A PROGRAM EVALUATION OF PROJECT GRADS:

A DROPOUT PREVENTION PROGRAM

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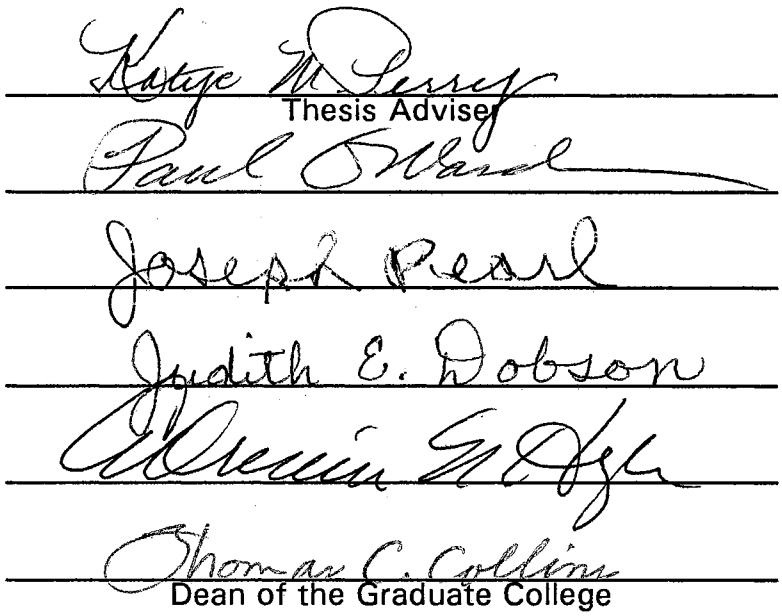

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CHAPTER I

INTRODUCTION

The youth of America are choosing to drop out of public schools at an alarming rate. Current estimates indicate that between twenty-five and thirty percent of students who begin high school do not finish (Center for the Study of Social Policy, 1991; Davis & McCaul, 1990; McDill, Natriello, & Pallas, 1985; Weber & Mertens, 1987). These percentages are equivalent to one million students per year leaving school early (Carnegie Council, 1989). The impact of the dropout population on society is greater than ever. The long range outlook was stressed by Mirochnik and McCall (1990) who quoted Esther Ferguson, Founder and Co-Chairperson of the National Dropout Prevention Fund (1987): "By the year 2020, the total population will be 265 million, of which approximately 50 million will be high school dropouts."

As the economy transforms from goods production to information processing, jobs are requiring higher levels of education (Fennimore, 1989; Guiton, 1989). The result is that businesses are no longer capable of absorbing large numbers of unskilled workers. As Mincer (1989) noted, high school completion will probably be a minimum expectation in the future

since analyses already suggest declining economic returns for a high school diploma as a terminal degree. Such trends leave high school dropouts with little hope for economic opportunity.

Background of the Study

Both the individual and society suffer negative consequences when a student decides to drop out of school. Research indicates that the effects of dropping out on the individual include lower academic skills (Alexander, Natriello, & Pallas, 1985); loss of income and unemployment (Bruininks, 1988; Catterall, 1985; Rumberger, 1987; Snyder, 1987; Wehlage, Rutter, Turnbaugh, 1987); and feelings of failure that can lead to personal difficulties, mental illness, and suicide (Brenner, 1976; Buxton, 1984; Clough, 1991). The effects of the dropout problem on society are equally ominous in terms of lost tax revenue (Clough, 1991; Levin, 1972) and social support costs such as welfare, health, and unemployment expenditures (Guthrie, Long, & Mergendoller, 1989; Rumberger, 1987).

The bulk of the dropout research has centered around identifying common characteristics among dropouts. The purpose of these investigations was to create a profile of the at-risk student that would aid with prevention efforts. This task has been difficult because the factors associated with dropping out are usually interrelated (Green & Baker, 1986).

However, the research that concentrated on dropouts consistently revealed the following characteristics (Wehlage & Rutter, 1986):

1. They are frustrated with school.
2. They have poor academic records.
3. They have discipline problems.
4. They are disadvantaged, both economically and socially.
5. They are often members of minority groups, particularly Native American, Hispanic, or African-American.
6. They have low aspirations and inferior self-concepts.

As the at-risk student profile evolved, the research began to focus on prevention techniques. Prevention/ intervention programs centered around school-related variables since they could be controlled, unlike the individual factors such as minority status and socoi-economic levels (Stern, Dayton, Paik, Weisberg & Evans, 1988). These programs claimed various degrees of success.

School districts that have initiated dropout prevention/intervention programs often encounter criticism from the public due to program expense. Many believe that it is not cost-effective to serve a handful of students. However, according to the U. S. General Accounting Office (U.S.GAO), "Addressing the problem through dropout prevention programs for at-risk youth still in school, and programs for return and continuation in school for

youth who dropped out, may be less costly than allowing the problem to go unattended" (1987, p.8).

These intervention programs have included pull-out programs aimed at remediation, alternative schools, school restructuring, improved vocational education, academic acceleration, and early childhood intervention (Mirochnik & McCall, 1990). Although most researchers agree that no single approach will work for all students, a few components have been consistently found in those intervention programs that have obtained a degree of success. They include small class size, program autonomy, a committed teaching force, nontraditional curricula, experiential education, and a positive atmosphere and supportive peer culture (Wehlage & Rutter, 1986).

In addition to the program components cited, vocational education has continually been reported to produce positive changes in student performance (Center for Field Research and School Services, 1973; Gifford, 1987; Weber, 1986). The premise behind the success of vocational programs is that vocational education renews the student's lack of interest in school and that the relevance of academics is demonstrated in a new context. Although Weber (1986) and Hamilton (1986) emphasized the success of dropout programs and the importance of a strong vocational emphasis, they also agreed; however, that vocational programs alone are not enough. Weber (1986), after analyzing over 200 factors related to

dropouts, recommended that dropout prevention programs need more extensive guidance and counseling, especially vocational counseling, extensive preprogram planning, and the development of educational plans for each student that are similar to the individual education plans (IEP) developed for persons with disabilities.

Program Description

Project GRADS was designed to demonstrate the success of a model dropout prevention program for rural areas. The major goals of the project were to reduce dropout rates and to increase the academic and vocational skills of high-risk students. The program goals were to be accomplished through the provision of a continuum of educational services in the area vocational-technical school and the feeder schools.

The model proposed was designed to meet the needs of potential dropouts through the provision of an array of services recommended in Weber's (1986) review. They include counseling and preplanning services, an individualized plan for each at-risk student, and a meaningful, relevant educational program through which each student could successfully acquire needed skills.

Project GRADS was based upon a model developed by Oklahoma Child Service Demonstration Center in 1974 to meet the needs of secondary learning-disabled students. The original program, Project ADAPT, was

validated by the Program Effectiveness Panel of the U. S. Department of Education in 1976 and recertified in 1984 and 1990. Since 1976, Project ADAPT has also incorporated techniques aimed at the at-risk learner. Project ADAPT is presently funded as a program for learning-disabled and at-risk youth through the U.S. Department of Education's National Diffusion Network.

Project GRADS began with the Project ADAPT model and integrated student services into the model to facilitate its adaptation into the vocational-technical program. The GRADS model consists of the following components:

* Intensive resource center environment -- to provide students with small class size, computer-managed remediation of basic skills, and tutorial assistance in a flexible, open atmosphere of successful learning.
* Adaptive teaching services -- to facilitate the at-risk student's success in the regular vocational program by informing teachers of specific areas of strength and weakness that relate to learning the vocational curriculum, and adaptive methods of teaching utilizing the student's interests and optimal learning styles.
* Counseling program -- both small-group and individual counseling was conducted; the counselor was available exclusively to project students to maintain a low student-to-counselor ratio.

* Auxiliary services -- encompasses other student services such as child care, summer for-credit program, follow-up tracking of program completers and noncompleters, and transportation.

The GRADS project was implemented at Central Area Vocational-Technical School (CAVT), which serves over 30 percent of the potential secondary population in its service area. This proportion is the highest in the Oklahoma vocational educational system. CAVT, whose main campus is located in Drumright, Oklahoma, offers training in twenty-three occupational areas to secondary students from sixteen independent school districts.

Purpose of the Study

The purpose of this study was to evaluate the effectiveness of Project GRADS, a dropout-prevention program for students identified as at risk of dropping out of school. The effectiveness of the program was determined in terms of its impact on at-risk students' dropout rates and academic and vocational skills levels. If successful, the program could provide rural educators with a replicable model to address the problem of rural dropouts.

Significance of the Study

The available research indicates that there is a need for a dropout-prevention program for at-risk students in rural areas. Because of the high concentration of students in the urban areas, that is where the majority of

research has taken place (Pallas, 1991). Yet, rural students are more likely to drop out of school and less likely to return than urban students (Children's Defense Fund, 1992).

Besides being more likely to drop out of school, rural dropouts are more likely to be unemployed and live in poverty than their urban counterparts (Children's Defense Fund, 1992). This trend will most likely continue since rural areas are dependent on the declining sectors of manufactured goods and natural resources.

For these reasons, dropout-prevention models need to be developed for rural areas. Why do we need a "rural" model? Why not replicate an urban model? Because urban models do not address the problems of isolation and lack of available resources that plague rural schools. Such factors make urban solutions ineffective for solving rural problems (Urban School Solutions, 1987).

Although programs have been described in the research as successful, usually by their graduation rates, little empirical data exist that distinguish the most successful from the least effective programs (Rumberger, 1987). To date, there has been little evaluation of dropout programs. This lack of accountability or conformity may be due to the autonomy of the individual school districts and their unique needs (U.S.GAO, 1987). Nevertheless, more research is needed to assess the effectiveness of these dropout-related programs (Rumberger, 1987).

Definition of Terms

1. Adaptive Services - Services included diagnostic assessment services, development of adaptive materials, peer coaching for staff, and student tracking.

2. At-risk Student - For the purpose of this study, an at-risk student is defined as a high school junior or senior who has been accepted at CAVT and who possesses one or more of five characteristics (overage, low GPA, excessive absences, credits needed to graduate, and number of courses failed) considered to place a student at risk of dropping out of high school.

3. Auxiliary services - Additional program services such as child care, summer for-credit program, follow-up tracking of program completers and noncompleters, and transportation.

4. Central Area Vocational Technical school (CAVT) - One of Oklahoma's 44 vocational-technical schools. CAVT provides instruction to students in eleventh and twelfth grades from sixteen feeder schools over a four- county area. Students attend CAVT for one-half day (three credit hours) and the home high school for the remaining three hours.

5. Dropout - The Oklahoma state dropout definition includes students who have not graduated from high school; who are not currently enrolled in a state or district approved program; and have not transferred, been suspended, expelled, excused due to illness, or died.

6. Graduate - A student who has obtained a high school diploma or an equivalent certificate.

7. Home School - One of the sixteen area feeder high schools from which the student originated. The program students attended the home school for one-half day (three credit hours) and CAVT for one-half day (three credit hours).

8. Program Evaluation - For this study, program evaluation refers to the goal-based criteria developed by Owens, (1988).

9. Resource Center - Located at CAVT, the resource center provided students with small class size, computer-managed remediation of basic skills, and tutorial assistance. GRADS treatment-group students were assigned to the center by project staff based on the student's TABE scores, grades, and vocational interest.

10. Rural areas - In this study, rural is used to mean nonmetropolitan areas - that is, all areas of the United States outside of metropolitan areas (central cities and suburbs) as defined by the Bureau of the Census.

11. Urban areas - A city of at least 50,000 population or a Census Bureau-defined urbanized cluster of at least 50,000 as well as a total metropolitan population of at least 100,00 (75,000 in New England).

Limitations of the Study

Subjects for the study were chosen by an index score that utilized the following variables: age, GPA, absences, credits needed to graduate, and number of courses failed. The students' level of "riskness" and group assignment was determined by this index score. The addition, deletion, or substitution of these factors could have resulted in different student' rankings that would have affected the students' eligibility for the program.

Assumptions

The following assumptions were made regarding this study:

1. The reporting of absences, grade point averages, classes failed, and credits needed to graduate was consistent among the schools involved in this study.
2. The demographic and student characteristics information in the CAVT's computer file for each participant was up-to-date and accurate.
3. Grading procedures were consistent enough to justify comparisons across classes and schools.
4. The three years the program was conducted and the sixteen participating schools were similar enough to justify treating both cohorts of students equally.

Organization of the Study

The study is organized in the following manner. Chapter I contains the background of the study, the description of the GRADS program, significance of the study, definition of terms, limitations, and assumptions. Chapter II consist of the review of the literature including social and individual consequences of dropping out, incidence, characteristics of a dropout, the need for a rural model, a description of alternative approaches, and the need for evaluation of dropout prevention programs. Chapter III includes a description of goal-based evaluation, description of the subjects, instrumentation, goals and objectives, procedures, data collection, and data analysis. Chapter IV presents the results of the data analysis and Chapter V will consist of the findings, conclusions, and recommendations.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter summarizes the current research on the problem of dropout prevention. It is organized under the following headings: (a) Social and Individual Consequences, (b) Dropout Incidence, (c) Characteristics of Dropouts, (d) Need for a Rural Model, (e) Alternative Approaches, (f) Need for Evaluation, and (g) Summary.

Social and Individual Consequences

The consequences of dropping out of school are not only detrimental to the individual but to society as a whole. If society does not take stock of this major issue, it is due to pay a high price in the future for its high school dropouts (Lawrence, 1986). Increases in unemployment, underemployment, welfare, loss of income, loss of tax revenues, loss in human productivity and resources, illiteracy, increased crime, and poorer levels of health are just a few of the many repercussions that may be felt by society if present trends continue (Lawrence, 1986; Levin, 1972).

Societal Consequences

The societal cost of the dropout problem are massive. Estimates of the loss of tax revenues alone have ranged from $75 to $150 billion each year (Clough, 1991; Guthrie, et al., 1989). Not only are dropouts less likely to contribute their fair share to the community, they are more likely to become a drain on the community's resource. Dropouts account for a significant portion of social support, including welfare, health, and unemployment assistance. Based on the research literature and cost data available at the time, Levin (1972) estimated the social costs of providing social services and fighting crime associated with dropping out at $6 billion per year. That figure should be substantially more today. "Dropouts enter our communities undereducated. With bleak prospects for success in the labor market, they are almost certain to become social liabilities and to face lifelong problems of unemployment and welfare dependency," (Wehlage, et al., 1987,p.70).

Individual Consequences

The costs of dropping out of school to the individual are equally high. The most immediate individual consequence of dropping out of school is the individual's low level of academic skills. Although graduating from high school does not ensure that a person has sufficient academic skills for successful employment and further education, failing to graduate usually

ensures that a person does not (Rumberger, 1986). Alexander, Natriello and Pallas (1985) assessed the achievement test score gains of a sophomore cohort from 1980 to 1982. Their findings confirmed that dropouts, on average, have lower academic skills than high school graduates and even those graduates of similar personal characteristics.

