stated that it was impossible to show that the program resulted in additional wages for students, improved citizenship or improved self value of students. He contended, however, that the program was successful in that students were better groomed
and many had graduated from high school. The evaluation was far too subjective to be of value in determining effectiveness of work experience to assist youth.

It is difficult to determine the effectiveness of dropout programs when results are limited to a listing of project facts. (i.e., 319 youth returned to the regular school program, 52 graduated, over 50 percent had worked for the same employer since leaving school, etc.) Many of the studies examined this far have been limited to this kind of analysis. The reader is left to draw his own conclusions based on his experience and background since there is no way to make an intelligent comparison. High et al. (67) conducted a similar evaluation in that they were unable to identify a control group to evaluate a drop-out program. They summarized their concern for this kind of assessment when they stated (67, p. 59):

> Without an appropriate control group, this evaluation is more descriptive than experimental and the evaluation raises as many questions as it answers.

Many studies did use control groups. Work by Bienenstok and Sayres (13), De Pianta (29), Hamburger (59) and Yunker (149) are examples of this kind of research. This portion of Chapter II will consider studies using control groups. The discussion will conclude by presenting a study by Ahlstrom and Havighurst (2), Mowrer (101) and Longstreth
et al. (88) which represents a few of the more thoroughly researched work experience programs in the United States that used a control group.

Projects that achieved similar results were the School to Employment Program that served potential drop-outs in New York City and a work experience program in Windsor, Connecticut. Bienenstok and Sayres (13) found that 54 percent of the STEP youth in 1961-62 achieved success in school as compared to only 28 percent of the control group. A follow-up study in 1963 revealed that 66 percent of the students in the experimental group were in school or had full-time employment, whereas, only 49 percent of the control group had achieved this goal. Data also showed that over a two-year period most schools reported improved attendance, fewer disciplinary problems and higher grades for STEP students. De Pianta (29) found that a work experience program in Windsor was instrumental in improving grade averages five- to six-tenths of a point from the junior to senior year as well as effort, conduct and attendance of students.

The Municipal Cooperative Educational Work Program was designed to motivate potential drop-outs to remain in school and provide a supervised paid work experience as an integral part of the high school curriculum. The program was confined to four predominantly Negro-Puerto Rican schools in New York
City. A study of the program conducted by Hamburger (59) involved 108 students in the experimental group and 91 youth in the control group. The evaluation was limited to examining intellectual growth, academic achievement, attitudinal change, school attendance, behavior and level of aspiration. His investigation showed (59, pp. 22-23):

1. The experimental group showed a significant rise in measured IQ during a relatively short period.

2. The experimental group showed a distinct decline in behavior subject to disciplinary action and they stayed in school more than the control group.

3. The experimental group improved their school averages and absences rate significantly over the control group.

4. The rate of increase in reading and arithmetic skills was not statistically significant.

5. A significant change did not appear in the attitudes and adjustment of the experimental group.

6. The level of vocational aspiration of the experimental group were not significantly enhanced as a result of the program.

A study to determine the effectiveness of group guidance and tours to industrial sites on potential drop-outs was conducted in Tracy, California. The investigation was designed to compare grade point averages, conduct, absences and results on the Kuder Preference Record of the experimental and control group. From an analysis of the data, Yunker drew the following conclusions (149, pp. 29-30):
1. The experimental group of students did not differ significantly from the control group members in grade-point-averages as a result of the project.

2. The author also found that the experimental students did not perform significantly better than the control group in the area of citizenship or classroom behavior.

3. The experimental group also did not have a significantly lower number of unexcused absences than did the control group.

4. The study precipitated conflicting results in regards to the question of whether the project could effect significant differences in the vocational interest areas of the students as assessed by Kuder.

Kansas City, Missouri initiated a work-study program in 1961 to serve seriously maladjusted youth in an effort to reduce drop-outs and delinquency (1). The program involved 400 eighth, ninth, and tenth grade youth in a modified curriculum and work-study program. Students who completed tenth grade were provided continued guidance and assistance for one year after leaving school. The findings reported by Ahlstrom and Havighurst indicate (2, p. 5):

Only about one-fourth of the boys profited from the Work-Experience Program. Thus, this study, using work experience as a variable in an experimental design involving predelinquent thirteen- and fourteen-year-old boys at the beginning, failed to demonstrate that supervised work experience, even under relatively controlled conditions, could be useful in materially reducing delinquency among youth so disposed.

St. Louis offered a Work-Related Education Program which
encouraged potential drop-outs to remain in school by providing counseling, help in obtaining part-time employment and special assistance on the job from the employer and school personnel. Mowrer (101) gathered data from 343 students in the experimental group and 266 in the control group over a two-year period ending in 1962. The two groups had approximately the same mean age, intelligence quotient and high school credits when entering the program. The findings were conclusive. The program had resulted in substantially reducing the drop-outs in the experimental group as compared to those in the control group.

A comparable study with opposite results was conducted by Longstreth et al. (88) when they studied 150 potential drop-outs in California. Their investigation was to determine if a low pupil-teacher ratio, vocational training, counseling and paid employment would reduce the drop-out rate, decrease police contacts and improve attitudes. Data were collected from 75 experimental and 75 control students. The study concluded that the program had not met its program objectives and was therefore considered unsuccessful.

Drop-out prevention studies conducted by the Detroit Public Schools (42), Newbury (102), Miller (97) and Poulos (110) used a test of significance to determine if a difference existed between the experimental and control group. These investigations, because of their design and statistical
treatment, provide the most reliable information concerning
the effectiveness of work experience in helping potential
drop-outs to be more successful in school.

The Detroit Public School system evaluated (42) their
In-School Youth Work-Training Project in 1967. Attendance,
tardiness, achievement and citizenship data were collected
on 140 junior high school students fourteen to fifteen years
of age. Findings obtained through the application of the
chi-square test of significance yielded no significant
change in absences, tardiness, achievement and citizenship
of participating students. Although school authorities
felt limited success had been achieved, the study concluded
that the project had actually met only two objectives:
providing financial assistance and supervised work exper-
ience for youth. The program was evaluated again in 1969
by Poulos (110) but this time there were 1500 students in-
volved in the assessment. Certain variables were changed
in that job-performance and drop-out rate were substituted
for achievement and behavior. The second study failed to
demonstrate that the program resulted in better attendance
but punctuality of experimental students were superior to
the control. As for job-performance there were no signifi-
cant differences in the pre-post ratings of employers, but
the program was determined to be successful in reducing the
number of students who drop out of school.
Newbury (102) evaluated a drop-out prevention program in Hazel Park, Michigan. The project provided students with small group instruction, an activity-centered curriculum, field trips, pre-vocational training and work-study. The experimental group was made up of eighth and ninth grade students identified as potential drop-outs. The control group consisted of: (1) seventh grade students identified as potential drop-outs who planned to enter the program, (2) a group of potential drop-outs who did not volunteer for the program and (3) a representative group of regular seventh and ninth grade students. The study was designed to determine if the program was effective in changing attitudes, behavior, self-concept, drop-out potential, absenteeism, drop-out rate and achievement of participating students. An analysis of the data using covariance, chi-square, T-tests, means and percentages revealed that the program was successful in effecting change in favor of the experimental group in all areas studied with the exception of achievement.

Miller (97) investigated the holding power of a work experience program for potential drop-outs in Mount Prospect, Illinois. The study involved 105 students who volunteered for the program and 105 students who had been randomly selected from 462 potential drop-outs not in the program. According to the study, there was no significant difference
at the .05 level that the program: (1) contributed to retaining youth in school, (2) reduced discipline problems, (3) improved attendance or (4) caused more students to participate in school activities. There was evidence, however, that the work experience program improved the grade point average of the experimental group, and some individual schools within the total program were successful in retaining potential drop-outs and improving their attendance.

Studies included in this review were reported for the most part after 1962. How effective has work experience been in keeping youth from dropping out of school? How successful have work-study programs been in improving attendance and behavior, raising the level of achievement and self-concept or reducing tardiness and absences of potential drop-outs? The answer is controversial at best.

There is insufficient evidence that work experience has been successful in retaining youth in school or significantly helping potential drop-outs (86, 60). Results that are available have generally been inconsistent (88, 97) and contradictory (47, 145). There is little continuity from program to program and it is difficult to generalize from individual studies to the larger population because project efforts are directed toward a selected group of youngsters. This has been equally true of studies involving vocational
education for disadvantaged youth (105, 8) as well as some compensatory programs (146). While work experience programs studied by Newbury (102), Bienenstok and Sayres (13) and Mowrer (101) were judged successful an equal number were found to be ineffective by Miller (97), Longstreth et al. (88) and Yunker (149). In addition, programs evaluated by Hamburger (59) and Poulos (110) only yielded success on certain variables within the study. Sollie adequately summarized the status of research and success of work experience programs when he stated (136, p. 498):

Little research on the effectiveness of work-study programs has been completed and the findings that have been reported have been disappointing.

According to Smith and Bryan (135), Freedman (47), Wilkerson (146), Goldberg (52) and Levine (86) research is lacking and until this is remedied there appears to be no absolute answer. Unless more comprehensive research is conducted, the answer to whether work experience is successful in retaining potential drop-outs will continue to be controversial.