Because of their low academic skills, dropouts have difficulty finding employment that provides an adequate income. Census data reveal that the difference in expected life-time earnings, from age 18 to 64, between a male high school graduate and a male high school dropout in 1979 was more than 250,000 dollars (U. S. Bureau of the Census, 1983). Other reports have identified a similar impact on the dropout's loss of income. For example, Ranbom (1986) estimated that, by age 25, even employed dropouts earn only two-thirds of the income of graduates. The Governors' Study Committee on High School Dropouts and Unskilled Graduates (1981) supports this assumption. The committee estimated that the life-time income for a dropout is approximately 70 percent of the income earned by a male graduate who does not attend college.

According to the U. S. General Accounting Office Report (1988), 14 percent of male dropouts and 50 percent of female dropouts were neither employed nor looking for work, as opposed to 6 percent of male graduates and 20 percent of female graduates not attending college (cited in Tenth Annual Report, 1988). The opportunities for employment of high school

dropouts continue to decrease as the technology explosion requires higher levels of education. The availability of low-skill jobs, traditionally occupied by dropouts and unskilled graduates, will continue to decline as our economy moves from goods production to information processing (Guiton, 1989). Warnat (1988) estimated that low-skill jobs will comprise as little as 4 percent of available jobs by 1998. If current trends continue, dropouts will be shut out of tomorrow's high technology workplace and excluded from active participation in a complex democracy (U. S. Department of Labor, 1988).

Several studies have associated unemployment and loss- in-income with psychological well-being and health. In his 1991 address to the ASCD conference, Clough cited a recent Gallup Poll that found that 23 percent of the respondents with less than a high school education were dissatisfied with their personal lives; while only 14 percent of all respondents, and only six percent of college graduates, felt dissatisfied. Additionally, mortality rates, suicide, and mental disorders have been associated with unemployment (Brenner, 1976). Rumberger (1987) suggests that since dropouts experience a higher rate of unemployment, their tendency to suffer these individual factors may also be greater.

Dropout Incidence

The failure of high school students to succeed in the public school system is not a new occurrence. In 1900, 90 percent of all students dropped out of high school most often to join the ranks of unskilled labor (Mann, 1986). By 1959, less than half of the civilian labor force aged 18 to 64 were high school graduates (Stern, et al., 1988). At that time, secondary education was for the college bound and the U. S. economy could easily absorb the large numbers of unskilled workers. However, throughout the century, as the need for unskilled workers decreased, the number of high school graduates increased.

Over the 1950's and 1960's, the nation began to place emphasis on science education, social reform, and the role America's youth would play in the movement toward President Johnson's "Great Society" (McDill, Natriello, & Pallas, 1985). This national emphasis resulted in an 88 percent graduation rate by 1967 (Rumberger, 1986). Yet, recent estimates are that only 72 percent of the 18-19 year olds in the United States have completed high school. Of the remaining 28 percent, half were still enrolled in high school and half were classified as dropouts (U. S. Department of Education, 1990).

Calculation of Dropout Rates

The National Center for Education Statistics (NCES) reports three types of dropout rates. Each type of dropout rate measures a different facet of dropping out (NCES, 1992).

* Event rates measure the proportion of students who drop out in a single year without completing high school. Event rates are important because they reveal how many students are leaving high school each year and how each year's rates compare with previous ones.
* Status rates measure the proportion of the population who have not completed high school and are not enrolled at one point in time, regardless of when they dropped out. Status dropout rates are important because they reveal the extent of the dropout problem in the population and, therefore, suggest the magnitude of the challenge for further training and education that will permit these individuals to participate more fully in the economy and the life of the nation.
* Cohort rates measure what happens to a single group (or cohort) of students over a period of time. Cohort rates are important because they reveal how many students in a single age group (or in a specific grade in school) dropout over time. Cohort rates also allow the calculation of how many dropouts from the cohort eventually complete high school with a diploma or an alternative credential.

Figures 1 and 2 illustrate the changes in the event and status rates that have occurred between 1972 and 1991 (NCES, 1992, p. vii and ix). The event rates calculated for figure 1 indicate the event dropout rate has fallen over the last decade. In the late 1970s, the annual event dropout rate of 15- to 24-year-olds in grades 10 to 12 was over 6 percent. By 1991, this rate had fallen to 4.0 percent. This decline in the event dropout rate over the last decade occurred at each grade level and at each age. This decline is also evident in the event dropout rates for white and black students. Figure 2 represent the status dropout rates for persons 16-24. In 1991, 12.5 percent of all persons in this age group had not completed high school and were not currently enrolled in school. This percentage represents a decline from the rate reported in 1972 when 15 percent of this age group had not graduated (NCES, 1992).

The event and status rates reported by the NCES are computed from data obtained through the Current Population Survey conducted by the U. S. Census Bureau. The Census Bureau data and the high school attrition rate computed from state-level school enrollment data are the two most widely-cited dropout statistics. These two statistics report widely different dropout rates and probably represent the lower and upper limits of the true rate (Rumberger, 1986).

The U. S. Census Bureau information is obtained from population data collected in October of each year as part of the ongoing Current Population

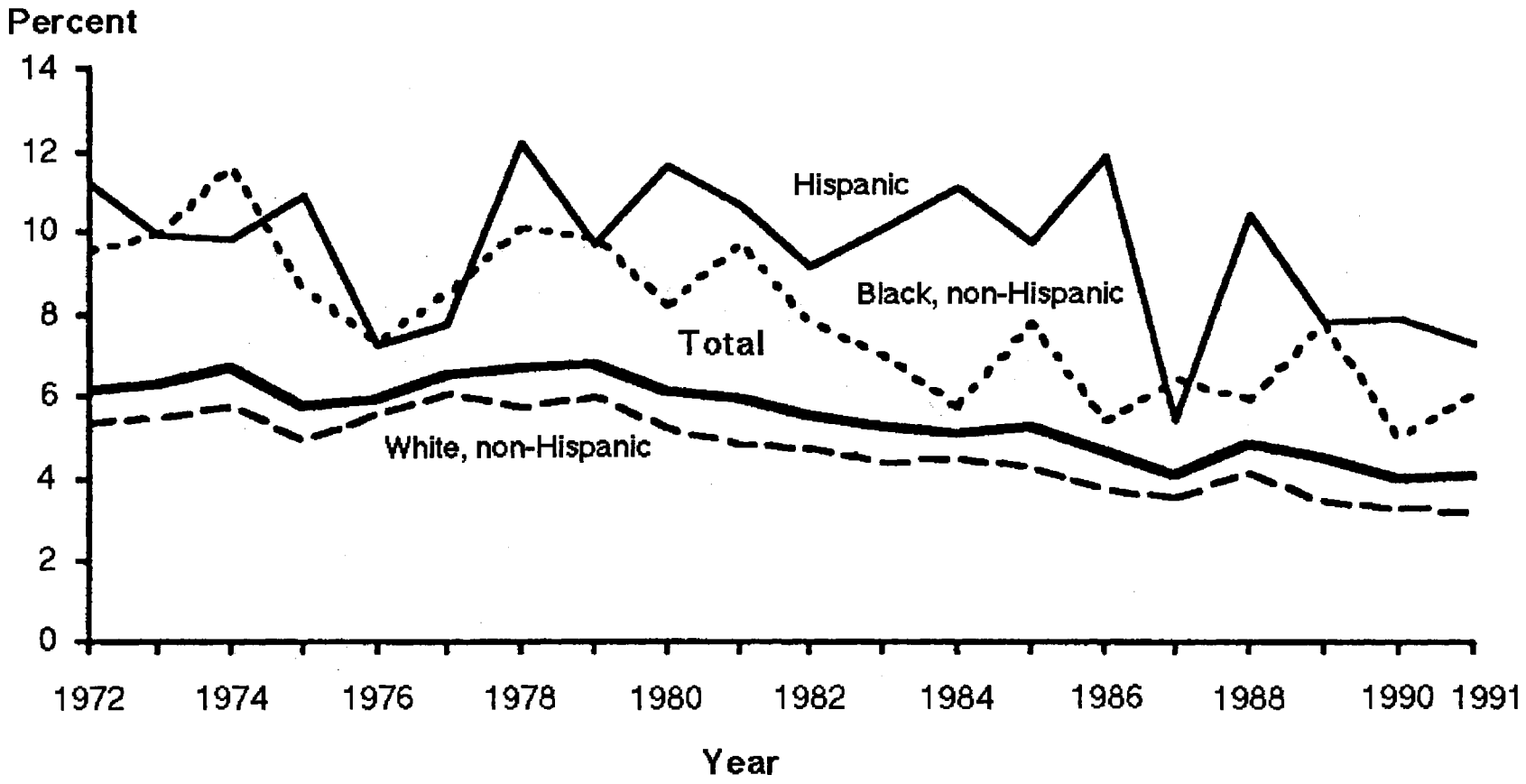

Figure 1. Event dropout rates for grades 10-12, ages 15-24, by race-ethnicity: October 1972 through October 1991

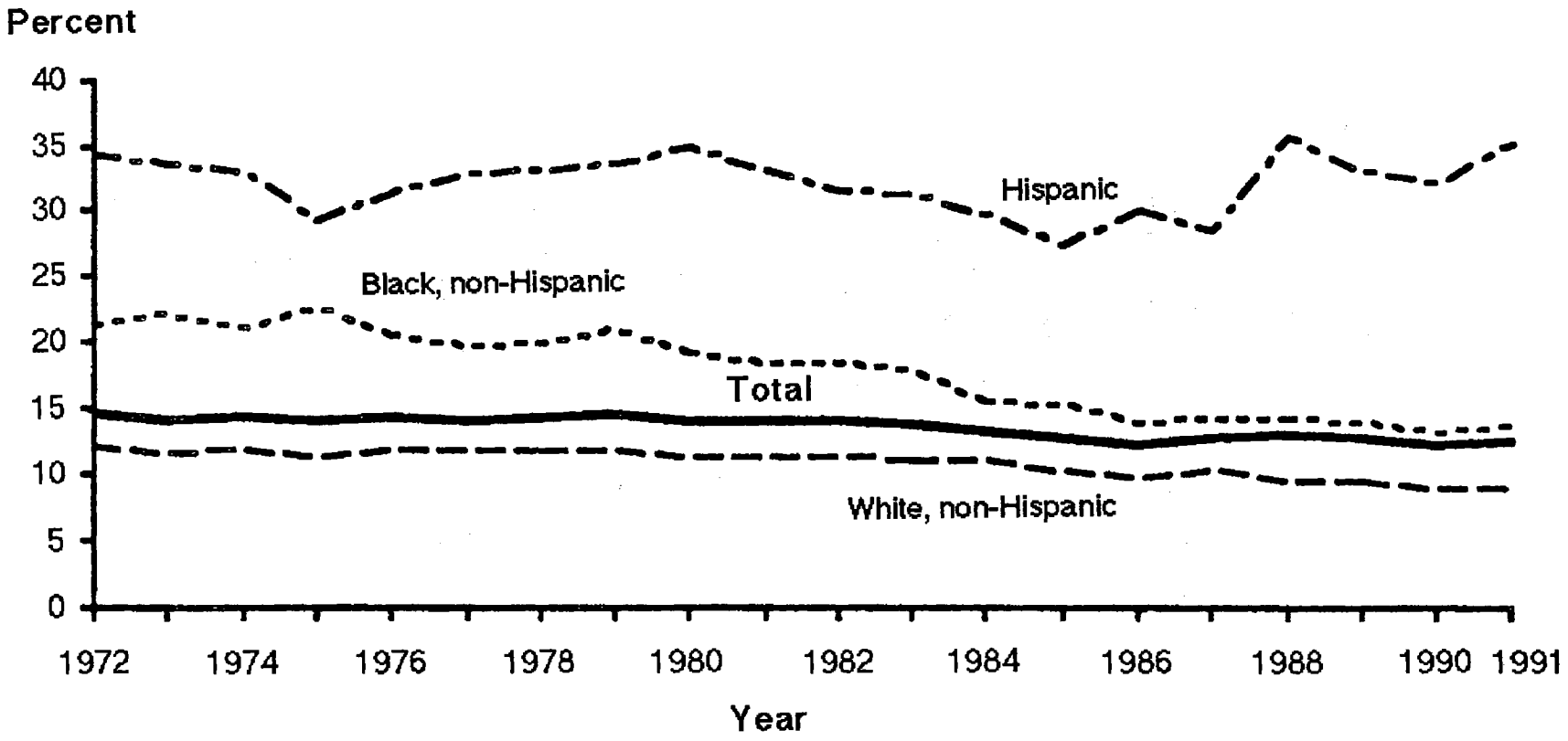

Figure 2. Status dropout rates for persons ages 16-24, by race-ethnicity: October 1972 through October 1991

Survey. Enrollment information is obtained about each member of the sample household. This information may often be inaccurate since it is secondhand in nature; that is, the parents surveyed may not know, or want to reveal, the actual enrollment or graduation status of their children (Rumberger 1986).

The high school attrition rate is calculated as the proportion of a given entering high school class, usually the ninth grade, that graduates four years later. These figures are collected at the state and local levels and averaged across states. One difficulty with this means of calculation is that those still enrolled, those holding high school certificates, and those who receive equivalent high school diplomas at a later date, are nevertheless counted as dropouts. Additionally, problems with this data include the dissimilar procedures used by districts and states to define dropouts (Cooke, Ginsberg & Smith, 1985).

The differences in the calculations were highlighted by Rumberger (1987) in his comparison of the U. S. Census reports and the U. S. Department of Education's attrition rates. Table 1 reports the Census Bureau data for 1968, 1980 and 1984. A dropout rate of 6.8 percent was reported for ages 16-17 and 15.2 for those 18-19 years of age. In contrast, the attrition rate (Table 2) for 1972 and 1984 reports a national average of 29.1 percent (Rumberger, 1987). One reason these two rates differ is that they were designed to answer different questions about dropouts. The

TABLE 1

DROUPOUT RATES BY AGE, SEX, RACE, ETHNICITY:
SELECTED YEARS, 1968-1984 (PERCENTAGES)

Cohort	1968	1978	1980	1982	1984
3 to 34-year-olds	18.3	12.9	12.7	12.7	12.6
white males	17.1	12.2	12.2	12.4	12.5
white females	17.3	12.4	11.9	11.9	11.7
black males	25.8	17.2	16.5	16.7	15.7
black females	25.6	16.2	16.2	14.9	15.0
Hispanic males	—	28.1	28.3	26.9	27.0
Hispanic females	—	29.0	27.3	27.3	26.7
18 to 19-year-olds	15.7	16.7	15.7	16.7	15.2
white males	14.3	16.3	16.1	16.6	15.8
white females	14.6	15.0	13.8	14.9	14.0
black males	23.8	25.8	22.7	26.4	19.7
black females	24.7	22.8	19.8	18.1	14.5
Hispanic males	—	36.6	43.1	34.9	26.2
Hispanic females	—	39.6	34.6	31.1	26.0
16 to 17-year-olds	7.8	8.8	8.8	7.3	6.8
white males	6.9	9.6	9.3	7.3	7.3
white females	7.6	8.7	9.2	8.0	6.9
black males	10.1	5.2	7.2	6.4	5.5
black females	14.2	9.4	6.6	5.5	4.9
Hispanic males	—	15.6	18.1	12.2	13.6
Hispanic females	—	12.2	15.0	15.9	12.7

TABLE 2

ATTRITION RATES BY STATE (PERCENTAGES)

State	1972	1982	1984	State	1972	1982	1984
U.S. average	22.8	27.2	29.1				
Alabama	34.6	32.9	37.9	Montana	21.0	17.8	17.9
Alaska	20.7	29.0	25.3	Nebraska	14.1	16.4	13.7
Arizona	26.2	27.6	35.4	Nevada	25.0	24.7	33.5
Arkansas	31.1	25.3	24.8	New Hampshire	19.3	21.7	25.8
California	20.1	31.1	36.8	New Jersey	20.3	21.9	22.3
Colorado	15.2	23.7	24.6	New Mexico	23.1	28.4	29.0
Connecticut	16.6	28.8	20.9	New York	25.3	33.7	37.8
Delaware	22.0	18.2	28.9	North Carolina	31.4	31.6	30.7
District of Columbia	45.2	44.2	44.8	North Dakota	11.0	12.7	13.7
Florida	27.9	34.6	37.8	Ohio	19.7	22.5	20.0
Georgia	35.2	——	36.9	Oklahoma	20.7	22.4	26.9
Hawaii	10.9	15.8	26.8	Oregon	20.8	28.3	26.1
Idaho	15.3	23.1	24.2	Pennsylvania	15.0	21.2	22.8
Illinois	22.0	25.2	25.5	Rhode Island	18.9	27.1	31.3
Iowa	10.5	14.2	14.0	South Carolina	30.8	35.7	35.5
Kansas	17.2	19.1	18.3	South Dakota	9.5	16.1	14.5
Kentucky	29.6	33.1	31.6	Tennessee	27.6	31.1	29.5
Louisiana	33.5	36.0	43.3	Texas	29.8	31.8	35.4
Maine	19.1	27.9	22.8	Utah	16.7	18.6	21.3
Maryland	19.8	24.4	22.2	Vermont	29.1	22.3	16.9
Massachusetts	22.1	24.1	25.7	Virginia	23.6	25.0	25.3
Michigan	19.0	27.3	27.8	Washington	16.1	23.1	24.9
Minnesota	8.5	10.8	10.7	West Virginia	28.1	25.2	26.9
Mississippi	42.4	37.0	37.6	Wisconsin	10.9	16.5	15.5
Missouri	22.5	24.6	33.8	Wyoming	16.9	21.7	24.0

Census data attempts to determine the number and proportion of persons from a given demographic cohort who are dropouts. The attrition data, which is constructed from enrollment and graduation information, is designed to reveal how well the education system is doing in graduating students (Rumberger, 1987).

Oklahoma's dropout problem resembles that of the nation. In 1990-91, 4 percent of students enrolled in grades nine through twelve dropped out of Oklahoma's schools. This was an increase compared to the 1989-90 event rate of 3.6 percent (Oklahoma State Department of Education, 1992). The dropout problem in Oklahoma, by county, is depicted in Figure 3. The status dropout rates in 1990 for adults 25 years and over are reported by years of education for each county. Statewide, a total of 25.41 percent of Oklahomans over the age of 25 did not graduate from high school. Those with less than a ninth grade education equalled 9.77 percent and 15.63 percent achieved a ninth grade education but did not graduate.

Dropout Definition

The dissention concerning the magnitude of the dropout problem revolves around one question: "What is a dropout?" The definition of a dropout is often the result of record keeping at local, state, and national levels. There is no consistent way of tracking dropouts in the public schools, state education agencies, or through the various national

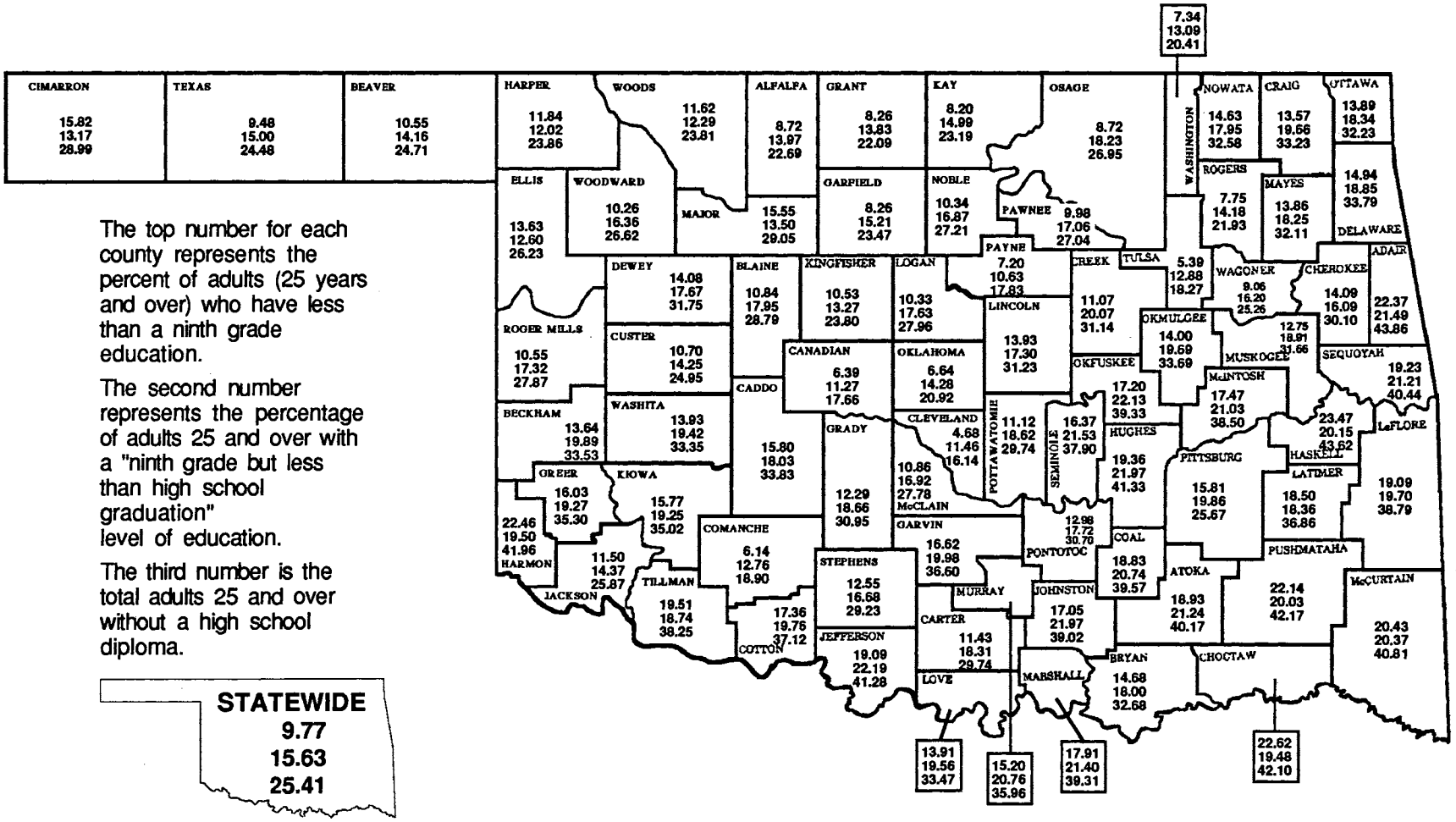

Figure 3. County education breakdown from 1990 census data complied by the Oklahoma Department of Libraries

organization compiling statistics (MacMillan, Balow, Widaman, & Hendrick, 1990). This situation leads to difficulty when trying to calculate the precise figure for the current national dropout rate (Wehlage & Rutter, 1986). In an effort to illustrate the frustration researchers have experienced, Mann (1986) cited the Phi Delta Kappa's Center for Evaluation, Development, and Research when The Center attempted to derive a consensus definition of a dropout:

> We simply cannot agree what a dropout is. In some districts death, marriage, taking a job, entering the armed forces, entering college early, being expelled or jailed, going to a deaf school, business school, or vocational school causes one to be considered a dropout. In another district none of these acts would be considered . . . There are at least as many different definitions of a dropout as there are school districts. Some districts have solved their problem of who to count as a dropout by not using any definition at all; whereas other districts had three or four definitions; and neither we nor they, seemed to know which one was used (1986, p.9).

In addition to the numbers of dropouts not reported due to confusion and oversights in the tracking system, many true dropouts are excluded due to individual districts' dropout definitions. Districts tend to define the dropout to correspond to the statistics they use to make their dropout rate appear low (Hammack, 1987). Moreover, school finances are often linked

to reports of average daily attendance or average daily membership. This encourages districts to carry students on the attendance rolls as long as possible (Morrow, 1986).

According to the Oklahoma statues, a dropout is defined as, " . . .any student who is under the age of eighteen and has not graduated from high school and is not attending any public or private school or is otherwise receiving and education . . ." (Oklahoma State Department of Education, 1992). Although Oklahoma has a statewide definition, a consistent method for tracking students has not been successfully implemented. In Oklahoma, students have traditionally been counted as dropouts only if they report to the school officials that they are dropping out, and follow-up to determine the true status of all students who leave school has been limited. For example, a student who reports that he/she is moving out of the district may be listed on reports as a transfer whether or not another school has admitted them.

In an attempt to define the magnitude of the dropout problem, a federal definition is currently being piloted by twenty-seven states, including Oklahoma. Various state and federal officials have reached consensus, agreeing that the new national definition should identify a dropout as a student who:

* Was enrolled in school during the previous school year but not enrolled at the beginning of the current year;

* Has not graduated from high school or completed a state-or district-approved program, and
* Has not transferred to another public-school district, private school, or state- or district-approved education program; been suspended, expelled, or excused from school due to illness; or died. (Snider, 1989, p.5).

Characteristics of Dropouts

What causes a student to drop out of school? Attempts to determine the characteristics of these students have been numerous and the results vary. In a report to a House of Representatives Committee on Education and Labor, the U.S.GAO described the difficulties encountered. "The causes of youth dropping out are often difficult to isolate and classify, because the factors associated with dropping out are usually interrelated" (U.S.GAO, 1987, p.14). The result is a variety of identification models. For example, Rumberger (1987) categorized factors into demographic, family-related, peer, school-related, economic, and individual. Alpert and Dunham (1986) identified school-related factors, personal factors, and familial factors. Researchers load the factors differently although most at-risk identification models contain the same characteristics in varying degrees of detail. For the purpose of this review, dropout characteristics will be discussed as either an individual\family characteristic or a school-related characteristic.

Individual\Family Characteristics

Poverty. The American Association of School Administrators (AASA) Survey listed poverty among the five top causes that put children at risk (AASA Critical Issues Report, 1989). In 1989, about 19 percent of all U. S. children under 18 lived below the poverty line. The rate varied by race, ranging from 14 percent for white children to 43 percent for black children (U. S. Department of Education, 1991). Pallas (1991) emphasized that minority students are more likely to experience the effects of poverty. "Black and Hispanic children are three to four times more likely to be living in poverty than non-Hispanic white children" (1991, p.9). According to Cardenas and First (1985), a child's educational future depends on his/her economic standing. Their research indicated that the income level of a child's family was the major determinant of the quality and quantity of education a child received. The average child from a bottom-quartile income family received four fewer years of education than a child from a top-quarter income family. In addition to receiving less education, these students were three times as likely to drop out as students of high socioeconomic status (U.S.GAO, 1986). The trend continues even after the student has dropped out of school. Students from low-income families are less likely to return to school or to get General Educational Development (GED) certificates than students from less impoverished backgrounds (Ranbom, 1986).

Minority status. Members of racial and ethnic minorities are much more likely to drop out of school than white students. Hispanics are twice as likely to drop out than blacks (Bruno, 1988), and the dropout rate for blacks is significantly higher than whites in the 18 and 19 year old age group (Valez, 1989). Few researchers agree on the reasons for racial/ethnic group differences. However, these differences are evident early in the student's school career. In a review of the literature, Pallas (1991) cited studies that found sizeable differences between minority and white students results on standardized achievement tests in the early grades. This trend continued and the discrepancy increased as the students progressed through school (Applebee, Langer, & Mullis, 1988; Dossey, Mullis, Lindquist, & Chambers, 1988). These studies indicate that the public schools are failing to meet the needs of these students early in their educational careers.

Mother's education. Census data for 1987 indicated that blacks and Hispanics made up a disproportionate number of the 13 million children under the age of 18 who lived with mothers that had not completed high school (Pallas, 1991). Mothers frequently are the only family members to try to manage their children's school careers. If the mother's school experience has been limited or negative, she may not emphasize educational attainment for her children to the same degree as a mother that graduated high school (Baker & Stevenson, 1986). Barro and Kolstad (1987) provided data to support this assumption. In their analysis of high school sophomores

participating in the 1980 High School and Beyond Study, nearly one-quarter of those sophomores whose mothers had not completed high school dropped out of school between 1980 and 1982; while only about 12 percent of sophomores whose mothers had completed high school or obtained some college dropped out over the same period.

Family composition. The family makeup has also proven to be correlated with early school leaving. More that 17 million children under the age of 18 lived in households without both parents present in 1988 (U. S. Bureau of the Census, 1989). Of these, more than three-quarters lived in households with just a mother present. This family composition often has a negative correlation with students' graduation from high school. "Some studies have shown that students from single-parent families are twice as likely to drop out of school as are students living with both parents" (Ranbom, 1986, p.16). In addition to the emphasis placed on education by the parent, other factors contribute to this finding. For example, children growing up in single-parent households frequently spend much of their childhood in poverty (Ellwood, 1988), and children of single parents tend to have lower academic skills. Natriello, McDill, and Pallas, (1990) analyzed third grade reading and mathematics achievement scores drawn from the 1986 National Assessment of Educational Progress. Their results indicated that children in homes where either a mother or a father was not present scored substantially lower than children living with both parents.

School-Related Characteristic

Student attitudes. How a student feels about school and what takes place in the school setting may be major determinants in the student's choice to drop out. Many students who drop out of school report that school is boring and a waste of their time (Barr & Knowles, 1986; Tidwell, 1985). In many cases, students do not believe that what is offered in school is relevant to their way of life. In a survey conducted by Rumberger (1987), 29 percent of the dropouts said they discontinued because they "disliked school"; (36 percent of white males, 29 percent of black males, 26 percent of Hispanic males, 27 percent of white females, 18 percent of black females, and 15 percent of Hispanic females). This study indicated that race did not play a role in students' decision to drop out but a difference was apparent between gender. Such studies that attempt to identify the factors that caused these students to "dislike school" has been the focus of most research.