Team Teaching

Team teaching was included in this review since it accounted for a portion of the treatment that experimental students received during the time they were in the
compensatory program. Although this brief review of the subject cannot be considered a thorough study of team teaching, it does provide an overview of the topic based on a sampling of the literature.

Team teaching has been used by some school districts in an attempt to improve instruction, utilize teacher competencies, individualize instruction and to provide greater flexibility in the educational program (25). The purposes of team teaching have been well defined, but what are the advantages and disadvantages to teaming? More important yet, has team teaching been an effective educational practice that benefited students? This review will make an effort to answer these two questions.

The idea of teachers joining together and cooperating to teach youngsters is not a new innovative practice. The concept of teaming has been implemented in a large number of school districts (138), and much has been written about the subject of team teaching by those who have successfully used the technique (109). The American Association of School Administrators (AASA) studied teaming practices nationally and reported what was determined to be advantages and disadvantages of team teaching in 1965. The AASA list of advantages and disadvantages, although comprehensive, was far too lengthy for the purposes of this review and has been reduced to the following four for the sake of brevity
Advantages of team teaching are:

- Superior teachers can exercise greater influence in the school and still remain in classroom teaching.

- During large group teaching periods other teachers are freed for small group work, lesson planning, and parent-teacher conferences.

- Pupils spend more of their school time receiving instruction than when they are in self-contained classrooms.

- There is more efficient use of space, materials, and equipment.

Disadvantages of team teaching are:

- The frequency and intensity of contact of the team members leads to complex problems of human relations.

- Inherent in the flexibility of team teaching is the fact that much time and effort must be spent on the complexities of scheduling and planning all the group and individual activities.

- Instruction tends to become more lecture-type and formal.

- It is very difficult to find teachers with the special competencies and high qualifications necessary for team leaders and senior teachers.

Much of the team teaching research is subjective, based on judgment and founded on opinion rather than fact (109). As an example, McLane et al. (94) surveyed 70 twelfth grade government students who had been taught by a team of three teachers. The study revealed that even
though students preferred team teaching to a regular classroom, they did not see any direct benefits such as additional material being covered, more difficult and challenging material being presented or higher grades being earned.

There is some research evidence, however, that indicates students do achieve more when taught by teams of teachers. An experimental study conducted by Lambert et al. (83) which investigated student achievement showed that a significant difference existed between classes taught by teams than those taught traditionally. Studies conducted by Thompson (141), Fraenkel (46) and Georgiades and Bjeilka (50) were also examples of research which revealed that team teaching was more effective than conventional classroom instruction.

Research is also available that failed to support team teaching as an effective organization and delivery system in which students achieved more effectively than conventionally taught students (51, 16).

One would have to conclude from this brief review that findings concerning the effectiveness of team teaching are conflicting and inconclusive at best. Pierson stated his assessment of team teaching as recent as 1971 when he reported that (109, p. 156):

Team teaching is considered an innovative practice even though it has been used in some schools for a number of years. In some school
districts it has been the subject of some experimentation and been discarded as something that is not good teaching practice, while in other school districts it is thriving. Many schools have waited for reliable reports on the success or failure of team teaching and are probably still waiting, because very little research has been done on this 'innovation.'

Shawver issued a similar declaration when he wrote (130, p. 23):

As in much educational research where it is difficult to adequately control the variables, the answer is far from conclusive. The evidence is often contradictory and we must still depend upon professional judgment.

In summary, there seems to be contradictory and conflicting evidence that team teaching is anymore effective than traditional teaching, and it appears there are as many advantages as disadvantages to teaming. There may very well be benefits to teaming which cannot be translated into greater achievement for students. Until more research is conducted, it is impossible to state unequivocally that team teaching is any more effective than traditional teaching or that students benefit significantly from being taught by teams of teachers rather than in the conventional manner.

Summary

The number of disadvantaged children living in metropolitan areas is large and according to some
authorities is increasing. Many of these children are considered to be potential drop-outs and will leave school before acquiring an adequate education. Authorities generally concur that: (1) potential drop-outs can be identified well in advance of their leaving school, (2) the high school diploma is tied closely to economic success and (3) schools have been unsuccessful in developing programs which encourage potential drop-outs to remain in school.

One of the promising methods of preventing school drop-outs has been to provide part-time employment. There are a variety of educational programs which allow students to study and work. Because there are a multiplicity of programs, it has caused confusion as to how they differ. Some authorities contend that work-study is limited to part-time employment with no relationship between what happens in school and on the job, whereas, work experience enables a student to investigate several employment experiences and is directed more toward a general education. Cooperative education on the other hand requires students to develop skills in a specific occupation and is more career oriented. The most recent development is career education which provides career awareness, career exploration and skill training to students, kindergarten through post-secondary school.

It is generally agreed by vocational educators that a
distinction does exist between the many educational pro-
grams involving work during the school day. Due to the
proliferation of such programs in recent years however,
the term work-study and work experience have become synon-
ymous in the minds of many educators.

Work-study programs are viewed by many as a cure for
all educational ills of the disadvantaged. It is believed
that work and study provides motivation to remain in school,
opportunities to develop good work habits, experiences
leading to the development of healthy attitudes and train-
ing for employment. This represents only a few purposes of
work-study programs generally accepted by authorities in
the field. A few contend that the only purpose of work-
study is to provide financial assistance. Some consider
work-study to be an educational bribe. The purposes vary
generally between programs.

There are a variety of programs involving work and
study operating in public schools across the country. Some
have been designed for potential drop-outs, alienated youth,
seriously maladjusted and retarded children in both junior
and senior high schools. There is a growing interest in
making programs available to potential drop-outs in junior
high school, however, most programs currently are found at
the high school level.

It is questionable whether work experience coupled with
additional guidance and team teaching has been successful in encouraging youth to remain in school or providing a vehicle to improve attendance, attitudes, achievement, punctuality or self-concept. There is evidence that some programs have been effective and have met all or part of their program objectives while others have not achieved this distinction. Until additional research is completed, there will continue to be doubt concerning the success of compensatory programs involving work and study to retain disadvantaged youth in school. Neither is it likely that compensatory programs can be substantially strengthened by adding guidance or team teaching since evidence is inconclusive concerning the effectiveness of such practices to help students achieve more effectively.
CHAPTER III. METHODOLOGY

The traditional school environment for many secondary students does not provide sufficient motivation and incentive to remain in school. Many youth become disinterested in learning because the school has not provided an opportunity to see the relationship between acquiring an education and successful employment. There are a variety of ways schools have assisted and encouraged students to remain in school until they graduate or acquire skills to become wage earners. One method of retaining youth has been through compensatory education programs. This chapter provides a description of such a program and describes how it was investigated.

Conceptual Framework for the Study

A primary function of education is to equip youth with sufficient skills and understandings to enable them to enjoy a productive and satisfying life. It is further assumed that graduation is valuable because it symbolizes achievement and has credential value in a society that places a high priority on the completion of school. Youth who drop out, however, do not remain in school long enough to acquire the skills, knowledge and credentials to be successful. A compensatory program was developed and implemented by the
Des Moines Public Schools in 1968 which theoretically provided the necessary motivation for disadvantaged students to reach a higher level of achievement and to remain in school until they graduated.

The program was based on the premise that students, regardless of their deprivation, are capable of achieving in school and that cultural, social and economic differences of children from low income backgrounds do not constitute a permanent barrier to learning. Furthermore, the program was based on the concept that intervention programs can compensate for, and overcome, the educational handicaps of disadvantaged youth when appropriate opportunities and experiences are provided. It was hypothesized that disadvantaged students identified as potential drop-outs would achieve greater success when exposed to additional guidance combined with work and study than disadvantaged students who attended the regular school program.

The major goal of the program was to increase the educational performance of students while encouraging them to remain in school (103). More specifically, the program was designed to: (1) encourage students to continue their school experience until they graduated or acquired saleable skills; (2) improve students' self-concept, attendance and punctuality; (3) raise the students' achievement level in reading, social science and language arts; and (4) improve
the students' self-confidence and personal responsibility (38).

Variables used to determine the effectiveness of the compensatory program were grade point average; achievement in social science, language arts and reading; attitude toward school; personal and social adjustment; self-concept; teacher rating; attendance; punctuality and intelligence. These measures were selected because:

1. Grade point average is indicative of one's capability, eagerness and willingness to learn.

2. Students can function more responsibly and effectively if they have an understanding of democratic processes, a knowledge of this country's historical development and can interpret graphic information.

3. The ability to communicate and read is directly related to the success a student will have socially and academically.

4. The attitude, self-concept and personal and social adjustment of an individual will have profound influence on what a person will achieve in school.

5. Students who rate high on such characteristics as cooperation, reliability, courtesy, initiative, conduct and leadership will be successful in school.

6. Regular attendance and punctuality are essential if students are to make satisfactory progress in school.

7. Individual intelligence can provide a source of variance which should be accounted for and controlled.
Method of Collecting Data

Data for this study were obtained from standardized tests and cumulative records of students. Standardized measures administered specifically for use in this study (Table 1) were the Metropolitan Achievement Test, California Test of Personality, Science Research Associates (SRA) Reading Record, Tennessee Self-Concept Scale and Survey of Study Habits and Attitudes. These measurements, with the exception of the Tennessee Self-Concept Scale and the Survey of Study Habits and Attitudes, were collected in September, 1968 when students involved in the study were beginning seventh grade, again in May, 1970 when the same students were completing eighth grade and finally in May, 1972 at the end of tenth grade. Results of the Tennessee Self-Concept Scale and Survey of Study Habits and Attitudes were collected in May, 1970 and May, 1972 or at the end of eighth grade and tenth grade. In addition, the Lorge-Thorndike Intelligence Test, administered in sixth grade as a part of the district's city-wide testing program, was also used in the analysis of this investigation. Data gathered from cumulative records of students in September, 1968; May, 1970 and May, 1972 included absences, tardiness, grade point average and teacher ratings.

A word of explanation may be necessary with respect to teacher ratings. Teachers rated their students each year
Table 1. Standardized measures used in the study

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<th>Battery/Level</th>
<th>Form</th>
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<tr>
<td>Grade 6 or January, 1968</td>
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<tr>
<td>Lorge-Thorndike Intelligence</td>
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<td>Beginning Grade 7 or September, 1968</td>
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<td>Am</td>
<td>4-5-8-9</td>
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<td>All</td>
</tr>
<tr>
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<td>N/A</td>
<td>All</td>
</tr>
<tr>
<td>End of Grade 8 or May, 1970</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Metropolitan Achievement Test</td>
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<td>Bm</td>
<td>4-5-8-9</td>
</tr>
<tr>
<td>California Test of Personality</td>
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<tr>
<td>SRA Reading Record</td>
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</table>

N/A Not Applicable
on such characteristics as cooperation, initiative, leadership, conduct, reliability, courtesy and respects authority. The rating was obtained using a three-point scale where: one was above average, two was average and three was below average. The teacher measurement was obtained by finding the average of the seven individual ratings.

Description of Instruments

A total of five standardized measures were administered to all subjects in the experimental and control group to determine changes in self-concept, achievement, attitude and personal and social adjustment. Each commercial test used in the investigation has been briefly described using manuals and Mental Measurement Yearbooks (20, 21).

Achievement: Metropolitan Achievement Tests are organized in six batteries with Form Am and Bm available for each level. The Advanced Battery was used for seventh and eighth grade while the High School Battery was used for tenth grade. Although the Metropolitan covers four major areas of achievement, only those of language arts and social science were used to determine academic growth.

Reading achievement was established through the use of the SRA Reading Record, 1959 Edition. The Reading Record gives five subscores and was selected because of its diagnostic value as well as providing an over-all measure of
reading achievement. All subtests were needed to obtain a total score, therefore, all five components of the test had to be administered. The only raw score used in the analysis of this investigation however was the composite reading score.

**Self Concept:** The Tennessee Self-Concept Scale (TSCS) is an instrument designed to provide knowledge relative to how an individual perceives himself. The Scale developed by Fitts has been used for counseling, diagnosis, personnel selection and research. The TSCS comes in a Counseling and Clinical or Research Form and consisted of 100 self-descriptive statements which yielded a variety of subscores. Subjects who are 12 years of age and capable of reading at the sixth grade level can take the self-administering Scale in 10 to 20 minutes.

**Attitude:** The Survey of Study Habits and Attitudes Test (TSSHA), Form H, was used to measure study methods, motivation for studying and attitudes toward school related activities. The SSHA Test consisted of 100 items which produced four basic scales, two subtotals and a composite score. Since high scores on the SSHA were indicative of students who had been academically successful in school and low scores were characteristic of students who received low grades, a measure of how students felt about school and how they might be expected to perform was provided for both the experimental and control group by
using the Survey.

**Personal and Social Adjustment:** The California Test of Personality was designed primarily as a developmental instrument for use in the classroom by teachers and counselors or in business by employers. It has also been used extensively in research. An examination of the test revealed that six subscores for two major categories, personal adjustment and social adjustment, plus a total adjustment score was provided. The test was available in Form AA and BB for primary, elementary, intermediate, secondary and adult levels.

**Intelligence:** Although this study was not concerned with investigating the change in intelligence between the experimental and control group, it was important to establish the capability of each of the two groups for research purposes. The Lorge-Thorndike Intelligence Test was used to determine the ability of students to work with ideas and their relationships. The Lorge-Thorndike, 1964 Edition, was published in two forms for grades 3-13. The test provided three subscores. The total score was used in this study to indicate the mental ability of students and was obtained by finding the average of the Verbal and Nonverbal subscores.

Test descriptions provided this far have not been critical. Researchers are aware, however, that standardized
or norm referenced tests may contain certain unwanted variations as a result of repeated use, poor test construction or inadequate norming procedures.

Selection of Sample

This four-year longitudinal study began when pretest data were collected on 96 experimental and 96 control seventh grade students from four junior high schools in Des Moines, Iowa. Subjects had to be drawn from separate but similar schools because there were insufficient candidates in any one junior high school that met selection criteria established by the study. The investigation was limited initially to 192 selected students (Table 2) who in the judgment of teachers and counselors were: (1) reading two or more years below their assigned grade placement, (2) of average ability and (3) considered to be potential drop-outs because of their low achievement and lack of success in school.

Description of the Treatment

A compensatory program directed toward disadvantaged youth was initiated in September, 1968 at two junior high schools in Des Moines, Iowa. Although costs of the program varied each year over the four-year period considered in this study, the average yearly per pupil costs was estimated
Table 2. Number of students in the sample

<table>
<thead>
<tr>
<th>Junior High Schools</th>
<th>Number of Students in Study</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>B</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>C</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>D</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96</strong></td>
<td><strong>192</strong></td>
</tr>
</tbody>
</table>

...to be $291.08 above the average per pupil costs of the district. Funding for the program came from local, state and federal sources. The Des Moines Public Schools, State Department of Public Instruction, Housing and Urban Development, Office of Education and Department of Labor have been the primary funding agencies. The program (103) which provided selected secondary students with an opportunity to participate in a different kind of educational experience was based on the following assumptions:

1. The traditional school curriculum had failed to help many disadvantaged youth from low socio-economic backgrounds.

2. Disadvantaged youth were likely to leave school before graduation if they were not interested and academically successful.

3. Being disadvantaged did not mean a student could not learn.
The treatment consisted of providing a different academic program, a work experience opportunity and additional guidance and counseling services through a work experience advisor. Each of the three components will be discussed separately.

**Academic Program:** The educational program was characterized by a two-period block-of-time for greater flexibility in which approximately 50 students participated initially in a student centered curriculum. The instructional program stressed language arts development while emphasizing reading. Social science, some pre-vocational training and an orientation to the world of work were also integrated into the block-of-time activities. A team approach was used during the longer instructional period in an effort to better utilize staff, capitalize on the strengths of teachers, take advantage of student interests and build upon experiences students were having at work. The team consisted of four certified persons: one work experience advisor and three teachers who taught reading, social science and language arts. A teacher associate provided instructional reinforcement and clerical assistance. Other teachers, counselors and building personnel were available to assist the team when special or additional teaching resources were needed. The two-period block-of-time and team effort took approximately half of the morning
after which students elected two classes such as art, music, mathematics, industrial arts and homemaking which they attended with students not enrolled in the compensatory program.

Work Experience: Jobs were developed in both the private and public sectors of the community by work experience advisors working with business, industry, social service agencies and governmental bodies. Most youth worked in public agencies since federal funds were available to underwrite wages. Students normally worked in the afternoon and were paid $1.60 an hour for 15 hours work each week. Youth could not qualify for work experience until they reached the age of 14. Students typically reached this age in eighth grade after they had been involved in the program for one year and had received some pre-vocational training.

The work experience component was crucial to the program as it was viewed as the element providing the most motivation to students. Jobs, however, were never intended to be "just work" but rather an extension of the classroom where students learned and practiced good habits and attitudes that would help them find and keep employment later after graduation. Although some jobs were less challenging and provided little skill development, they still served as an incentive, supplying youth with an income and providing opportunities to learn about the world of work. All jobs,
regardless of the skill required, provided students with a need to be on time, manage their own money, accept responsibility, develop confidence and cooperate with others. Teachers endeavored to relate learnings from the job to the classroom and what was learned at school to the student's work experience. If what was learned on the job or in the classroom could be transferred, it was hypothesized that student achievement, attitude and attendance could be improved significantly.

**Guidance, Counseling, and the Work Experience Advisor's Role:** The compensatory program described in this chapter was based on the premise that seemingly independent and unrelated activities of work and study could be coordinated with additional guidance and counseling services into an effective educational delivery system for disadvantaged youth. Because the advisor's responsibilities are so important to all components of the program, they have been presented separately.

The work experience advisor was required to be a counselor, teacher and support to approximately 50 youth; a liaison between the school, home, and employer; and a coordinator of the instructional team. The advisor located jobs for students, worked out personal differences and problems, monitored their attendance, supervised their progress in school, provided additional guidance, and counseling services and served as a student advocate. If additional
services were needed, the advisor was responsible for identifying community resources that could be brought to bear on individual needs.

In general, the compensatory program described above held constant throughout the junior high school or during the seventh, eighth and ninth grades. The only programmatic change that occurred during the four-year period was at the beginning of tenth grade when team teaching and the block-of-time components were dropped. All other aspects of the compensatory program remained intact as described.