Student alienation. Many researchers suggest that student alienation within the school setting is the primary reason for school leaving (Crossland, 1983; Lockwood, 1989; Morton, 1989; Valez, 1989). Although the student's feelings of alienation may arise from a number of individual and social factors, Crossland (1983) identified lack of contact with significant others within the school setting as the primary cause of school alienation. According to Crossland, the feeling of alienation is magnified by a lack of

positive involvement with peers at school, and a feeling of teacher disapproval, disinterest or prejudice. The result is that students perceive themselves as outsiders and behave in a manner that perpetuates that status. Finn's (1989) "participation-identification" model supports this theory. This model emphasizes the importance of a student bonding with the school experience early in life. According to Finn, involvement in school equals positive outcomes; where a lack of involvement starts the student toward a "process of disengagement."

Discipline problems. Students often exhibit behavioral or discipline problems as the disengagement process evolves. Velez (1989), termed these behaviors as "confrontational practices." These practices are meant to test the school's socialization effects which include submission, control, order, acceptance, and silence (Hodgkinson, 1985). Such behaviors include: absenteeism, truancy, acting out or fighting, talking back, arguing, disruptive and disorderly behavior, and in-school delinquency or criminal behavior (Pallas, 1984; Velez, 1989; Wallace, 1985). Whatever the behavioral problem, the sanctions imposed are most often the same: suspension or expulsion (Velez, 1989). Students who continually engage in these types of behaviors become prime candidates for dropping out. According to a 1983 study of dropouts conducted by Rumberger (1983), 9 percent of white males and 18 percent of black males listed being suspended or expelled from school as the reason for dropping out of school.

Absenteeism. For over a decade, the National Association of Secondary School Principals (NASSP) ranked student absenteeism as one of school's most serious problems. Besides the disruption to organization and the loss of money incurred by school due to excessive absenteeism, the effects on the individual are significant. Research indicates that a student's attendance record is one of the most accurate school factors in predicting early school leaving (Barrington & Hendricks, 1989; Holmes, 1983; McDill et al., 1985). The pattern of poor attendance appears to begin early in a student's school career. Research indicates that a student's attendance habits, as early as third grade, point to the youth's tendency toward dropping out of school in later years (Lloyd, 1978). For example, Barrington and Hendricks (1989) found in their longitudinal study that fifth-grade at-risk students attended school significantly less often than did students who succeeded in school. Moreover, Brinkley and Hooper (1987) discovered that attendance rates differed substantially between at-risk and non at-risk students: at-risk students' attendance rates averaged 80 percent, while those for non-at-risk students averaged 92 percent. Whether the reasons for poor attendance are family related, individual, or a symptom of disengagement from school, the results are the same. Students who are not in school do not have the same opportunity to learn as those who are in school.

Academic achievement. Studies indicated that students with poor academic achievement and low levels of basic skills are at risk of dropping out (Borus & Carpenter, 1984; Ekstrom, Goetrz, Pollack, & Rock, 1986; Wehlage & Rutter, 1986). The academic ability of third and ninth grade students was studied by Barrington and Hendricks (1989). The results indicated that the Otis-Lennon scores of dropouts were significantly lower than the expected average for that age group; while the scores for high school graduates were higher than normal. These results were supported by Berlin and Sum (1987), who interviewed nearly 12,000 youths over a seven-year period, found that students with low basic skills were nine times more likely to have dropped out school; and that this relationship held for all sex, race, and income groups.

Grade point average. A student's grade point average, coupled with other designated variables, is a valid indicator that the student may be at risk of dropping out of school (Elliott, 1988; Rumberger, 1987). A study performed by Barrington and Hendricks (1989) suggested that academic performance can be a reliable measure in identifying potential dropouts. They found that the pattern of low grade point average (GPA) and the number of F's received by dropouts between the 7th and 12th grades were significantly greater than those received by graduates and nongraduates who did not drop out. In the nationally representative High School and Beyond Study, 30 percent of the students who dropped out of high school between

the tenth and twelfth grades reported that poor grades were a reason for leaving (Ekstrom, et al., 1986). At the high school level, academic failure results in a lack of credits needed to graduate. Researchers maintain that students who have little hope of graduating because they have been retained one or more years or because they failed too many classes are likely dropout candidates (Tidwell, 1985; Widmann & Hoisden, 1988).

Grade retention. As with the appearance of other at- risk indicators, grade retention tends to occur early in the student's academic career (Binkley & Hopper, 1989; Schrieber, 1979; Trobb, 1985). Ranbom (1986) believes that the single best predictor of a potential dropout is that a student is held back before the eighth grade. According to a study conducted by the U.S.GAO (1987), 60 percent of dropouts surveyed were behind at least one year in grade level. Grade retention places the student in a position of leaving his\her peer group and fitting in with a cohort younger than him/herself. In a study of Chicago students, Hess and Greer (1986) found that 26 percent of all freshmen in the Class of 1982 were overage; and that of those, 61 percent dropped out, as opposed to 38 percent of normal-age-students. "The evidence suggests that, rather than helping children regain parity with their higher achieving peers, grade retention and tracking instead propel children further away from parity, by diluting the school curriculum and damaging the delicate social-psychological mix which motivates children to strive for success in school" (Pallas, 1991, p.16).

The characteristics discussed are highly inter-correlated. Rarely does a student possess only one of the characteristics, although any one may threaten the student's chance of school success. In an attempt to create a dropout profile, Wehlage, Rutter, and Turnbaugh stated:

> The picture we have of the at-risk student is that of a young person who comes from a low socio-economic background which may include various forms of family stress or instability. If the young person is consistently discouraged by the school because he or she receives signals about academic inadequacies and failures, perceives little interest of caring from teachers, and sees the institution's discipline system as both ineffective and unfair, then it is not unreasonable to expect that the student will become alienated and uncommitted to getting a high school diploma (Wehlage, et al., 1987, p.71).

Need for a Rural Model

Approximately one-quarter (15 million) of America's children live in rural areas as of March 1991. Seventy-five percent live in the Midwest and the South. These children face many of the same individual, family and school problems as their urban counterparts. According to a 1992 report by the Children's Defence Fund (CDF), " . . . rural children's problems are worse than metro children's, are worse than the suburban component of the

metro population, and often are close to, equal to, or worse than the problems of city-dwelling children" (1992, p., 4). In spite of the growing distress felt by rural students, they have been largely neglected. Pallas (1991) noted that the focus of research and intervention has been on the large concentrations of disadvantaging factors in the central cities, but that it would be a mistake to ignore the sheer numbers of at-risk children who live in non-urban areas.

Rural poverty. The problem with the most far-reaching effects, for both urban and rural children, is poverty. As discussed earlier, poverty is highly correlated with early school leaving. In 1990, rural children were more likely to live in poverty (22.9 percent) than nonrural children (20.0 percent). These figures place rural children at a higher degree of risk for dropping out than their urban counterparts. The rate of poverty in rural America has been on an upswing since the early 1970s. The Children's Defence Fund report (1992) emphasized that the problem continues to grow due to the steady economic decline. Because the rural poor consist primarily of the working poor, non-metropolitan poverty tends to be more sensitive to fluctuations in unemployment than urban poverty (Porter, 1989). The child poverty rate in 1973 was 16.6 percent and it had increased to 22.2 percent in 1989 (CDF, 1992). This trend of increased poverty in rural areas is likely to persist as negative economic factors continue to plague rural areas.

Rural economy. The economy of rural America has been in a constant state of transformation. For example, over the past two decades, service and manufacturing have replaced agriculture as the largest employers and service-sector and manufacturing jobs together now account for more that four of five jobs in rural areas (CDF, 1992). A possible explanation for this is that industry relocated in rural areas with the incentives of a "cheaper" workforce and lower input costs and this remains true today. Rural workers earn less than urban workers in comparable jobs. Specifically, the rural worker earned an average of 73 cents for every $1 paid by a metropolitan job. This trend was present across every type of industry. Additionally, when adjusted for inflation, the rural median income was slightly lower than it was 20 years ago (CDF, 1992). This force of low-wage and low skilled workers have already felt the impact of the infusion of technology employed by today's industry. As discussed earlier, low-skill jobs will comprise as low as four percent of available jobs by 1998 (Warnat, 1988). This trend has already affected rural areas. Unemployment levels now are higher in rural areas than in metropolitan areas (CDF, 1992). In 1979, the rural unemployment rate was 5.7 percent while in 1982, it had soared to 10.1 percent. In the early 1980s, the average rural unemployment rate was 7 percent higher than the urban rate; by 1987 it was 40 percent higher (Parker et al., 1989). It is evident that rural areas have greatly suffered from the effects of the recession as have the rest of the nation. However, unlike

metropolitan areas, rural workers have less opportunity for recovery due to the changing needs of the industries that have supported them in the past.

Rural dropouts. Many of the low-skilled workers that support rural industries are high school dropouts. The dropout rate in rural schools is similar to that of urban communities. Between 1987 and 1989, 13.4 percent of rural students and 12.4 percent of urban youth were out of school without a high school or equivalent degree. However, the difference between rural and urban students is apparent in the number that corrected their dropout status later. The High School and Beyond study tracked the school completion history of sophomores in 1980. Of those rural students who had dropped out by 1982, only two-fifths finished school or obtained a GED compared to almost one-half of urban dropouts (CDF, 1992). The disparity between this "recovered dropout" statistic is telling. Although rural and urban students drop out at a similar rate, rural dropouts do not have the same access to services as do urban dropouts. The result is that rural dropouts are not allowed the same opportunity to complete their high-school educations.

Rural schools. The rural economy has resulted in poorer schools that must face higher costs with lower revenues. This degree of decline is easily perceived when rural schools are compared to urban schools. In the 1984-85 school year, for example, urban states outspent rural states by almost $800 per pupil (Reid, 1988). This contrast in funds may account for the

lack of programs that are available for needy students in that only one in four rural schools has a non-traditional alternative school program compared with half of suburban schools (CDF, 1992).

Besides the lack of funds available, the problems of isolation and lack of community services also affect rural education. Many rural districts have been forced to offer a narrower range of courses and fewer advanced classes. The quality of education in these districts is also affected. Rural teachers have less experience, less training, and higher rates of turnover than teachers in urban schools (CDF, 1992; Willis, 1987).

The challenges faced by rural school districts are unique. Subsequently, a rural district's approach to resolving the dropout problem must also be unique. Because of administrative, curricular, and staffing differences, solutions to educational problems that are effective for metropolitan districts are inappropriate for rural education (Urban School Solutions, 1987).

The GRADS model. Project GRADS attempted to meet the needs of rural schools through a continuum of services. By transporting students from 16 different school systems to one site, the maximum number of students are served. The CAVT site supplements the curriculum of the feeder schools by offering over twenty vocational-technical courses from which students may choose. A portion of these courses may be counted as a math or science credits toward graduation.

The GRADS model also provides students with access to a summer school program. This program allows students from the feeder schools to gain credit for classes that they may have failed at their home school. Transportation is provided by GRADS. Many students that would have normally fallen behind their cohort are provided the opportunity to "make-up" credits. Only 4 of the 16 feeder schools offer summer school services to their students, 3 of which only offered English. The majority of feeder schools cited budget limitations as the reason for not offering this service.

Perhaps the most important offering of the GRADS program to rural school students is the access the students have to counseling services. Oklahoma has a shortage of counseling services in the schools. This shortage confines most school counselors to career exploration and emergency situations. The counseling component of the GRADS project provides program students with constant monitoring and group counseling as well as individual counseling that allows students the time and opportunity to explore personal, family, and peer relationships.

Alternative Approaches

The literature contains numerous studies and reports on the various approaches employed in the effort to prevent students from dropping out. This multitude of research extends from the effort to address the multi-faceted needs of at-risk learners. Most researchers agree that no one model

or program will work in all school systems and no one approach will work for every student (U.S.GAO, 1990; Greene, 1986; Hahn, Danzberger, & Lefkowitz, 1987; Wittenberg, 1988).

In his 1990 review of dropout prevention and intervention programs, Thunell(1990) grouped these programs into seven types or categories: teacher and administration training, community-based programs, self-esteem and attitude-improvement programs, extra-curricular and remediation programs, alternative schools and schools within schools, in-school prevention/intervention programs, and career and vocational training programs. Thunell also noted that many programs used a combination of these approaches in order to address the varied needs of students.

Staff training. According to Thunell, teacher and administrative staff inservice programs focus on changing staff attitudes and perceptions about dropouts. As discussed earlier, many dropouts reported feelings of alienation at school. Therefore, these staff inservice programs assist teachers and administrators with the skills needed to build positive and constructive relationships with the high-risk student. Moreover, teacher training was cited as a necessary component by Wehlage, Rutter, and Turnbaugh's (1987) model program based on a previous analysis of successful alternative programs. Wehlage and colleagues noted that reversing the alienation felt by high-risk students must begin with the establishment of a positive social bond between teachers and students

(1987, p.71). According to Rhodes and McMillan (1987), teachers and staff that are well trained in understanding the student-at-risk phenomenon and are committed to help are the key to a successful program.

Community-based programs. Community, private business, charitable, and religious organizations have also addressed the dropout problem through prevention and intervention programs (Thunell, 1990). Although these entities developed their own programs, they often worked with the school district for implementation. Community and business involvement are consistantly recommended by successful programs (Cuellar & Cuellar, 1990).

Attitude-changing programs. Programs that set out to improve the student's self-esteem and attitude are another category identified by Thunell. These prevention programs attempt to evoke behavioral changes as a result of emotional or attitudinal change. Thunell (1990) cited examples such as rational-emotive education, assertiveness training, study skills training, and self-management training (Wallace, 1985; Phelan, 1987). These programs attempt to motivate the student to participate in their own learning processes and reach their potentials.

Basic skill remediation programs. Remediation of basic skills is a component of most programs, according to Thunell (1990). The primary difference between the programs is apparent when instruction takes place. Summer programs, weekend retreats, and evening help sessions are often

cited. These programs allow the student the opportunity to "catch up" without removal from their normal school schedule. Although remediation of basic skills (usually reading) is common to most programs, the way in which to remediate is not agreed upon. The traditional approach of drill and practice is not considered a successful practice by most researchers of intervention or prevention programs, although the practice is routinely found in the classroom. Instructional strategies should actively engage the student in learning and instruction should be individualized, particularly in math and writing, to adapt to students' learning style (Cuellar & Cuellar, 1990; Hamby, 1989; Institute for Educational Leadership, 1986; Wehlage, et al., 1987).

Alternative schools. Alternative schools are designed to take students out of the environment in which they are failing and place them in an insulated environment. According to Thunell (1990), it is the isolation of these programs that results in success. Once the student is removed from the troubling environment, academic curriculum can be suspended while language literacy and survival skills are developed (Driscoll, 1985). The primary drawback of this approach is that once the student is returned to the home school, often the troublesome behaviors return as the student relies on old coping skills (Driscoll, 1985). Alternative schools are most successful when students remain in the program rather than return to their home schools.

In-school prevention/intervention programs. Thunell (1990) defines in-school prevention/intervention programs as those which leave the student in the traditional setting but provide him/her with the skills needed to cope in that setting. In the past, these programs were often single-faceted, relying on counseling or reward systems as tools for extinguishing inappropriate behaviors. More recently, Thunell noted collaboration programs in the literature. Approaches have included full-scale school-based collaboration and advocate matrices. According to Thunell's research, these programs that coordinate the efforts of school, community and parents may be the most effective.

Career and vocational training programs. The last category defined in the literature according to Thunell (1990) is career and vocational training programs. These programs provide at-risk students with job skills while they complete their high school diploma. Self (1985), in a review of dropout characteristics and retention programs, reported that vocational education was among the most frequently used strategies. Additionally, the Urban Superintendents' Network of Educational Research and Improvement (OERI, 1987) identified career training skills as a major thrust for addressing the dropout problem. These studies and others promoted the idea that the vocational component provided the student with the interest and motivation to complete high school.

Each of the Thunell's intervention/prevention categories addressed the dropout problem from a different perspective. However, common program characteristics can be found across the approaches. This is due to the need of programs to address the multi-faceted demands of the at risk student. The results have been an influx of research to find those components that significantly contribute to a successful program. The following is a list of the most commonly cited characteristics of a successful program:

1. Program autonomy
2. Small class size
3. Nontraditional curricular
4. Teacher commitment
5. Positive atmosphere
6. Community - vocational program
7. Counseling and mentoring

(Baherman & Kopp, 1988; Fennimore, 1988; Hamby, 1989; Institute for Educational Leadership, 1986; Lotto, 1982; Mills, et al., 1988; Wehlage & Rutter, 1986).

After reviewing the dropout intervention and prevention literature the U. S. General Accounting Office concluded:

> Because most youth have multiple problems, programs must offer multiple services. Not every youth needs the same interventions, but

most of those at-risk apparently require some type of basic education, counseling, and other support services.

. . . certain program elements are strongly related to program success--namely, a caring and committed staff, a safe and secure learning environment, personalized instruction, a low student-teacher ratio, and program flexibility, such as in hours and curriculum (1987, p.31).

Need for Evaluation

The school reform movement of the past decade has demanded that the nation's public schools be responsible for providing all students the opportunity to learn. In the case of those students at risk of dropping out of school, this has meant providing services, alternative methods, or programs that are new to the traditional school structure. The need for accountability that has accompanied the school reform movement has not been routinely applied to these prevention programs. The U. S. Government Accounting Office (1987) noted after a study of dropout prevention/ intervention programs, " . . .there is a lack of evidence to establish definitively the approaches that are effective in reducing the number of dropouts" (1987, p.20). Rumberger (1986) concurred, " To my knowledge, no systematic evaluations of dropout programs have yet been done where both the effectiveness and costs have been fully evaluated" (1986, p.14). Rumberger goes on to cite Rossi, Freeman, and Wright (1979), "While

descriptive reviews of programs are helpful in designing effective interventions, systematic evaluations are needed to determine both the effectiveness of dropout prevention and recovery programs and their costs" (1986, p.14). By evaluating these programs, not only are the accountability needs of the program met; but also, valuable information is provided to school administrators. The National Dropout Prevention Center (1992) cited several reasons why such programs should be evaluated:

* to measure the strengths and weaknesses of the program and implement the appropriate changes;
* to measure student outcomes;
* to establish credibility for the program;
* to provide a rationale for continuation of funding or system support; and
* to document the process of program implementation for replication.

Summary

A significant number of the students attending our public schools are not experiencing success. These students are choosing to drop out of school in record numbers. The result is an increase in the unskilled labor force at a time when industry demands the skills of technologically advanced workers.

Many "types" of students dropout of school for many reasons. Consequently, researchers have not been able to pinpoint one cause or reason for the failure to complete school. Instead, a combination of individual and school factors have been identified by dropouts. Because the factors are closely related, the dropout usually possesses more than one of the factors. The result is a model of a dropout who is a poor, minority student from a broken home where the mother did not graduate from high school. While at school, the student feels alienated, and engages in acting out behaviors. The student has a history of poor academic skills which resulted in a low GPA and grade retention early in his/her school career.

The majority of research has taken place in the urban setting where the concentration of at-risk factors are more present. However, the same problems affect students in rural areas, often to the same degree. Although rural areas are in the same predicament as their urban counterparts, they are not able to address student needs in the same manner as urban schools, primarily due to the lack of resources. The goal then for rural schools is to develop an alternative program that contains proven components while utilizing the services that are available in a rural setting. The GRADS project was an attempt at such a program.

In the past, these programs have received little systematic program evaluation. The literature is filled with descriptions of alternative programs but little assessment of their effectiveness is noted. Evaluation of the

GRADS project was needed in order to determine the effectiveness of the program as a whole as well as its components. Through evaluation, the program's strengths and weaknesses may be assessed and barriers to replication may be identified.

CHAPTER III

METHOD

The purpose of this study was to evaluate Project GRADS, a dropout intervention program for rural, at-risk, junior and senior high school students. The requirements of the funding sources largely determined the program goals. The program goals were to be met through the implementation of the program components. Each of the program components was to be evaluated along process and outcome data. Because this study was a program evaluation, rather than an experimental method, the hypotheses were stated in the form of goals and component objectives.

Goal-Based Evaluation

The goal-based evaluation section will include a rationale for the selection of this type of evaluation and a description of goal-based evaluation.

Rationale for the Evaluation Model

Although a project such as GRADS could have been evaluated according to a number of evaluation models, the fact that it was a federal

grant recipient limited the options. The Request For Proposals (RFP) stated that the plan of operation of the proposal should be in a goal / objective format so that the project produces data that are quantifiable. Such requirements are common by federal agencies that must meet the needs of accountability. Although several objective-oriented evaluation approaches have been developed, Owens' model was selected for this investigation because of his extensive work in the evaluation of educational programs in vocational-technical settings.

Description of the Goal-Based Model

The program was evaluated according to the goal-based evaluation model suggested by Owens (1988). The purpose of a goal-based evaluation, according to Owens (1988), is:

> to examine the project's goals and objectives, assess how well a project has met those objectives, and determine the impact they have produced. This approach provides a rational guide in deciding what to examine and reduces the likelihood that evaluators will overlook intended outcomes. A quality goal-based evaluation should examine not only whether a set of goals and objectives have been accomplished, but the relevance and adequacy of the goals and objectives, how they may be modified over time, and the full range of

outcomes observed, not just those specified in advance for the project (1988, p.142).

Owens (1988) suggested that the process of a goal-based evaluation should encompass seven components. The following is a brief description of those components:

(1) Objectives. Each objective should specify who will be responsible for performing various tasks and what standard will be used in determining successful accomplishment of the objective.

(2) Information sources. Information sources are the people from whom the information will be collected. Such sources may include students, parents and staff.

(3) Instruments or data collection processes. This refers to the means used to obtain project information. Such sources may include standardized assessment devices, questionnaires or interviews.

(4) Design. The design specifies the groups to be tested and the frequency of collecting the data, such as a pre- and post-test design.

(5) Time schedule. The time schedule is the actual time period during which task will be performed and information will be collected.

(6) Analysis. The analysis describes how the data were recorded, coded, and statistically analyzed.

(7) Reporting. The reporting component identifies audiences, format, and timing for presenting the results of the evaluation.

Subjects

This section includes demographic information of the feeder schools, a description of how students were selected for the study, a description of how students were selected for treatment groups, and descriptive statistics of each of the groups on the variables by which they were selected.

The program under which Project GRADS was funded required participation in an evaluation by federal contractors. Ten dropout prevention programs (including GRADS) were selected for the evaluation. These ten projects were requested to select program participants in the same manner.

Feeder Schools

Subjects were selected from the pool of sixteen feeders schools that have contracted with CAVT for services. Table 3 lists the sixteen schools, their city populations, the per capita income reported for that city, the school's average daily membership (ADM), the number of Project GRADS students from each site and the reported event dropout rate (the number that dropout in a single year) for each of the school districts. Examination of Table 3 indicates that the majority the cities in which the districts are located are small and rural (i.e. not contiguous to a central, urban city). Only one the cities has more than 10,000 residents. The per capita income in these cities range from $7,577 to $11,783. Of the sixteen districts participating, ten have fewer than 1000 students in grades K - 12. Most importantly, the reported dropout rate of these schools range from 0.7% to

TABLE 3.

FEEDER SCHOOL STATISTICS FOR 1990

	City Population	Per Capita Income	School ADM	Cohort Two Participants	Event Dropout Rate
Bristow	5,700	7,834	1,630	22	4.0%
Cleveland	3,200	10,237	1,544	15	4.9%
Cushing	8,700	9,724	1,902	7	3.4%
Davenport	1,100	7,873	408	2	1.7%
Depew	750	8,168	376	7	0.7%
Drumright	3,500	8,905	559	9	7.2%
Kellyville	1,200	8,403	1,146	11	2.0%
Kiefer	1,050	9,574	456	3	2.2%
Mannford	1,900	11,339	1312	15	2.2%
Mounds	1,350	9,575	627	2	3.7%
Oilton	1,150	7,577	293	7	12.2%
Olive	n/a	n/a	380	4	1.6%
Ripley	450	7,938	437	1	5.2%
Sapulpa	17,900	11,783	4,115	16	3.0%
Stroud	3,300	8,820	785	11	0.9%
Yale	1,800	7,647	566	7	2.3%

Information provided by the Oklahoma Department of Education's School Indicators Report and the Oklahoma Department of Libraries.

12.2% with six of the school reporting rates higher that the state average of 3.5% in 1990. The demographic profile of the schools involved in the study indicate that the students are from small, rural cities with low tax bases and problematic dropout rates.

Assignment of Subjects

Originally, program participants were selected from a pool of students who had met the entrance requirements of CAVT. Although many students at risk of dropping out of school were eligible for and accepted in CAVT, higher-risk students, who had failed more core courses, were eliminated from this pool by the CAVT screening process. The screening criteria included having enough credits to be a eleventh grade student, attendance records, GPA, and an interview by CAVT staff.

The first cohort of juniors entered CAVT during the 1989-90 school year. The second cohort entered during the 1990-91 school year. Because CAVT relaxed the entrance requirements during the second year of funding and admitted more students that did not meet the traditional entrance requirements, the second cohort of students were considered to be more at risk than the first cohort of students. Cohort two students that would not have been normally accepted were given special consideration if sponsored by their home school counselor or if they appealed to CAVT for an interview.

For this reason, the second cohort students were thought to be more at risk than the first cohort and were select for this study.

Data on all incoming eleventh grade CAVT students were collected from the home high schools. Data collected included variables customarily measured in dropout prevention programs because of their high correlation with school success. These data included the students' ages, grade point average, absences, credits needed to graduate, and number of courses failed. This information was used to rank students according to an "at-risk" index score. This index was a linear combination of standardized scores on the five variables listed above. The federal evaluation contractors randomly assigned those student considered to be at-risk to either the treatment or control groups. A total of 47 cohort two students were assigned to the treatment group and 48 to the control group.

A third group called "normals" was also formed. The normal group consisted of students who were admitted to CAVT but were not identified as at-risk according to the index score. The normal group was added to the analysis in order to assess the progress of the treatment group. If the goals of the project were realized, the treatment students would show improvement in their GPA and number of absences as treatment students' level of at-riskness decreased, and these students would more closely resemble normal students. A total of 49 cohort two students were assigned to the normal group.

Treatment vs. Control vs. Normals

The following section compares the three groups according to the at-risk index score variables. Table 4 presents the mean scores for each of the groups on each of the at-risk index variables discussed. The means reported represent each group at program entrance.

TABLE 4

AT-RISK INDEX VARIABLE MEANS BY GROUP MEMBERSHIP.

	Treatment	Control	Normals
Age	16.89	16.87	16.45
GPA	1.84	1.79	2.62
Courses Failed	1.02	1.45	0.07
Credits Needed	10.17	10.36	9.16
Absences	12.78	12.16	5.73

Age. The groups had an age range of 14.9 to 18.9. The treatment group students had a mean age of 16.89, with the following distribution: 3

fifteen year olds (6%); 24 sixteen year olds (51%); 19 seventeen year olds (41%); and 1 eighteen year old (2%). The students in the control group had a mean age of 16.87, with the following distribution: 31 sixteen year olds (65%); 15 seventeen year olds (31%); and 2 eighteen year olds (4%). The normal students had a mean age of 16.45, with the following distribution: 1 fourteen year old (2%); 5 fifteen year olds (10%); 40 sixteen year olds (82%); 2 seventeen year olds (4%); and 1 eighteen year old (2%). The number of months the student was overage at the beginning of the school year was calculated according to the following criteria: Eleventh grade = 17 years and twelfth grade = 18 years. For example, a eleventh grade student who was 18 year and 2 months would be 14 months overage.

Grade Point Average (GPA). Grades were assigned on a four point scale with 4.0 = A and 0.0 = F. The mean GPA for the treatment group was 1.84 on a four point scale. This GPA was calculated for the school year prior to CAVT entrance. Student GPAs ranged from 0.43 to 2.78. The control group mean GPA was 1.79. The control group GPAs ranged from 0.71 to 3.17. The normal group mean GPA was 2.62. The normal group GPAs ranged from 1.57 to 3.77. Once the student had begun the program, the student's GPA was recorded in terms of CAVT GPA, home school GPA, and combined GPA.

Courses Failed. The mean number of courses failed for the treatment group was 1.02. The number of courses failed for each student ranged from 0.00 to 4.50. The control group mean courses failed was 1.45 with a range of 0.00 to 8.00. The normal group mean courses failed was 0.07 with a range of 0.00 to 0.50. The number of courses failed were calculated for the year prior to CAVT entrance.

Credits Needed to Graduate. The mean credits needed to graduate for the treatment group was 10.17. The number of credits needed to graduate for the treatment group ranged from 8.00 to 14.50. The control group mean was 10.36. The control group credits needed to graduate ranged from 8.50 to 14.50. The normal group mean was 9.16. The normal group credits needed to graduate ranged from 7.50 to 11.00. The number of credits needed to graduate was assessed at the end of the students' tenth grade year and then on a semester basis once the program began operation.

Absences Absences for the semester prior to CAVT were collected. The mean absences for the treatment group was 12.78. Student absences ranged from 1.00 to 113.00. The control group mean was 12.16. Number of absences for the control group ranged from 0.50 to 32.00. The mean absences for the normal group was 5.73. Student absences in the normal group ranged from 0.00 to 24.00. The number of absences for each student was calculated for the tenth grade year. Absences were reported

during the program period on a semester basis and were recorded as CAVT absences, home school absences, and combined absences.

Instrumentation Outcome Variables

The Test of Adult Basic Education (TABE) is the only outcome instrument utilized in the study. It was administered to all students upon entrance and exit at CAVT. The outcome data produced by the TABE was used to assess basic skills achievement.