Description of the Control Group Program

Students assigned to the control group planned their class schedule with the help of their parents and guidance counselor. The instructional program for seventh and eighth grade students was based on the interest and ability of individual pupils and the following guidelines provided by the junior high school:

<table>
<thead>
<tr>
<th>Required Classes</th>
<th>One Elective Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>Art</td>
</tr>
<tr>
<td>Social Science</td>
<td>Music</td>
</tr>
<tr>
<td>Language Arts</td>
<td>Foreign Language</td>
</tr>
<tr>
<td>Physical Science</td>
<td>Study Hall</td>
</tr>
<tr>
<td>Physical Education</td>
<td></td>
</tr>
<tr>
<td>Homemaking (Girls)(^1)</td>
<td></td>
</tr>
<tr>
<td>Industrial Arts (Boys)(^1)</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Required courses in eighth grade only.
The instructional program for ninth and tenth grade students was determined by a student's interest, ability and the following academic requirements for graduation:

Satisfactory completion of 10 elective units
Satisfactory completion of 7 required units as follows:

- 2 units of English
- 1 unit of World History
- 1 unit of American History
- 1 unit of Mathematics or Science
- 1 unit of Physical Education during four years
- \( \frac{1}{2} \) unit of Economics
- \( \frac{1}{2} \) unit of Government

17 units Total for graduation

The school district did not have an established counselor load. Generally speaking, each counselor was assigned from 300 to 350 students for guidance purposes. Students in the control group could expect to receive counseling and guidance services according to need and the availability of the counselor's time based on a ratio of 1 to 350.

In summary, it can be stated that a limited number of students may have been involved in some team teaching since individual control teachers could have cooperated with other members of the faculty to present material. The use of this technique would have been limited, however, and considered to be the exception rather than normal procedure for classroom organization. In addition, there may have been some students working part-time after school, but control students were not released to work during school hours as a part of the instructional program.
Analysis of Data

This quasi-experimental study employed a nonequivalent control group design because students were selected rather than randomly assigned to the experimental and control groups (22). A major criticism of this kind of design is that it does not correct for initial differences through the process of randomization thereby violating certain statistical assumptions. Since it was impossible to employ randomization techniques, this study compensated for the lack of experimental control by providing statistical control through the use of analysis of covariance (82).

It was necessary to test for initial differences to determine what if any pretest scores should be used as covariates. An analysis of variance was used to determine if a significant difference existed between the group means on all pretest measures. The following model was used to test for initial differences:

\[ Y_{ij} = U + A_i + E_{ij} \]

- \( Y_{ij} \) = the score for the \( j^{th} \) student in the \( i^{th} \) group
- \( U \) = the overall grand mean
- \( A_i \) = the effect of the \( i^{th} \) treatment
- \( E_{ij} \) = the random error associated with the \( j^{th} \) student in the \( i^{th} \) group
The primary objective of this investigation was to determine the effectiveness of a compensatory program involving selected secondary students. An analysis of variance model as shown above and an analysis of covariance was utilized to test the hypotheses that there was no significant difference between the experimental group and control group with respect to attendance, tardies, grade point average, teacher rating, achievement, personal and social adjustment, self-concept and study habits and attitudes. The analysis of covariance model used in this study was as follows:

\[ Y_{ij} = U + A_i + B(X_{ij} - \bar{X}_{..}) + B(Z_{ij} - \bar{Z}_{..}) + E_{ij} \]

- \( Y_{ij} \) is the score for the \( j^{th} \) student in the \( i^{th} \) group
- \( U \) = the overall grand mean
- \( A_i \) = the effect of the \( i^{th} \) treatment
- \( B \) = the regression coefficient of \( Y \) on \( X \)
- \( X_{ij} \) = the score on the Lorge-Thorndike Intelligence Test for the \( j^{th} \) student in the \( i^{th} \) group
- \( \bar{X}_{..} \) = the overall mean for the Lorge-Thorndike Intelligence Test
- \( B \) = the regression coefficient of \( Y \) on \( X \)
- \( Z_{ij} \) = the appropriate score on the pretest for the \( j^{th} \) student in the \( i^{th} \) group
$\bar{Z}_{ij} = \text{the overall mean for the appropriate pretest}$

$E_{ij} = \text{the random error associated with the } j^{th} \text{ student in the } i^{th} \text{ group}$

A chi square statistical test was used to determine if a significant difference existed in the frequency of drop-outs between the experimental and control groups. The chi square calculation was manually computed using the following formula:

$$\chi^2 = \sum \frac{(\text{Actual frequency} - \text{Expected frequency})^2}{\text{Expected frequency}}$$
CHAPTER IV. FINDINGS

Data reported in this chapter were compiled from cumulative records and standardized tests for the primary purpose of determining if enrollment in a compensatory work-study program contributed significantly to a student's:

(1) attendance, (2) punctuality, (3) grade point average, (4) teacher rating, (5) achievement, (6) personal and social adjustment, (7) self-concept, (8) study habits and attitudes and (9) continued enrollment in school.

To determine if a significant difference existed between the experimental group and control group three statistical treatments were used: analysis of variance, analysis of covariance and chi square. Analysis of variance was first used to test for initial differences. Analysis of covariance was then employed if a significant difference was found to exist between pretest measures. If no significant difference was found, an analysis of variance was used to test the remaining variables. Chi square was used to analyze data concerned with the number of experimental and control students who dropped out of school.

To further study students who had left school prior to the conclusion of this investigation, each drop-out or parent was interviewed to determine if the student had been successful in finding employment even though he or she had left school before graduating. Although this information was not
statistically treated, a general discussion of the findings are included in this chapter.

After a discussion of tests of initial differences reported in Table 3, results of this study were presented using a format which included: (1) statement of the null hypothesis, (2) presentation of pretest, posttest and mean differences, (3) statistical analysis of the appropriate data by grade level, (4) corresponding table and (5) fail to reject or rejection of the null hypothesis. The chapter concluded with a brief discussion regarding the status of students who dropped out of school prior to their completion of grade 10.

Tests of Initial Differences

Due to the composition of the sample, randomization could not be achieved in this study. Therefore, it was necessary to determine whether statistical control was required through the use of analysis of covariance. Analysis of variance was used to test for initial differences between pretest measures on each variable to make that determination. The results of that testing outlined in Table 3 showed that a significant difference did exist between the experimental and control group with respect to teacher rating, language, language study skills, social studies information, social studies study skills, reading, self-concept and study habits
Table 3. Analysis of variance: Tests of initial differences in grades 6-7-8

<table>
<thead>
<tr>
<th>Variables and Grade Levels</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \bar{X} )</td>
<td>( s )</td>
<td>( \bar{X} )</td>
</tr>
<tr>
<td>Days Absent-Grade 6</td>
<td>9.80</td>
<td>9.49</td>
<td>9.50</td>
</tr>
<tr>
<td>Times Tardy-Grade 6</td>
<td>1.70</td>
<td>2.62</td>
<td>1.26</td>
</tr>
<tr>
<td>Grade Point Average-Grade 6</td>
<td>2.88</td>
<td>0.49</td>
<td>2.94</td>
</tr>
<tr>
<td>Teacher Rating-Grade 6</td>
<td>13.85</td>
<td>2.85</td>
<td>12.71</td>
</tr>
<tr>
<td>Intelligence-Grade 6</td>
<td>46.33</td>
<td>13.50</td>
<td>61.59</td>
</tr>
<tr>
<td>Language-Grade 7</td>
<td>32.56</td>
<td>9.21</td>
<td>39.61</td>
</tr>
<tr>
<td>Language Study Skills-Grade 7</td>
<td>8.41</td>
<td>3.87</td>
<td>12.29</td>
</tr>
<tr>
<td>Social Studies Information-Grade 7</td>
<td>15.58</td>
<td>7.52</td>
<td>22.85</td>
</tr>
<tr>
<td>Social Studies Study Skills-Grade 7</td>
<td>4.85</td>
<td>4.96</td>
<td>13.28</td>
</tr>
<tr>
<td>Reading-Grade 7</td>
<td>32.16</td>
<td>12.57</td>
<td>41.04</td>
</tr>
<tr>
<td>Personal and Social Adjustment Grade 7</td>
<td>99.85</td>
<td>21.74</td>
<td>104.95</td>
</tr>
<tr>
<td>Self-Concept-Grade 8</td>
<td>294.35</td>
<td>77.40</td>
<td>332.40</td>
</tr>
<tr>
<td>Study Habits and Attitudes-Grade 8</td>
<td>59.93</td>
<td>26.32</td>
<td>70.92</td>
</tr>
</tbody>
</table>

*Significant (.05).

**Highly significant (.01).
and attitudes. As a result of these findings, pretest scores on these variables were used as covariates. An additional covariate was intelligence which was found to be highly significant. The mean intelligence score for the experimental group was 46.33 with a standard deviation of 13.50 while the mean intelligence score for the control group was 61.59 with a standard deviation of 20.92.

Analysis of these data revealed that no significant difference existed between the pretest scores of the experimental and control groups with respect to days absent, times tardy and grade point average. Analysis of variance was, therefore, used in the analysis of these data. One exception was the use of analysis of covariance rather than analysis of variance when a nonsignificant F-value was found between the personal and social adjustment pretest measures of the experimental and control group.

To simplify the analysis of covariance tables found in this chapter, sums of squares were limited to treatment and error. Since these two components provided the necessary data to arrive at the appropriate means squares and an F-value for a test of significance, they were the only values reported in the tables.
Hypotheses

**Hypothesis #1** There is no significant difference between the attendance of students in the experimental and control group.

Table 4 contains the mean differences of initial and posttreatment data for days absent in the experimental and control groups for grades 7, 8, 9 and 10.

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Initial</th>
<th>Post-treatment</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 7</td>
<td>48</td>
<td>9.8</td>
<td>17.4</td>
<td>7.6</td>
</tr>
<tr>
<td>Control for Grade 7</td>
<td>67</td>
<td>9.6</td>
<td>12.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>9.8</td>
<td>11.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>9.6</td>
<td>10.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Experimental for Grade 9</td>
<td>28(^a)</td>
<td>7.2</td>
<td>15.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Control for Grade 9</td>
<td>24</td>
<td>6.8</td>
<td>10.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>7.2</td>
<td>13.7</td>
<td>6.5</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>6.8</td>
<td>5.0</td>
<td>1.8</td>
</tr>
</tbody>
</table>

\(^a\)Sample size reduced due to attrition.

An examination of data outlined in Table 5 indicates that a significant difference existed between the experimental and control group regarding attendance in grade 7. An F-value of 4.923, as determined by analysis of variance, was significant at the (.05) level with df of 1 and 113.
Table 5. Analysis of variance: Days absent for grade 7

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>70300</td>
<td>70300</td>
<td>4.923*</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>1614000</td>
<td>14283.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>1684300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant (.05).

An inspection of Tables 6, 7 and 8 reveals an F-value of 0.3019 for attendance in grade 8, 2.3864 for attendance in grade 9, and 2.593 for attendance in grade 10. These three F-values were not found to be significant at the (.05) level with df of 1 and 113 for grade 8 and df of 1 and 50 for grades 9 and 10.

Table 6. Analysis of variance: Days absent for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>4345</td>
<td>4345</td>
<td>0.3019</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>1626000</td>
<td>14389.3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>1630345</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The null hypothesis regarding attendance was rejected for grade 7 and was not rejected for grades 8, 9 and 10. Analysis of these data revealed that the experimental group did not benefit significantly from the compensatory program with respect to attendance in school.

### Table 7. Analysis of variance: Days absent for grade 9

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>37290.0</td>
<td>37290.0</td>
<td>2.3864</td>
</tr>
<tr>
<td>Error</td>
<td>50</td>
<td>781300.0</td>
<td>15626.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>818590.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 8. Analysis of variance: Days absent for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>33430.0</td>
<td>33430.0</td>
<td>2.593</td>
</tr>
<tr>
<td>Error</td>
<td>50</td>
<td>644400.0</td>
<td>12888.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>677830.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hypothesis #2 There is no significant difference between the punctuality of students in the experimental and control group.

Performance of students in the experimental and control groups on initial and posttreatment measures relative to times tardy for grades 7, 8, 9 and 10 are reported in Table 9.

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Initial</th>
<th>Post-treatment</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 7</td>
<td>48</td>
<td>1.7</td>
<td>4.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Control for Grade 7</td>
<td>67</td>
<td>1.3</td>
<td>2.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>1.7</td>
<td>7.4</td>
<td>5.7</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>1.3</td>
<td>7.9</td>
<td>6.6</td>
</tr>
<tr>
<td>Experimental for Grade 9</td>
<td>28</td>
<td>1.8</td>
<td>6.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Control for Grade 9</td>
<td>24</td>
<td>1.3</td>
<td>3.9</td>
<td>2.6</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>1.8</td>
<td>10.3</td>
<td>8.5</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>1.3</td>
<td>7.4</td>
<td>6.1</td>
</tr>
</tbody>
</table>

\[\text{Sample sizes reduced due to attrition.}\]

An examination of Tables 10, 11, 12 and 13 indicates an F-value of 3.333 for grade 7, 0.0228 for grade 8, 0.7815 for grade 9 and 0.9513 for grade 10 with respect to punctuality. These four F-values were not significant at the (.05) level with df of 1 and 113 for grades 7 and 8 or 1 and 50 for grades 9 and 10.
### Table 10. Analysis of variance: Times tardy for grade 7

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>91.43</td>
<td>91.43</td>
<td>3.333</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>3100.00</td>
<td>27.43</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>3191.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 11. Analysis of variance: Times tardy for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>5.64</td>
<td>5.64</td>
<td>0.0228</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>27935.00</td>
<td>247.21</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>27940.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 12. Analysis of variance: Times tardy for grade 9

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>66.12</td>
<td>66.12</td>
<td>0.7815</td>
</tr>
<tr>
<td>Error</td>
<td>50</td>
<td>4230.00</td>
<td>84.60</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>4296.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 13. Analysis of variance: Times tardy for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>109.5</td>
<td>109.5</td>
<td>0.9513</td>
</tr>
<tr>
<td>Error</td>
<td>50</td>
<td>5755.0</td>
<td>115.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>5864.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Analysis of these data regarding times tardy revealed the treatment did not significantly affect the punctuality of the experimental group when compared with the control group. Therefore, the null hypothesis that no significant difference would exist was not rejected.

Hypothesis #3 There is no significant difference between the grade point average of students in the experimental and control group.

Mean grade point averages for grades 7, 8, 9 and 10 on initial and posttreatment measures for the experimental and control groups are reported in Table 14. Grade point averages were based on a grading system where: A=1, B=2, C=3, D=4 and F=5.
Table 14. Mean grade point averages for grades 7-8-9-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Initial</th>
<th>Post-treatment</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 7</td>
<td>43</td>
<td>2.88</td>
<td>2.80</td>
<td>.08</td>
</tr>
<tr>
<td>Control for Grade 7</td>
<td>67</td>
<td>2.95</td>
<td>2.77</td>
<td>.18</td>
</tr>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>2.88</td>
<td>2.93</td>
<td>.05</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>2.95</td>
<td>2.80</td>
<td>.15</td>
</tr>
<tr>
<td>Experimental for Grade 9</td>
<td>28a</td>
<td>2.94</td>
<td>2.84</td>
<td>.10</td>
</tr>
<tr>
<td>Control for Grade 9</td>
<td>24</td>
<td>2.90</td>
<td>2.70</td>
<td>.20</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>2.94</td>
<td>3.14</td>
<td>.20</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>2.90</td>
<td>3.46</td>
<td>.56</td>
</tr>
</tbody>
</table>

*aSample size reduced due to attrition.

Results of the statistical treatment on data gathered to test the hypothesis concerning grade point average are outlined in Tables 15, 16, 17 and 18. An F-value of 0.0731 for grade 7, 0.9308 for grade 8, 0.9116 for grade 9 and 1.957 for grade 10 were not significant at the (.05) level with df of 1 and 113 for grades 7 and 8 and 1 and 50 for grades 9 and 10.

Table 15. Analysis of variance: Grade point average for grade 7

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>339.0</td>
<td>339.0</td>
<td>0.731</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>523700.0</td>
<td>4634.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>524039.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 16. Analysis of variance: Grade point average for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>4957.0</td>
<td>4957.0</td>
<td>0.9308</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>601800.0</td>
<td>5325.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>606757.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 17. Analysis of variance: Grade point average for grade 9

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>2378.0</td>
<td>2378.0</td>
<td>0.9116</td>
</tr>
<tr>
<td>Error</td>
<td>50</td>
<td>130430.0</td>
<td>2608.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>132808.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 18. Analysis of variance: Grade point average for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>13210.0</td>
<td>13210.0</td>
<td>1.957</td>
</tr>
<tr>
<td>Error</td>
<td>50</td>
<td>337490.0</td>
<td>6749.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>350700.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The null hypothesis regarding grade point average remained tenable since no significant difference existed between the experimental and control groups as determined by an analysis of these data for grades 7, 8, 9 and 10.

**Hypothesis #4** There is no significant difference between the teacher rating of students in the experimental and control group.

An inspection of Table 19 shows the initial and post-treatment means for teacher rating of the experimental and control groups for grades 7, 8, 9 and 10. The following procedure was utilized to determine the teacher rating: (1) students received a rating of 1, 2 or 3 on cooperation, initiative, leadership, conduct, reliability, courtesy and respects authority from each teacher they received instruction; (2) all teacher ratings for each characteristic were averaged for each student; (3) the averages were totaled to achieve each student's composite rating. A range with a high of 7 and a low of 21 was possible using this procedure.
Table 19. Mean teacher rating for grades 7-8-9-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Initial</th>
<th>Post-treatment</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 7</td>
<td>48</td>
<td>13.9</td>
<td>14.3</td>
<td>.4</td>
</tr>
<tr>
<td>Control for Grade 7</td>
<td>67</td>
<td>12.7</td>
<td>12.6</td>
<td>.1</td>
</tr>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>13.9</td>
<td>14.6</td>
<td>.7</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>12.7</td>
<td>13.1</td>
<td>.4</td>
</tr>
<tr>
<td>Experimental for Grade 9</td>
<td>28</td>
<td>14.1</td>
<td>9.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Control for Grade 9</td>
<td>24</td>
<td>11.7</td>
<td>13.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>14.1</td>
<td>15.0</td>
<td>.9</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>11.7</td>
<td>12.6</td>
<td>.9</td>
</tr>
</tbody>
</table>

*aSample size reduced due to attrition.