Tests of Adult Basic Education (TABE)

The TABE is a norm referenced test designed to measure achievement in basic skills. The test provides information about the relative ranking of examinees against a norm group, as well as specific information about the instructional needs of examinees. There are four overlapping levels and two parallel forms, Forms 5 and 6, for each level. The TABE consists of four content areas:

Reading	1 Vocabulary	30 items
	2 Comprehension	40 items
Mathematics	3 Mathematics Computation	48 items
	4 Mathematics Concepts/App	40 items

Language	5 Language Mechanics	30 items
	6 Language Expression	45 items
Spelling	7 Spelling	30 items

According to the test manual, the Kuder-Richardson formula 20 (KR 20), was applied to TABE 5 and 6 to measure internal consistency. This formula provided a reliability estimate that equals the average of all split-half coefficients that would be obtained on all possible divisions of the test into halves. Such a split-half coefficient would be obtained by correlating one-half of the test with the other half and then adjusting the correlation by the Spearman-Brown formula so that it applies to the whole test. The KR 20 coefficients based on number-correct scoring of the TABE 5 and 6 ranged from .75 to .92.

Scoring of the TABE is not complicated and may be performed by a classroom instructor. The number of correct responses in a given test or content area is converted to a scaled score by using a conversion table. An examinee's total battery scaled score is obtained by averaging the scale scores for total reading, total mathematics and total language. Area scale scores may then be converted to grade equivalents, reference group percentile rank, stanines, and normal curve equivalent (NCE) scores.

Instrumentation Process Variables

The instructor and student surveys, counseling reports, and quarterly reports all provided process information concerning daily functioning of the GRADS project. The process information will be used in the study to assess the levels of implementation and provide information on unexpected events that may effect each components effectiveness.

Instructor and Student Surveys

These two instruments consisted of seven open-ended questions, several of which required more than one response (see Appendix A). The surveys were designed to assess the degree of program awareness, satisfaction with program services, and level of implementation.

Progress Reports

Further assessment of process included quarterly review progress reports completed by the project staff. Additionally, counseling reports were submitted monthly. These reports allowed the project staff to ascertain whether critical incidents during the program interfered with student goal attainment (see Appendix B).

Goals and Objectives

The program goals cited in the GRADS program proposal consisted of reducing the dropout rate and increasing basic skills. The program components were designed to address each of these goals. For example, a resource room and method for adapting materials were program components that addressed the goal of increasing basic skills. The following list the program goals in bold type. Under each goal, the program components are listed along with measurable objectives designed for each component.

Goal 1: To reduce dropout rates (in both CAVT school and feeder high schools).

Component 1:1 A counseling program for at-risk students.

Objective (1): The treatment students' attendance will significantly increase after two years in the program.

Objective (2): After two years in the program, the attendance records of the treatment students will not significantly differ from the normal students and will significantly differ from the control group.

Component 1:2 Auxiliary services.

Objective (1): 80% of the treatment students attending summer school will complete with a passing grade.

Objective (2): Significantly fewer treatment students will drop out compared to the control students; however, the number of treatment students that drop out will not significantly differ from the normal group.

Goal 2: To increase the academic skills of at-risk students.

Component 2:1 An intensive resource center environment for at-risk students.

Objective (1): The basic skills level of the treatment group students will significantly increase after two years in the program.

Objective (2): The basic skills level of the treatment group students will significantly differ from the control group but will not significantly differ from the normal group after two years in the program.

Objective (3): Treatment group students will significantly decrease their number of classes failed after two years in the program.

Objective (4): The treatment group will significantly differ from the control group in the number of classes failed after two years in the program but will not significantly differ from the normal group.

Component 2:2 Adaptive teaching services for at-risk students.

Objective (1): Treatment students will significantly increase their grade point averages after two years in the program.

Objective (2): The grade point averages of the treatment group will significantly differ from the control group but will not significantly differ from the normal group.

Procedures

Parental permission to participate in the evaluation was obtained by CAVT for all groups at program entrance (Appendix B). CAVT staff and treatment students attended awareness sessions at the beginning of each program year that outlined GRADS components and services. All other activities were conducted according to the program timeline. Figure 4 contains the timeline of task and activities for all three of Project GRADS program years. The shaded portions of the timeline indicate when the activity began and ended.

Resource Room

The resource room was in place at the beginning of the school year. Individualized learning plans were designed for each treatment student based on the TABE scores and suggestions from the computer assisted instruction package utilized in the resource room. Treatment students were assigned to the resource room twice a week and were free to seek assistance on either CAVT or home school assignments on an as needed basis.

Materials were adapted according to the needs of the treatment students. The resource room's prescriptive teacher worked with vocational teachers on adapting instruction by request. As the instructors received the adapted materials, suggestions were made concerning the most effective

Project Components	July 1, 1989 to Dec. 31, 1989	Jan 1, 1990 to June 30, 1990	July 1, 1990 to Dec. 31, 1990	Jan 1, 1991 to June 30, 1991	July 1, 1991 to Dec. 31, 1991	Jan. 1, 1992 to June 30, 1992
COMPONENT 1: Provide resource center environment for students.						
1.1 Identify students at high risk of dropping out.						
1.2 Assign students to treatment/control groups.						
1.3 Develop individualized learning plan/each student.						
1.4 Provide remediation in basic skills.						
1.5 Provide tutorial assistance to assigned students.						
1.6 Provide assessment and feedback/assigned students.						
COMPONENT 2: Provide prescriptive teaching services to students randomly assigned.						
2.1 Provide diagnostic assessment services.						
2.2 Assist vocational teachers in adapting instruction.						
2.3 Adapt instructional materials.						
2.4 Provide ongoing tracking of students.						
COMPONENT 3: Provide counseling program for assigned students gr. 11-12.						
3.1 Assess vocational interests of students.						
3.2 Provide group counseling services.						
3.3 Meet w/students weekly for counseling.						
3.4 Track students at feeder schools.						
COMPONENT 4: Auxiliary services						
4.1 Develop/implement for-credit summer program.						
4.2 Child care services.						
4.3 Transportation/needed.						
4.4 Follow-up tracking.						

Figure 4. Timeline of components and activities

way that they could be utilized. Tape recorded text and highlighted textbook were provided for each of the vocational classes.

Counseling Program

The counseling program consisted of group counseling every two weeks and individual sessions on a as needed basis. The counselor was responsible for monitoring the students' absences, GPA, etc., by tracking students at CAVT and their feeder schools. Each group session began with the assessment of the past two weeks' progress concerning the tracking variables. The GRADS counselor also visited all of the shop and lab areas to observe GRADS students at work. In some classes, the counselor engaged in the work being done in order to gain specific knowledge as well as to increase rapport with the students.

Auxiliary Services

An array of auxiliary services were provided for the treatment students. Participants eligible for summer school were selected in May of each year for the two summer sessions. Arrangements and funding were provided for those students that considered child care a barrier to graduating. Additionally, transportation was provided to those students who could not otherwise attend CAVT or summer school.

Data Collection

Data were collected by program staff for all eleventh grade students accepted by CAVT at the beginning of the 1989-90 and 90-91 school years. Once the program had begun, data collection took place at the end of each quarter. The project director secured the cooperation of the feeder school administrators for data collection purposes. Project staff collected student data from both the home school and CAVT during each of the program years: 1989-90, 1990-91, 1991-92. Instruments designed for data collection are found in Appendix A. A database was constructed that included all program data as well as the tracking information.

All students in the treatment, control, and normal groups were given the TABE at program entrance and exit. The resource room instructor administered the TABE and Op-scan equipment and software for scoring was provided by CAVT.

The instructor and student surveys were administered at the end of the first and third program years by project staff. Counseling activity reports were submitted monthly and staff project reports were submitted quarterly.

Data Analysis

Following the collection, the data were coded and input into the tracking database. This database was imported to SPSS (Statistical Program for the Social Sciences) for statistical analysis. Demographic data will be

analyzed using frequency distributions and descriptive statistics to describe the sample.

The objectives for the program components were analyzed in the same manner. Correlated t-tests was performed on the outcome variables to determine pre-post within-group differences for the treatment, control, and normal groups. Analyses of covariance using the at-riskness index score as the covariate was conducted to determine differences among the groups after two-years in the program. Frequency counts, percentages, and chi-square analysis wasutilized for the categorical variables. Results of the analyses are presented in Chapter 4. The significance of all statistical test was determined at a Type I error rate of .05.

CHAPTER IV

RESULTS

The results of the program evaluation for Project GRADS are presented in this chapter. Each of the component objectives are assessed according to the results of the outcome data. The evaluation of the effectiveness of the component objectives will be followed by an examination of the attainment of the project goals and the process evaluation.

Pre and Post Examination of Riskness Level

Before component objectives could be evaluated, the similarity of the groups was examined. An one-way ANOVA and Tukey HSD tests were conducted on the at-risk index scores in order to determine if the composition of the groups were similar. The results (see Tables 5 and 6) indicated that the normal group (those students attending CAVT and not classified as at risk) significantly differed from the treatment (those students attending CAVT, classified as at risk and receiving program services) and control (those students attending CAVT and classified as at risk) groups. It should be noted that this type of analysis does not yield an absolute level of

TABLE 5

ANOVA SUMMARY TABLE OF AT-RISK INDEX SCORES AT PROGRAM START

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Between	610.66	2	305.33	49.60	.000*
Within	867.84	141	6.15		
Total	1478.51	143			

$p < .05$

TABLE 6

TUKEY HSD TESTS FOR PAIRWISE COMPARISON AMONG PRE AT-RISK INDEX SCORE MEANS

Group	Control	Treatment	Normal
	-1.73	-1.18	2.85
Control -1.73			
Treatment -1.18			
Normals 2.85	*	*	

$p < .05$

"riskness," since the standardized scores were derived from within each sample. In other words, a level of riskness can not be assigned to the individual student, the index scores were an index of relative risk.

The composition of the groups was also analyzed at the end of the program in order to assess the effects of differential attrition on group membership. Those students who had not dropped the program were selected for the analysis. An one-way ANOVA and Tukey HSD tests were conducted on the at-risk index scores of those students. Table 7 and 8 present the results. The normal group significantly differed from the treatment and control groups. The difference between the groups at the initiation of the program were still present at the end of the program. Therefore, the hypothesis that the "worst" of the control group dropped out, leaving only the higher performing control students was not verified. It is concluded that differential attrition did not significantly affect the "riskness" level of the groups.

Goal Evaluation

Goal 1: To reduce dropout rates (in both CAVT school and feeder high schools).

Component 1:1 A counseling program for at-risk students.

Treatment students were grouped by vocational courses and received group counseling services every two weeks. The average number in each

TABLE 7

ANOVA SUMMARY TABLE OF AT-RISK INDEX SCORES AT PROGRAM END

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Between	416.39	2	208.19	33.81	.000*
Within	566.37	92	6.15		
Total	982.77	94			

$p < .05$

TABLE 8

TUKEY HSD TESTS FOR PAIRWISE COMPARISON AMONG POST AT-RISK INDEX SCORE MEANS

Group	Control	Treatment	Normal
	-1.48	-1.21	2.98
Control -1.48			
Treatment -1.21			
Normals 2.98	*	*	

$p < .05$

group was five. The average number of group counseling sessions was 12 per student. Topics discussed in group counseling sessions included:

- Teen pregnancy
- AIDS/HIV facts & myths
- Home school (discipline, policies, etc.)
- Summer school
- Dating/relationships/engagements
- Violence (home, school, peers)
- Career exploration
- Employment
- Credits earned
- Child abuse
- Alcohol/Drugs
- Time management

Individual counseling was provided for the treatment students on an as needed basis. The counselor spent a total of 150 hours in individual counseling sessions with treatment students over the project period. If the area of concerns for students fell outside the scope of the project's capacity, the counselor worked with outside agencies to meet the student's needs. A total of 120 outside referrals were made while the second cohort students were in attendance.

Objective (1): The treatment students' attendance will significantly increase after two years in the program.

The students' attendance was recorded both by the home school and CAVT. This procedure was implemented because of the tendency for some students to attend classes at one site and not the other. Since CAVT and the home schools calendars included the same number of school days per year, the number of student absences was recorded rather than days in attendance. Recording the absentee rate rather than the attendance rate for each student eased the record-keeping burden for project staff. A CAVT

absence was recorded if a student did not attend a session (either morning or afternoon). If the student did not attend a session (three hours) of home school, one home school absence was recorded for the student.

Correlated *t*-tests were conducted for each of the groups comparing the CAVT and home school absences to their absences the year prior to CAVT admission (the number of absences used to calculate the at-risk index). The results, presented in Table 9, are mixed. The results of the analysis indicated that the treatment students significantly increased their attendance rate at the home school (reduced their absences). The control and normal groups also reported decreases in the absentee rate at the home school; however, only the control group was significant at the .05 level. All three groups reported significant decreases in the number of absences recorded at CAVT. Each of the groups reported fewer absences at CAVT than at their home school. These results indicate that the attendance for all groups improved once they began CAVT instruction.

Objective (2): **After two years in the program, the attendance records of the treatment students will not significantly differ from the normal students and will significantly differ from the control group.**

TABLE 9

CORRELATED T -TEST RESULTS OF HOME SCHOOL AND CAVT ABSENCES BY GROUP MEMBERSHIP

Home School Absences				
	N	Pre Mean	Post Mean	*t* -value
Treatment	26	10.59	5.86	-2.13*
Control	24	10.79	6.22	-2.91*
Normals	36	5.47	4.09	-1.40
CAVT Absences				
	N	Pre Mean	Post Mean	*t* -value
Treatment	26	10.59	4.46	-2.76*
Control	25	10.52	4.32	-4.27*
Normals	36	5.47	3.13	-2.31*

*$p < .05$

An analysis of covariance using the at-risk index score as the covariate was conducted to evaluate this objective. The results (see tables and 10 and 11) indicated that this objective was not met. There was not a significant difference between the groups on either the home school or CAVT absences. The attendance rate of all three groups increased once they began attending CAVT. Additionally, both the treatment and control groups were able to "close the gap" so that their attendance rate resembled those of normal students by program end.

Component 1:2 Auxiliary services.

Auxiliary services included summer school, child care services, and transportation. Child care was provided for three treatment students over the course of the project period. CAVT provided transportation from the home school for all students; however, occasions arose when the students had difficulty getting to the CAVT bus or back to the home school by a particular time period due to the long routes. In these cases, GRADS provided transportation for the students. GRADS also provided transportation for summer school.

Objective (1): 80% of the treatment students attending summer school will complete with a passing grade.

A total of 72 treatment students were referred to the summer school program in order to gain credit for classes they had failed at the home

TABLE 10

ANCOVA SUMMARY TABLE OF HOME SCHOOL ABSENCES WITH AT-RISK INDEX SCORE AS COVARIATE

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Covariates	51.30	1	51.30	2.67	.106
Main Effects	30.46	2	15.23	0.79	.455
Explained	81.77	3	27.25	1.42	.242
Residual	1572.55	82	19.17		
Total	1654.32	85	19.46		

$p < .05$

TABLE 11

ANCOVA SUMMARY TABLE OF CAVT ABSENCES WITH AT-RISK INDEX SCORE AS COVARIATE

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Covariates	4.25	1	4.25	.419	.519
Main Effects	36.70	2	18.35	1.80	.170
Explained	40.96	3	13.65	1.34	.265
Residual	842.64	83	10.15		
Total	883.60	86	10.27		

$p < .05$

school. Of the 72 students referred, 10 (13.8%) did not complete the program and 1 (1.4%) failed the summer school curriculum. In all, 61 treatment students (84.7%) successfully gained credits during the summer school program. These results indicate that the objective was successfully met.