When teachers rated students on such characteristics as cooperation, initiative, leadership, conduct, reliability, courtesy and respects authority, little difference was found between the experimental and control groups in grades 7, 8 and 10 while a substantial difference was found in grade 9. A review of Tables 20, 21, 22, 23 shows that a nonsignificant F-value of 2.329 was reported for grade 7, 1.694 for grade 8 and 0.2846 for grade 10, whereas, a highly significant F-value of 19.420 was found for grade 9. These findings were based on analysis of covariance with df of 1 and 111 for grades 7 and 8 and 1 and 48 for grades 9 and 10.
Table 20. Analysis of covariance: Teacher rating for grade 7

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>1333.00</td>
<td>1333.000</td>
<td>2.329</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>63516.00</td>
<td>572.216</td>
<td></td>
</tr>
</tbody>
</table>

Table 21. Analysis of covariance: Teacher rating for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>996.00</td>
<td>996.000</td>
<td>1.694</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>65272.00</td>
<td>588.036</td>
<td></td>
</tr>
</tbody>
</table>

Table 22. Analysis of covariance: Teacher rating for grade 9

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>61319.38</td>
<td>61319.40</td>
<td>19.420**</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>151560.60</td>
<td>3157.51</td>
<td></td>
</tr>
</tbody>
</table>

**Highly significant (.01).
Table 23. Analysis of covariance: Teacher rating for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>454.06</td>
<td>454.06</td>
<td>0.2846</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>76571.38</td>
<td>1595.24</td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis regarding teacher rating was not rejected for grades 7, 8 and 10 and was rejected for grade 9. This indicates that although a compensatory work-study program for potential drop-outs had little effect on teacher ratings in grades 7, 8 and 10, there was a significant improvement of teacher ratings in favor of the experimental group for students in grade 9.

**Hypothesis #5** There is no significant difference between the academic achievement of students in the experimental group and control group.

Data outlined in Table 24 represent language pretest and posttest means for the experimental and control groups for grades 8 and 10.
Table 24. Language means on pretests and posttests for grades 8-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>32.6</td>
<td>36.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>39.6</td>
<td>44.2</td>
<td>4.6</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28(^a)</td>
<td>31.8</td>
<td>23.0</td>
<td>8.8</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>37.0</td>
<td>24.9</td>
<td>12.1</td>
</tr>
</tbody>
</table>

\(^a\)Sample size reduced due to attrition.

Although one hypothesis was formulated for achievement, a separate analysis was completed for each of five variables. Data regarding language, language study skills, social studies information, social studies study skills and reading were collected only at the end of grade 8 and grade 10 for the experimental and control students. Analysis of covariance was applied to each variable at each grade level.

An analysis of Tables 25 and 26 concerning language for grades 8 and 10 indicates F-values of 2.4501 for grade 8 and 0.3380 for grade 10 with df of 1 and 111 for grade 8 and 1 and 48 for grade 10.
Table 25. Analysis of covariance: Language for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>9879.75</td>
<td>9879.75</td>
<td>2.4501</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>447582.30</td>
<td>4032.27</td>
<td></td>
</tr>
</tbody>
</table>

Table 26. Analysis of covariance: Language for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>74.92</td>
<td>74.925</td>
<td>0.3380</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>10639.75</td>
<td>221.661</td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis regarding language remains tenable since the F-values reported are not significant at the (.05) level with 1 and 111 df for grade 8 and 1 and 48 for grade 10. Analysis of these data revealed the treatment provided experimental students was unsuccessful in improving language development at either grade 8 or grade 10.

Table 27 contains pretest and posttest data relative to language study skills means for the experimental and control groups in grades 8 and 10.
Table 27. Language study skills means on pretests and post-tests for grades 8-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>8.4</td>
<td>11.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>12.3</td>
<td>14.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>7.8</td>
<td>7.3</td>
<td>.5</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>11.8</td>
<td>8.6</td>
<td>3.2</td>
</tr>
</tbody>
</table>

\(^a\)Sample size reduced due to attrition.

Data reported in Table 28 show a highly significant F-value of 8.485 with df of 1 and 111 for grade 8 language study skills. Table 29 contained data relative to language study skills for grade 10. An examination of these data reveals a nonsignificant F-value of 2.730 with 1 and 48 df.

Table 28. Analysis of covariance: Language study skills for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>407.347</td>
<td>407.347</td>
<td>8.485**</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>5328.746</td>
<td>48.006</td>
<td></td>
</tr>
</tbody>
</table>

\(^\text{**}\)Highly significant (.01).
Table 29. Analysis of covariance: Language study skills for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>312.390</td>
<td>312.390</td>
<td>2.730</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>5491.766</td>
<td>114.412</td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis was rejected for grade 8 language study skills and was not rejected for grade 10. Based on these data, there was no treatment benefit in grade 10. Moreover the control group made significant greater language study skill gains in grade 8.

Pretest and posttest social studies information performance of students assigned to the experimental and control groups for grades 9 and 10 are reported in Table 30.

Table 30. Social studies information means on pretests and posttests for grades 8-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>15.6</td>
<td>21.0</td>
<td>5.4</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>22.9</td>
<td>26.2</td>
<td>3.3</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28&lt;sup&gt;a&lt;/sup&gt;</td>
<td>14.5</td>
<td>32.9</td>
<td>18.4</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>21.1</td>
<td>31.0</td>
<td>9.9</td>
</tr>
</tbody>
</table>

<sup>a</sup>Sample size reduced due to attrition.
A study of Tables 31 and 32 regarding social studies information shows an F-value of 1.9997 with df of 1 and 111 for grade 8 and 0.1331 with df of 1 and 48 for grade 10. Neither F-value was significant at the (.05) level.

Table 31. Analysis of covariance: Social studies information for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>487.31</td>
<td>487.31</td>
<td>1.9997</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>27048.44</td>
<td>243.68</td>
<td></td>
</tr>
</tbody>
</table>

Table 32. Analysis of covariance: Social studies information for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>21.378</td>
<td>21.378</td>
<td>0.1331</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>7709.957</td>
<td>160.624</td>
<td></td>
</tr>
</tbody>
</table>

Analysis of these data shows that there was no apparent advantage from the treatment to measured social studies information for grades 8 and 10. As a result of these findings,
the null hypothesis was not rejected.

Social studies study skills means collected as pretest and posttest scores for grades 8 and 10 were presented in Table 33 for inspection.

Table 33. Social studies study skills means on pretests and posttests for grades 8-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>4.9</td>
<td>11.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>13.3</td>
<td>13.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28^a</td>
<td>3.3</td>
<td>29.9</td>
<td>26.6</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>11.7</td>
<td>32.4</td>
<td>20.7</td>
</tr>
</tbody>
</table>

^Sample size reduced due to attrition.

Social studies study skills as a component of academic achievement was reported in Tables 34 and 35. An F-value of 0.0714 with df of 1 and 111 for grade 8 and an F-value of 0.1102 with df of 1 and 48 for grade 10 showed no significant difference in social studies skills scores of the experimental and control groups.
Table 34. Analysis of covariance: Social studies study skills for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>562.00</td>
<td>562.00</td>
<td>0.0714</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>873583.90</td>
<td>7870.13</td>
<td></td>
</tr>
</tbody>
</table>

Table 35. Analysis of covariance: Social studies study skills for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>125.375</td>
<td>125.375</td>
<td>0.1102</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>54596.750</td>
<td>1137.430</td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis that no significant difference existed between the experimental and control groups at either grade 8 or grade 10 was not rejected as it relates to social studies study skills in these grades.

The performance of students in the experimental and control groups on pretest and posttest measures relative to reading achievement for grades 8 and 10 were reported in Table 36.
Table 36. Reading means on pretests and posttests for grades 8-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>32.1</td>
<td>46.0</td>
<td>13.9</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>41.0</td>
<td>50.1</td>
<td>9.1</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28(^a)</td>
<td>32.6</td>
<td>56.8</td>
<td>24.2</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>36.4</td>
<td>57.5</td>
<td>21.1</td>
</tr>
</tbody>
</table>

\(^a\)Sample size reduced due to attrition.

Reading, the final area of academic achievement to be considered within hypothesis number 5, was reported in Tables 37 and 38. An inspection of the reading data revealed a nonsignificant F-value of 3.839 for grade 8 with df of 1 and 111, whereas, a significant F-value of 4.109 with df of 1 and 48 was reported for grade 10.

Table 37. Analysis of covariance: Reading for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>19127.25</td>
<td>19127.25</td>
<td>3.839</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>553001.40</td>
<td>4981.99</td>
<td></td>
</tr>
</tbody>
</table>
Table 38. Analysis of covariance: Reading for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>2258.125</td>
<td>2258.125</td>
<td>4.109*</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>26374.250</td>
<td>549.463</td>
<td></td>
</tr>
</tbody>
</table>

*Significant (.05).

Since no significant differences were identified between the experimental and control group scores in grade 8 with respect to reading achievement, the null hypothesis was not rejected. A significant difference was found in favor of the control group in reading skills at grade 10, therefore, the null hypothesis at this grade level was rejected.

**Hypothesis #6** There is no significant difference between the personal and social adjustment of students in the experimental and control group.

An examination of Table 39 revealed pretest and post-test data relative to personal and social adjustment means for the experimental and control groups in grades 8 and 10.
Table 39. Personal and social adjustment means on pretests and posttests for grades 8-10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 8</td>
<td>48</td>
<td>99.9</td>
<td>89.8</td>
<td>10.1</td>
</tr>
<tr>
<td>Control for Grade 8</td>
<td>67</td>
<td>105.0</td>
<td>95.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>24.0</td>
<td>103.1</td>
<td>9.1</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>98.8</td>
<td>114.7</td>
<td>15.9</td>
</tr>
</tbody>
</table>

^Sample size reduced due to attrition.

The extent to which findings refuted the hypothesis that no significant difference existed between the experimental and control group regarding personal and social adjustment were outlined in Tables 40 and 41. Nonsignificant F-values of 1.3248 with df of 1 and 111 for grade 8 and 0.4751 with 1 and 43 df for grade 10 were reported.

Table 40. Analysis of covariance: Personal and social adjustment for grade 8

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>5945.00</td>
<td>5945.00</td>
<td>1.3248</td>
</tr>
<tr>
<td>Error</td>
<td>111</td>
<td>498099.00</td>
<td>4487.38</td>
<td></td>
</tr>
</tbody>
</table>
Table 41. Analysis of covariance: Personal and social adjustment for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>6688.00</td>
<td>6688.00</td>
<td>0.4751</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>675655.00</td>
<td>14076.10</td>
<td></td>
</tr>
</tbody>
</table>

Personal and social adjustment based on this investigation was unaffected by the treatment provided the experimental group in grades 8 and 10. The null hypothesis was not rejected since there was no significant difference between scores of the experimental and control groups.

Hypothesis #7 There is no significant difference between the self-concept of students in the experimental group and control group.

Self-concept means for the experimental and control students in grade 10 were reported in Table 42 for examination.

Table 42. Self-concept means on pretests and posttests for grade 10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>304.7</td>
<td>286.1</td>
<td>18.6</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>332.4</td>
<td>313.7</td>
<td>18.7</td>
</tr>
</tbody>
</table>
Although self-concept data were collected in grade 8, it was used as a pretest score to assess if initial differences existed between the experimental and control groups and could not be reported as findings in this study. An inspection of Table 43 which was generated by using pretest measures as one of two covariates, showed a nonsignificant F-value of 0.6602 with 1 and 48 df for grade 10.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>47.964</td>
<td>47.964</td>
<td>0.6602</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>3487.094</td>
<td>72.647</td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis was not rejected since there was no significant difference between the self-concept scores of the experimental and control group after applying analysis of covariance to the data for grade 10.

Hypothesis #8 There is no significant difference between the study habits and attitudes of students in the experimental and control group.

Pretest and posttest means for study habits and
attitudes are outlined in Table 44 for students in grade 10.

Table 44. Study habits and attitudes means on pretests and posttests for grade 10

<table>
<thead>
<tr>
<th>Group/Grade</th>
<th>N</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental for Grade 10</td>
<td>28</td>
<td>61.3</td>
<td>67.5</td>
<td>6.2</td>
</tr>
<tr>
<td>Control for Grade 10</td>
<td>24</td>
<td>75.0</td>
<td>70.4</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Data relative to study habits and attitudes were collected in grade 8 and grade 10. Measures obtained in grade 8 were used as one of two covariates but were not reported as findings in this study. They were used, however, in the analysis of the investigation. An examination of Table 45 revealed an F-value of 0.2758. An F-value of this size is not significant with df of 1 and 48.

Table 45. Analysis of covariance: Study habits and attitudes for grade 10

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>1</td>
<td>164.25</td>
<td>164.25</td>
<td>0.2758</td>
</tr>
<tr>
<td>Error</td>
<td>48</td>
<td>28578.75</td>
<td>595.39</td>
<td></td>
</tr>
</tbody>
</table>
The null hypothesis established for the experimental and control group relative to study habits and attitudes for grade 10 was not rejected.

**Hypothesis #9** There is no significant difference between the drop out rates of students in the experimental group and control group.

An examination of Table 46 revealed that 15 students dropped out of school before completing grade 10: five were experimental and 10 were control students. The expected frequency of drop outs for the experimental and control groups was determined to be fifty percent of 15 students or 7.5 students. A chi square value of 1.666 was obtained after the necessary manual computations were completed. With 1 df this chi square value was not significant at the (.05) level.

<table>
<thead>
<tr>
<th>Table 46. Chi square: Number of students who dropped school</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>(7.5)</td>
</tr>
<tr>
<td>Number of Drop-Outs</td>
</tr>
<tr>
<td>$\chi^2 = 1.666$</td>
</tr>
</tbody>
</table>
The null hypothesis was not rejected as no significant difference was found to exist between the number who dropped out of the experimental group and the control group at the end of grade 10.

Further Study of Students Who Dropped School

The school district identified 192 seventh grade students to participate in a program to determine the holding power of a compensatory work-study program as reported in Table 47. After completion of four years or grade 10, many of the original subjects had been lost to the program for reasons beyond the researcher’s control. Of the 96 experimental students, 18 moved to different schools within the city, 16 moved to other cities, five dropped out of school entirely, 12 dropped the compensatory program but remained in school, 16 transferred to other programs within the school district, 29 remained in the program for a period of four years and one lacked sufficient data and could not be used in the analysis.

A similar attrition rate was experienced with the control group. Of the 96 control students, 11 moved to other schools within the city, 16 moved out of the city to different communities, 10 dropped completely out of school, 31 elected not to continue as a member of the control group, 24 completed the required testing program, three students
Table 47. Status of students at the end of grade 10

<table>
<thead>
<tr>
<th>Status of Students</th>
<th>Total Number of Experimental Students</th>
<th>Total Number of Control Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moved to another school in city</td>
<td>18</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Moved to another city</td>
<td>16</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Dropped out of school</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Dropped program but not school</td>
<td>12</td>
<td>31</td>
<td>43</td>
</tr>
<tr>
<td>Transferred to another program</td>
<td>16</td>
<td>31</td>
<td>16</td>
</tr>
<tr>
<td>Completed program through grade 10</td>
<td>28</td>
<td>24</td>
<td>52</td>
</tr>
<tr>
<td>Incomplete data</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Deceased</td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>96</strong></td>
<td><strong>96</strong></td>
<td><strong>192</strong></td>
</tr>
</tbody>
</table>

did not take all the posttests and could not be used in the analysis and one student died.

A follow-up study was conducted at the end of four years to determine if the 15 students who had dropped out of school had been successful in finding employment since leaving school. This information was obtained by interviewing either the student or their parent. The results of the investigation are outlined in Table 48 and shows that of the five experimental students who left school: one was working, two were in correctional institutions and two were unable to find work. Although twice as many control students had
dropped out of school, they were more successful in finding employment as seven of the 10 drop-outs had found full-time employment and only three control drop-outs remained at home unable to find work.

Table 48. Status of students who dropped out of school

<table>
<thead>
<tr>
<th>Status of Students Who Dropped</th>
<th>Total Number of Experimental Students</th>
<th>Total Number of Control Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Joined the armed services</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Committed to penal institutions</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Not working</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>
CHAPTER V. SUMMARY AND CONCLUSIONS

Summary

One purpose of American education has been to develop within youth competencies which enable them to succeed in the world of work and assume responsible positions in the community. Generally, business and industry have considered a high school education as a minimum level of preparation for employment. Students who did not complete school, therefore, were not viewed as having the necessary credentials which enable them to become members of a highly technological society.

A review of the literature revealed that persons from disadvantaged backgrounds contributed significantly to the number of youth who finally dropped out of school. Although numerous reasons can be given as to why students did not remain in school, the two most prevalent causes for this occurrence seemed to be that students did not perceive school as being important and lacked motivation to continue their education. The issue facing school districts interested in developing drop-out prevention programs was whether attitudes and behaviors could be altered by some type of intervention program. After considering several alternatives, a decision was reached to develop a compensatory work-study program in Des Moines, Iowa. The program was implemented in
the fall of 1968 for selected secondary students. The major purpose of the program was to motivate students to a higher level of achievement and help them realize the merits of remaining in school.

The intent of this longitudinal study was to determine the effectiveness of a compensatory work-study program involving selected secondary students who were identified as working below grade placement, having little motivation to succeed in school and were viewed as potential drop-outs. The program provided students with a different academic program, additional guidance and counseling beyond that of the typical secondary schools in Des Moines and the opportunity to work for wages at age 14. More precisely, the study was designed to determine if participation in a compensatory work-study program was related significantly to attendance, punctuality, grade point average, teacher rating, achievement, personal and social adjustment, self-concept, study habits and attitudes and continued enrollment in school.

This investigation was initiated in September, 1968 and covered a period of four school years. An experimental group of 96 selected secondary students was identified in grade 7 to receive the experimental treatment. In contrast, a control group of 96 students was selected in grade 7 to receive the regular educational program of the secondary schools for the same four-year period. Data were collected
from standardized tests and cumulative records in grades 6, 7, 8, 9 and 10. Null hypotheses were formulated that no significant educational differences would exist between the experimental and control group as a result of the compensatory work-study program. Hypotheses were then tested by analysis of variance, analysis of covariance or chi square. A follow-up was made of students who dropped out of school prior to completing grade 10 to determine if they had been successful in finding employment.