Objective (2): **Significantly fewer treatment students will drop out compared to the control students, however, the number of treatment students that drop out will not significantly differ from the normal group.**

Of the 148 students in the evaluation study, 20 (13.5%) dropped out of school. Table 12 categorizes students' dropout status by group membership. Four types of dropout status were defined: (1) did not drop out, (2) dropped CAVT but remained in school, (3) dropped out of home high school but continued to attend CAVT, and (4) dropped out of both CAVT and home school. Chi-square analysis indicated a significant difference in the dropout status by group membership (χ^2 (6 *df*) = 17.48, $p < .05$). Further chi-square analyses were conducted to more fully describe the differences. When the four dropout status categories above were used in the analyses, significant differences in dropout status were noted between the treatment and control groups (χ^2 (3 *df*) = 10.11, $p < .05$). No

TABLE 12

DROPOUT STATUS BY GROUP MEMBERSHIP

Group	Did not drop out	Dropped CAVT	Dropped home school	Dropped home school and CAVT	Totals
Control	25	8	3	14	50
Treatment	34	10	0	4	48
Normals	36	10	2	2	50
Totals	95	28	5	20	148

differences were found between the treatment and normal group (χ^2 (3 *df*) = 2.68, $p < .05$). Significant differences between the treatment and control groups were noted for three of the four dropout statuses. Significantly more control students dropped out of their home high schools (χ^2 (1 *df*) = 9.58, $p < .05$) and out of school completely (χ^2 (1 *df*) = 6.31, $p < .05$). No differences were found between the treatment and control on the number of students who dropped out of CAVT. No differences were found between students in the treatment and normal groups on these variables. The results of the analysis indicate that the objective was met. A significant difference was present between the treatment and control students while no difference was present between the treatment and the normals concerning the number of students that dropped out school.

Goal 2: To increase the academic skills of at-risk students.

Component 2:1 An intensive resource center environment for at-risk students.

Most CAVT students used the resource center in groups, primarily when the instructor referred his/her entire class to the center for specific basic-skill instruction. For example, if an instructor determined that the entire class needed to review proportions, the class was scheduled into the resource center for that purpose. Although the resource center was made available on a self-referral basis to all CAVT students, only GRADS

treatment-group students were assigned to the center by project staff. An individual learning plan was developed for each treatment student based upon the summary of TABE scores, grades, interest, etc. Each treatment student had a individual file in the resource center that was utilized each time the student received assistance, and only these students were able to utilize the computer assisted instruction program for the remediation of basic skills.

Resource center instructors used a variety of materials to teach concepts and skills with which individual students had difficulty. Treatment students attended the center additional times in order to obtain tutorial assistance with either CAVT coursework or assignments from their home school. Tutorial assistance was provided both individually and in small groups.

Objective (1): The basic skills level of the treatment group students will significantly increase after two years in the program.

Every student at CAVT was administered the Test of Adult Basic Education (TABE) at program entrance and exit. The purpose of the TABE was to determine achievement levels in the basic skills areas of reading, mathematics, and language arts. The correlated t-test results of the pre and post-TABE NCE scores are presented in Table 13. The treatment group

TABLE 13

CORRELATED T -TEST RESULTS OF TOTAL TABE NCE SCORES BY GROUP MEMBERSHIP

	N	Pre Mean	Post Mean	*t* -value
Treatment	25	66.74	71.24	2.98*
Control	20	61.72	66.00	4.22*
Normals	30	68.50	73.60	4.00*

* $p < .05$

recorded significant gains and met the objective. The treatment group's TABE means increased from 66.74 to 71.24 by programs end. Both the control and normals groups also recorded significant gains on the TABE.

Objective (2): The basic skills level of the treatment group students will significantly differ from the control group but will not significantly differ from the normal group after two years in the program.

In order to assess group differences in basic skills, the post-TABE scores were used as the dependent variable. The choice of the at-risk index as a single covariate would not have been appropriate since the TABE was not included in the index. An one-way ANOVA and Tukey HSD tests were conducted on the pre-TABE scores in order to assess if it was an appropriate covariate. A significant difference was not indicated between groups on the pre-tabe, therefore; the pre-TABE scores were used as a covariate rather than the at-risk index. The results are presented in Table 14. The results of the analysis indicated that there was not a significant difference between the groups in basic skills levels after two years in the program. Even though the treatment group resembled the normals, the objective was not met since the control group also closed the gap that once existed.

TABLE 14

ANCOVA SUMMARY TABLE OF TABE NCE SCORES
WITH PRE-TABE SCORE AS COVARIATE

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Covariates	8961.56	1	8961.56	202.59	.000
Main Effects	17.95	2	8.97	.203	.817
Explained	8979.52	3	2993.17	67.66	.000
Residual	3140.56	71	44.23		
Total	12120.08	74	163.78		

$p < .05$

Objective (3): Treatment group students will significantly decrease their number of classes failed after two years in the program.

The number of classes failed were collected for both CAVT and the home school and recorded on a semester basis. Correlated t-tests were conducted to assess this objective and the results appear in Table 15. A significant decrease was reported by the treatment group. Their group mean fell from 0.73 to 0.03 after two years in the program. These results indicate that the objective was successfully met. However, it should be noted that variables other than resource room instruction may have contributed to the success since the control group also experienced significant decreases in their number of classes failed.

Objective (4): The treatment group will significantly differ from the control group in the number of classes failed after two years in the program but will not significantly differ from the normal group.

The results of an ANCOVA that used the at-risk index score as the covariate appear in Table 16. The results indicated that a significant difference was not present between the three groups on the number of classes failed. Therefore, this objective was not met.

TABLE 15

CORRELATED T -TEST RESULTS OF NUMBER OF CLASSES FAILED BY GROUP MEMBERSHIP

	N	Pre Mean	Post Mean	*t* -value
Treatment	26	0.73	0.03	-5.72*
Control	24	1.39	0.12	-4.08*
Normals	36	0.40	0.00	-1.78

$p < .05$

TABLE 16

ANCOVA SUMMARY TABLE OF NUMBER OF CLASSES FAILED WITH AT-RISK INDEX SCORE AS COVARIATE

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Covariates	1.14	1	1.14	11.24	.001
Main Effects	.305	2	0.15	1.49	.230
Explained	1.45	3	0.48	4.74	.004
Residual	8.36	82	0.10		
Total	9.81	85	0.11		

$p < .05$

Component 2:2 Adaptive teaching services for at-risk students.

CAVT course materials and adaptations were made for all of the vocational courses in which treatment students were enrolled. The prescriptive teacher and materials developer placed an emphasis on modifying the most difficult aspects of each course during the first year; additional modifications were made in each succeeding year. Modifications were made for texts, tests, technical manuals, and instructor handouts. A complete listing of the modifications/adaptations completed for course is included in the Appendix C. All materials adapted for use by CAVT vocational instructors were used with all students; it was not considered practical to restrict their use to treatment-groups students only.

Objective (1): Treatment students will significantly increase their grade point averages after two years in the program.

Table 17 displays the results of the correlated t-tests performed on the home school, CAVT, and combined GPAs. The post-GPAs were compared to the students' GPAs the year prior to CAVT entrance. The results of the analysis indicate that the objective was met since the treatment students significantly increased their home school, CAVT and combined grade point averages. Overall, the treatment students increased their combined GPA from 1.94 to 2.68 on a 4.0 scale. Each of the groups

TABLE 17

CORRELATED T -TEST RESULTS OF HOME SCHOOL , CAVT, AND COMBINED GRADE POINT AVERAGES BY GROUP MEMBERSHIP

Home School GPA				
	N	Pre Mean	Post Mean	*t* -value
Treatment	26	1.94	2.24	2.32*
Control	24	1.76	2.01	1.59
Normals	36	2.71	2.60	-0.78
CAVT GPA				
	N	Pre Mean	Post Mean	*t* -value
Treatment	26	1.94	3.15	5.82*
Control	24	1.76	3.08	5.71*
Normals	36	2.71	3.55	5.67*
Combined GPA				
	N	Pre Mean	Post Mean	*t*-value
Treatment	26	1.94	2.68	5.44*
Control	24	1.76	2.58	4.18*
Normals	36	2.71	3.09	3.64*

* $p < .05$

made significant increases on their CAVT and combined GPAs, while the control and normal groups failed to make significant increases in their home school GPAs.

Objective (2): The grade point averages of the treatment group will significantly differ from the control group but will not significantly differ from the normal group.

An ANCOVA was conducted on the combined GPAs using the at-risk index as the covariate. The results of the analysis and the follow up analysis appear in Tables 18 and 19. A significant difference was found between the groups. The Bryant-Palson statistic for one covariate was computed in order to determine the differences between the pairs of adjusted means (see Table 19). The results indicated that the treatment and control groups were significantly different from the normals. A significant difference was not present between the treatment and the control groups. Therefore, this objective was not met.

Process Evaluation

A delay in the project start date was caused by the installation of the basic-skills software utilized in the resource center. This delay was due to vendors' delays in the delivery and installation of the hardware and

TABLE 18

ANCOVA SUMMARY TABLE OF COMBINED GPA WITH AT-RISK INDEX SCORE AS COVARIATE

Source	Sum of Squares	DF	Mean Square	F	Significance of F
Covariates	1.02	1	1.02	2.75	.101
Main Effects	4.05	2	2.02	5.46	.006*
Explained	5.07	3	1.69	4.56	.005
Residual	30.43	82	0.37		
Total	35.51	85	0.41		

$p < .05$

TABLE 19

BRYANT-PALSON STATISTIC FOR PAIRWISE COMPARISON OF COMBINED GPA ADJUSTED MEANS

Group	Control	Treatment	Normal
	2.50	2.64	3.20
Control 2.50			
Treatment 2.64			
Normals 3.20	*	*	

$p < .05$

software. The delay was considered minimal and did not affect the measurement of project outcomes.

The major problem that project staff faced at project initiation was the reluctance of a few instructors to allow their students to participate fully in the program, primarily the group and individual counseling components. Project staff believed that the instructors' hesitation to fully participate in the program was primarily due to their lack of input in student selection.

Surveys of CAVT instructors were administered in February, 1990 and May, 1992. The initial survey, administered after the program had been in operation for six months, was for formative evaluation purposes and provided feedback that allowed project staff to make changes in program administration. The second survey, administered at project end, asked the same set of questions. The survey form and responses are included in Exhibit 1, Exhibit 2, and 3 found in Appendix D. The summarized responses to open-ended questions are italicized.

After six months of project operation, all instructors were aware of each treatment-group student in their courses and the services they were receiving. Question #4 asked for instructors' feedback concerning the adapted course materials. The responses showed that the instructors were pleased with the materials and that they were developed in a timely manner. Ten instructors requested that more materials be developed. Instructors positively rated the overall program. Instructors' concerns were centered

around the experimental nature of the program, specifically random assignment to the treatment group. The responses to the second survey were essentially the same, though slightly more positive. Teachers continued to express their dissatisfaction with the method by which students were selected for participation in the program. The teachers indicated that they wanted more input in the students selection and wanted the option of referring students throughout the year.

A survey was administered to the treatment students attending group counseling. The consensus of the students was that group counseling was beneficial. The following is a list of individual comments regarding the benefits:

1) Relaxed atmosphere
2) A break from the routine and mundaneness
3) Opportunity to meet new and different types of people
4) Opportunity to share with others
5) Opportunity to explore goals, ideas, and dreams
6) helps to solve their problems
7) Place to blow off steam, gripe about teachers and parents
8) Way to learn new information about thing they-re interested in that aren't taught in their classes
9) Way to get support from others
10) It's fun!

The project also resulted in changes in CAVT's entrance requirements that allowed more high-risk students to enroll. After the initial year of the program, during which CAVT administrators and instructors found that high-risk students could successfully complete vocational coursework, provisions were made for waiving traditional admission requirements for high-risk

students. A policy change was made to admit high-risk students who were recommended by their home high school principals or counselors. Additionally, the High-School Relations Coordinator was given the discretion to admit high-risk students who demonstrated an adequate level of motivation to complete high school.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter presents a summary of this research in three sections. The first section is a summary of the study and its findings. The next section presents conclusions based on the findings of the study. The third section is a list of recommendations based on the study.

Summary

Industry is at a point where it can not longer employ a large unskilled labor force. Yet the number of students choosing to drop out of school is increasing at an alarming rate. Rural areas are particularly hard hit by this situation. Programs that propose solutions to this problem are found in the literature; however, few are evaluated in a systematic manner. The purpose of this investigation was to evaluate the effectiveness of Project GRADS, a dropout prevention program that combined several of the successful prevention methods into one program. The purpose of the investigation was to determine if the project achieved its program goals of reducing the

dropout rate and increasing the basic skills levels of students determined to be at-risk of dropping out of school. The effectiveness of the project goals and objectives were evaluated according to a goal-based evaluation model.

The evaluation included treatment and control students as well as a third group called the normals. The treatment students consisted of CAVT students that were categorized as at risk and participated in Project GRADS services. The control students consisted of CAVT students who were categorized as at risk but did not receive program services. The normal group consisted of those students attending CAVT that were not determined to be at risk of dropping out and did not received project services The students' group was determined according to an at-risk index score consisting of the students' GPAs, number of classes failed, credits needed to graduate, age, and absences. The project included the normals in an effort to determine if the project could keep youth in school and if the project could positively effect the school related variables that made the students' at risk of dropping out. The project hypothesized that as the at-risk students' progressed through the program, their GPAs, absences, and classes failed, would improve and they would eventually resemble the normal students on the identification variables.

Students in all three groups participated in the normal vocational-technical education curriculum. Treatment students also received the assistance of the program services which included counseling, adapted

materials, auxiliary services, and basic skills remediation. If successful, the project would provide rural school districts with a replicable model for preventing early school leaving.

Summary of Findings

The results of the evaluation are presented in Figure 5. The check marks indicate that the goal or objective was met. Objective 1 of the counseling component was met while Objective 2 was not met. Both the treatment and control groups made gains in attendance and closed the gap between themselves and normal group by graduation. Therefore, it is difficult to say that the counseling program made a significant impact on the attendance rates of the treatment students. Other variables may have been responsible for the increases.

The two objectives that were related to auxiliary services (summer school, travel, and child care) were successfully met. Students also took advantage of the opportunity to gain the credits they needed in order to graduate with their class. Since the review of the literature emphasized retention and lack of credits as primary factors in a student's decision to drop out of school, this project component may account for the difference between treatment and control graduates.