An analysis of these data collected in grades 7, 8, 9 and 10 indicated the following:

1. There were no significant differences between the attendance of students in the experimental and control group in grades 8, 9 and 10. One exception was revealed in grade 7 when a significant difference was found to exist in favor of the control group. At no time were the mean days absent for the experimental group lower than the control group in grades 7, 8, 9 and 10. The range for mean days absent during the four-year period for the experimental group was a high of 17.4 and a low of 11.9, whereas, the control group recorded a high mean days absent of 12.4 and a low of 8.6.

2. No significant differences were observed between the punctuality of students assigned to the experimental and control group in grades 7, 8, 9 and 10. The only year experimental students were more punctual than control
students was in grade 8. The average number of times tardy recorded for the experimental group ranged from 10.3 to 4.3 and 7.9 to 2.4 for the control group during the four-year period covered by this study.

3. Grade point average did not differ significantly between the experimental and control group in grades 7, 8, 9 and 10. Four posttreatment means were collected for grade point average during the study. The grade point of the control group exceeded those of the experimental group every year with the exception of grade 10. The experimental group achieved a high grade point average of 2.8 and a low of 3.14 over the four-year period. The control group earned a high grade point average of 2.79 and a low of 3.46 during the period investigated.

4. The only significant difference found between the experimental and control group regarding teacher rating was in grade 9. The difference was in favor of the experimental group. No differences were found in grades 7, 8 and 10. The mean teacher rating was higher for the control group than the experimental group in grades 7, 8 and 10. It was possible to earn a high teacher rating of 7.0 and a low of 21.0 with the rating system used in this study. Teacher ratings for the period of this investigation ranged from a high of 9.1 to a low of 15.0 for the experimental group and a high of 12.6 to a low of 13.4 for the control group.
5. Academic achievement consisted of language, language study skills, social studies information, social studies study skills and reading. The only significant difference identified between the experimental and control group were in the areas of language study skills for grade 8 and reading for grade 10. Neither difference was in favor of the experimental group, however. The treatment, according to this analysis, had no effect on achievement of experimental students, and only once was the mean of the experimental group superior to the achievement mean of the control group. This was found when the social studies information mean in grade 10 was higher than that reported for the control group.

6. Personal and social adjustment of experimental students in grade 10 did not improve significantly from those of the control students nor were any of the posttest means for the personal and social adjustment higher for the experimental group.

7. Work-study combined with other compensatory efforts was unsuccessful in significantly changing the self-concept of experimental students when compared with control students in grade 10. The self-concept mean for the experimental group was also lower than one recorded for the control group at that grade level.

8. A comparison of study habits and attitudes in grade 10 for experimental and control students yielded no
significant difference. A review of study habits and attitudes means for grade 10 revealed that the control group mean was superior to that reported for the experimental group.

9. Overall, the compensatory work-study program designed to retain secondary students in school was unsuccessful in significantly altering the number of experimental students who dropped out of school. Although twice as many control students dropped out of school, the difference was not large enough to significantly favor the experimental group.

A finding not presented as a testable hypothesis was concerned with the success students had in finding employment after dropping out of school. A follow-up of these students revealed that seven out of 10 control students who dropped out and one of the five experimental students who dropped had been successful in finding employment.

Conclusions

This study was conducted on the premise that disadvantaged youth can be challenged to achieve academically and to remain in school. In addition, it was theorized that intervention programs can be instrumental in helping disadvantaged youth compensate and overcome educational handicaps they possess by providing an appropriate educational
climate and experience. Based on these assumptions, the following conclusions could be drawn relative to data collected on students who participated in this investigation:

1. The program was not effective in improving attendance, punctuality, grade point average, achievement, personal and social adjustment, self-concept or study habits and attitudes of students involved in this investigation.

2. Although a significant difference was obtained in favor of the experimental group regarding teacher rating in grade 9, no other differences were noted at other grade levels. Therefore, it must be concluded that the experimental treatment had little effect on improving teacher rating for the experimental group.

3. When compared to experimental students, it was found that twice as many control students dropped out of school at the end of grade 10. This difference was not statistically significant however, and cannot be viewed as an indicator of program success.

4. A statement concerning the number of experimental students who found employment as compared to control students would be speculative at best. Therefore, no conclusions were drawn relative to these data.

5. There was little evidence that this compensatory work-study program was effective in helping selected secondary students become more successful or to remain
in school despite the average expenditure of an additional $291.08 a student per year over a four-year period.

Limitations of the Study

Certain conditions existed that restricted the investigation from being a true experimental study. A number of uncontrollable limitations weakened the design and may have been responsible for providing a source of variation which was beyond the capability of the researcher to control. In using and interpreting the findings of this investigation, the following limitations should be considered:

1. Random assignment of students to the experimental and control group could not be achieved because there were insufficient students at any one junior high school that met criteria for inclusion into the program. Because of how students were selected, a discussion of the findings had to be limited to students participating in the study. It was impossible to generalize to the larger population and it reduced the applicability of the investigation for the same reasons.

2. The work experience component of the treatment could not legally be made available to students until they reached the age of 14 since child labor laws restricted the employment of minors. This meant that many of the younger students could not work for wages until they had
been in the program for a year, thus diluting a major component of the treatment.

3. A high attrition rate was experienced due to students transferring to other schools within the district, moving to other cities, taking advantage of other educational programs within the city or declining to participate after once being assigned to the experimental or control group.

4. There may have been too many components to the compensatory program making it difficult to determine what was responsible for the treatment effect should one be experienced.

5. It is well established that standardized tests are subject to measurement error. This study relied heavily on the scores of commercially developed instruments and such usage as a criterion variable was a limitation. The reliability of this investigation, therefore, is directly related to the extent to which tests utilized in this study accurately measured what was intended to be evaluated and to test-retest reliability of the various instruments.

Discussion

Many programs directed toward disadvantaged youth are based on the reversibility premise as was this compensatory work-study program. Essentially, the reversibility theory maintains that children coming from low socio-economic
backgrounds can overcome their deprivation and "catch up academically" with children coming from more affluent homes.

Statistically, it was impossible to generalize to the larger population from the selected sample of secondary students assigned to the experimental and control groups. It would be irresponsible, however, not to respond to whether assumptions of this study were supported and whether this study was in agreement with findings of comparable investigations reported in the literature.

Conceptually, this compensatory program was based on the assumption that: (1) disadvantaged students were capable of succeeding in school and would continue their education if appropriate incentives and measures were taken, (2) deprivation could be overcome, (3) intervention programs of this nature could compensate for educational handicaps and (4) being disadvantaged did not constitute a permanent barrier to learning. There was little if any evidence generated by this study that would support any of these assumptions. Students assigned to the experimental and control groups did not differ significantly in favor of the treatment of any of the variables with one exception. The findings of this investigation did not support any of the assumptions on which this study was based. This is not to say that individuals were not helped. It does mean, however, that as a group, these disadvantaged students did
not benefit significantly from the program.

This study provided no evidence that compensatory work-study programs are effective in helping disadvantaged youth to be more successful or to remain in school. There was evidence in the literature, however, that some programs were effective in helping disadvantaged students, other programs were not and some efforts were only partially successful. A few programs were successful in meeting some of the objectives while similar programs in other communities were successful in meeting objectives that others had failed to reach. Most compensatory programs involving work and study were uniquely different and there was little treatment consistency or success from program to program.

It is questionable that work-study programs similar to the one investigated in this study have really been successful in providing sufficient incentives to remain in school or to achieve at a higher level. Findings in this study and those reported in the literature were contradictory, however. If compensatory work-study programs were more uniform and investigations were longitudinal, school districts might have better information on which to base decisions regarding the effectiveness of compensatory efforts. Until that happens, there will continue to be doubts and uncertainty about the effectiveness of compensatory work-study efforts.
There appears to be mounting evidence that compensatory programs have not been effective in providing equal educational opportunities. It seems schools have not met the needs of the disadvantaged poor through compensatory programs, and maybe it is time to explore other alternatives which include changing peer groups and adding many more alternative programs from which parents and students can select. Perhaps, compensatory techniques are desirable in making school life better for teachers and more palatable for students, but they should not be expected to compensate to the extent that vast numbers of individuals will change their socio-economic level or that society will be significantly altered.

Recommendations for Further Research

The following recommendations were made to improve the experimental design in the event this study is replicated in the future:

1. Subjects should be randomly assigned to the experimental and control groups.

2. The opportunity to work should be provided at the beginning of grade 7 and made available in every secondary school.

3. The experimental treatment should be limited to the regular school program in the morning and work experience
in the afternoon.

4. Locally devised instruments (perhaps in criterion referenced form) should be developed so that test bias can be held to a minimum.

5. A personal reaction questionnaire should be developed and administered to all employers, parents, teachers and students associated with the program to determine attitudinal change if any.

6. A larger sample should be drawn so experimental and control comparisons can be made based on sex, ability, race and age.

7. All pretest data should be collected at the end of grade 6 and posttreatment data should be collected in three year intervals or at the end of grade 9 and 12 to coincide with the K-6-3-3 organization of schools.
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