Whether the decrease in the number of dropouts was due to the counseling services, the auxiliary services, or a combination of the two, the

Goal 1: To reduce the dropout rate.	√
Component 1:1: A counseling program for at-risk students.	
Objective 1: The treatment students' attendance will significantly increase after two years in the program.	√
Objective 2: After two years in the program, the attendance records of the treatment students will not significantly differ from the normal students and will significantly differ from the control group.	
Component 1:2: Auxiliary services.	
Objective 1: 80% of the treatment students attending summer school will complete with a passing grade.	√
Objective 2: Significantly fewer treatment students will drop out compared to the control students; however, the number of treatment students that drop out will not significantly differ from the normal group.	√
Goal 2: To increase the academic skills of at-risk students.	√
Component 2:1 An intensive resource center environment for at-risk students.	
Objective 1: The basic skills level of the treatment group students will significantly increase after two years in the program.	√
Objective 2: The basic skills level of the treatment group students will significantly differ from the control group but will not significantly differ from the normal group after two years in the program.	
Objective 3: Treatment group students will significantly decrease their number of classes failed after two years in program.	√
Objective 4: The treatment group will significantly differ from the control group in the number of classes failed after two years in the program but will not significantly differ from the normal group.	
Component 2:2 Adaptive teaching services for at-risk students.	
Objective 1: Treatment students will significantly increase their grade point averages after two years in the program.	√
Objective 2: The grade point averages of the treatment group will significantly differ from the control group but will not significantly differ from the normal group.	

Figure 5. Summary of objectives

result was that the goal was met. The dropout rates of the at-risk treatment students were significantly lower than the control students.

The results of the basic skills and adaptive materials components indicated that all the groups were able to increase their basic skills levels, increase their GPAs and decrease their number of classes failed. This finding, along with the fact that the treatment and control students were able to catch up with the normals even as the normals were gaining, indicates that other influences were affecting the treatment and control students besides the resource center and adaptive materials. The decision of project officials to provide all students with access to the resource center and adapted materials assistance (with the exception of the computer assisted instruction) resulted in a diffusion of treatment that weakened the study of these components. Whether the gains were due to the work in the resource center or to other factors is not known. However, the objective outcomes indicated that the goal was met - the basic skills levels of at-risk students were increased.

In total, the two primary goals of the project were accomplished; however, the evaluation of the component objectives suggest that the project may not be solely responsible for the outcomes. Other factors such as diffusion of treatment and the influences of vocational-technical education may have acted as confounding variables in the study.

Conclusions

The results of the evaluation indicated that at-risk students did reach the goals of decreasing the dropout rate and increasing the basic skills levels of at-risk students. However, evaluation of the components did not indicate that Project GRADS was solely responsible for the increases. The question of what was responsible for the treatment and control improvement remains. With the exception of the number of dropouts, the control group mirrored the treatment students on most of variables assessed. High-risk students, whether in treatment or control groups, performed considerably better on nearly all of the academic variables once they began their vocational programs. This indicates that other factors such as the presence of vocational-technical education may have affected the at-risk students. However, the differences on the number of dropouts of the treatment and control groups more clearly suggest a cause-effect relationship between the project intervention and keeping at-risk students in school. However, this difference was due to one or a combination of the program components is unknown. One possible explanation is that the program kept at-risk students in school long enough to take advantage of the effects of the vocational-technical education.

Diffusion of treatment may have been another factor in the lack of difference between treatment and control students on the academic variables. Several program components were available to both treatment

and control students. Project staff's decision to remove the restrictions on the prescriptive teaching and resource center components of the program may have accounted for the similar gains. Because of the diffusion of treatment, the evaluation was not able to determine the differential effect of Project GRAD on the effectiveness of the components which seriously effected the evaluation.

Another explanation for the lack of difference between the three groups may have been the selection process. The students were assigned to groups according to the at-risk index scores. This index score, which was a linear combination of standardized scores, did not allow for comparison with other studies of at-risk students. Therefore, the question arises, did this combination of variables accurately detect the at-risk student? According to the review of the literature, each of the five variables (GPA, credits needed to graduate, classes failed, overage, and absences) were cited as school-related indicators and were highly correlated with each other. The true test of the effectiveness of the index score is in the analysis of the dropout rate. Of those students assigned to the control group, twenty-eight percent (14 of 50) dropped out of school. This figure is similar to the national estimates of twenty-five to thirty percent (Center for the study of Social Study, 1991).

The goal-based design of the evaluation may have also effected the project results. The goal-based design provides program administrators with

specific ideas of where they are going and what is to be accomplished. However, because of its limited scope, goal-based evaluation does not allow for assessment of program results that occur outside of the objectives' focus. The goal-based method provides information concerning the attainment of individual goals and objectives but does not allow for examination of those outcomes that were not anticipated at the time of objective development. The result is an evaluation that produces the desired information but may miss residual effects. If an ethnographic approach was applied to the evaluation rather than the goal -based model, those residual effects might be highlighted. However, the easily understood and objective focus of the study might have been sacrificed.

Recommendations

The following recommendations are made based on the findings of this study and the review of the literature about the dropout problem:

1. The study indicated that at-risk students are capable of completing the vocational-technical education program. However, the admissions policy of the Oklahoma Department of Vocational-Technical Education systems prevents many of these students from taking advantage of the program. Additionally, the review of the literature indicated that vocational-technical education has positive outcomes for at-risk students. Therefore, it is recommended that the Oklahoma Department of Vocational-Technical

Education review its screening process and allow access to those student who may flourish in such a setting;

2. The results of this evaluation indicate that components such as career counseling, shawdowing, and mentoring were effective for the eleventh and twelfth grade students. However, many students dropout before they reach eleventh grade. Therefore, additional research that adds a component of career counseling, shadowing, and mentoring should be developed for the eighth through tenth grade students in the feeder schools. The addition of this pre-CAVT component could reduce the drop out rate and allow more students the opportunity to succeed;

3. Evaluation of the program by another model other than goal-based could provide information concerning program outcomes that were not present due to the restrictive nature of this study;

4. The effectiveness of the resource center and adaptive materials components were not interpreted because of the diffusion of treatment that occurred. The effects of these two components should be explored. The study should be replicated where only the treatment students are provided resource center and adaptive materials services in order to adequately define the effectiveness of these components;

5. The study should be replicated using another scale for identifying students at risk of dropping out in addition to the index scores in order to

validate the use of the index score variables (GPA, classes failed, credits needed to graduate, overage, and absences);

6. The effects of the vocational-technical education were cited as possible explanations for the increase in the performance of all groups. Pinpointing the elements in this setting that produce the positive effects should be explored. For example the positive effects of the vocational-technical education might be due to the hands-on materials, school choice, or the adult atmosphere. A study that defines the components of the vocational-technical education and determines its effects on both at-risk and normal students is needed. Such a study would provided information on the magnitude of the vocational-technical education experience;

7. The vocational-technical instructors should play a greater role in the program development, implementation and selection of students in order to instill the element of ownership needed for successful implementation; and

8. The study indicated that the performance of rural students could be enhanced by this model. This is found in the examination of the home school GPAs which increased once the students began their vocational-technical training. Both the needs of rural students and industry were addressed through the model as qualified graduates enter the job market. Additional study should focus on how the vocational-technical education can continue to address the needs of rural communities.

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APPENDIX A

PERMISSION TO PARTICIPATE

PERMISSION TO PARTICIPATE IN GRADS PROJECT

Project GRADS consists of students that are selected at random to participate in this new project. The purpose of this study is to determine if the additional services received will help increase grades, employment opportunities, confidence, and help young people graduate with career goals in mind. Project staff hope to help students compete in a changing job market.

The school administration has consented to release students from classes in order to participate in this project. Conferences will be scheduled every two or three weeks for the purpose of career planning, study skills, and interests of the individual student. Every effort will be made to take students from elective classes and rotate conference times so that the same classes are not missed. Students will not miss more than a total of nine class periods per semester.

I understand there is no fee involved and conferences with the students will be held regularly.

All information is kept confidential and cannot be released without your written permission.

_____ has my permission to participate in the GRADS Project, co-sponsored by Central Oklahoma Area Vocational Technical School and Child Services Demonstration Center, in cooperation with your child's school.

_____ _____

Parent or Legal Guardian Home Address

_____ _____

Date Telephone

PLEASE RETURN THIS PERMISSION FORM IN THE ATTACHED ENVELOPE THIS WEEK. THANK YOU.

For Vo-Tech Use Only
Drumright ___ Sapulpa ___
Session AM PM
Class Year 1 2
School code _____
Grade Level 11 12
Date of App. _____
Entry Date _____

Central Oklahoma Area Vocational Technical School
APPLICATION FOR ADMISSION
Secondary Education

PLEASE TYPE OR PRINT INFORMATION. COMPLETE THE FRONT PAGE ONLY.

NAME _____ SS# _____
Last First MI

Address _____ City _____ Zip _____

Home Telephone # (____) _____ Parent's Work # (____) _____

Date of Birth ___/___/___ Parent/Guardian Name _____

Home School _____ Grade Upon Entry 11 12

The following courses are available:

** Air Conditioning/Refrigeration
** Health Careers
** Auto Mechanics
** Building/Grounds Maintenance
* Business Computer Applications
_* Business Management
** Carpentry
** Commercial Electricity
* Computerized Office Technology
** Cosmetology
** Diesel Mechanics
** Drafting
** Computer Repair
_** Electronics/Telecommunications
≥ Robotics Automation
** Law Enforcement (Sapulpa Campus Only)
** Machine Tool
* Marketing Education
** Motorcycle/Small Engine Technology
** Offset Printing
** Welding

*525 hours **1050 Hours — Seniors Only >1170 hours

1st Choice _____ 2nd Choice _____ 3rd Choice _____
I prefer attendance in the : AM _____ PM _____

PARENT/GUARDIAN PLEASE COMPLETE THE FOLLOWING:

Parental Approval

Permission is granted for _____
to be considered for enrollment at Central Oklahoma Area Vocational Technical School.

Date _____ Parent/Guardian Signature _____

Emergency Treatment Approval

I do hereby grant permission for the above student to be examined and treated by qualified medical personnel.

Date _____ Parent/Guardian Signature _____

PLEASE RETURN THIS APPLICATION TO YOUR PRINCIPAL'S OR COUNSELOR'S OFFICE.

Non-Discrimination Statement

Central Oklahoma Area vocational Technical School shall not discriminate on the basis of sex, race, religion, national origin, age, handicap, or disability in the operation of its educational program, recruitment, admissions and employment practice. The Assistant Superintendent, Dr. Larry Ann Holley, has been designated as the officer to assure compliance with all regulations regarding non-discrimination and equal employment opportunities.

HIGH SCHOOL PRINCIPAL OR COUNSELOR PLEASE COMPLETE THE FOLLOWING:

Student's Name _____

To help us comply with government record keeping, reporting, etc., please place a check mark in the box next to the items that apply to this student. **Response to these questions is on a voluntary basis.**

☐ Male ☐ Female

0. ☐ American Indian
1. ☐ Black
2. ☐ Hispanic
3. ☐ White
4. ☐ Asian

IEP ☐ Yes ☐ No **If yes, please identify:**

☐ Hearing Impaired ☐ Speech or Language Impaired ☐ Visually Impaired
☐ SED ☐ Orthopedic Impaired ☐ LD
☐ Other Health Impairment ☐ EMH

Single Parent ☐ Single Pregnant Woman ☐ Economically Disadvantaged ☐
Limited English Proficiency ☐ Academically Disadvantaged ☐

Comments: _____

_____

I recommend this student for enrollment:

_____ or _____

Principal's Signature Counselor's Signature

PLEASE ATTACH A CURRENT TRANSCRIPT WITH ATTENDANCE RECORDS TO THIS APPLICATION.

For Vo-Tech Use Only

Appropriate dress and supplies discussed ____Yes ____No
Student has needed credits ____Yes ____ No
Student has good attendance ____Yes ____No
Student has adequate transportation ____Yes ____No

Pre-Enroll in _____ section of _____
Alternate in _____ section of _____
Comments: _____

_____

Not Accepted _____ Reason _____

_____
Vo-Tech Advisor Signature

Central Vo-Tech
Drumright Campus
3 CT Circle
Drumright, OK 74030
918/352-2551

Central Vo-Tech
Sapulpa Campus
1720 South Main
Sapulpa, OK 74066
918/224-9300

SUMMER SCHOOL ENROLLMENT

NAME: _____ PHONE NUMBER: (___)_____

ADDRESS: _____

CITY: _____ ZIP CODE: _____

HOME SCHOOL: _____ GRADE JUST COMPLETED: _____

COURSE/LEVEL NEEDED (In order of preference if more than one needed):

	Circle No. of Semesters
(1) _____	1st 2nd
(2) _____	1st 2nd
(3) _____	1st 2nd
(4) _____	1st 2nd

Is your home high school offering summer school? Yes ___ No ____

Will your home high school be offering the course(s) that you need? Yes ___ No ____

What will the cost be for you to attend? Tuition _____ Materials/Fees _____

Are you planning to attend summer school at Central Area Vo-Tech? Yes ___ No ____

If attending summer school at CAVT:

Will you need to have transportation provided from your home school to CAVT? Yes ___ No ____

If Yes, will you have transportation from home to your home school in order to catch the CAVT bus? Yes ___ No ____

Will you have transportation back home when the CAVT bus returns you to your home school after lunch? Yes ___ No ____

PERMISSION FORM

I give permission for _____
STUDENTS NAME

to attend summer school classes sponsored by the GRADS Project at Central Area Vo-Tech, Drumright Campus, from 8:30 to 12:30.

_____ Session I June 4 to June 29 (Please check sessions)

_____ Session II July 2 to July 27

Attendance is regulated by the State Department of Education. Students are allowed no more than two (2) absences per session. On the third absence, the student will be dropped from the class.

I also understand that the tuition costs are paid by Project GRADS.

Upon the successful completion of each session the student will receive one semester of credit.

_____ _____ will _____ will not
STUDENTS NAME

need transportation to Central Area Vo-Tech from a central location near the home school.

DATE _____ PARENT/GUARDIAN _____

PHONE _____ ADDRESS _____

_____

DIRECTIONS TO HOME: _____

_____

_____

Emergency Treatment Approval: I do hereby grant permission for above student to be examined and treated by any qualified medical personnel.

DATE _____ PARENT/GUARDIAN _____
Signature

DATE _____ STUDENT _____
Signature

NAME _____ HOME SCHOOL _____

CURRENT ADDRESS _____ TOWN _____ STATE _____ ZIP _____

PHONE _____ DATE OF BIRTH _____

_____ Permission form Approved: _____

_____ Transportation

Method of transportation:

_____ Ride with someone Who? _____

_____ Ride CAVT bus

_____ Drive own car

Check course or courses enrolled (one course per session)

SESSION I

_____ English II (1)
_____ English III (1)
_____ American History (1)
_____ American History (2)
_____ Oklahoma History
_____ Consumer Math (1)
_____ Consumer Math (2)
_____ Pre Algebra (1)
_____ Life Science (1)
_____ Biology (1)

SESSION II

_____ English II (2)
_____ English III (2)
_____ World History
_____ American History
_____ Pre Algebra (2)
_____ Algebra I (1)
_____ Algebra I (2)
_____ Physical Science (1)
_____ Physical Science (2)
_____ Life Science (2)
_____ Biology (2)

I understand the GRADS summer school attendance policy.

_____ _____

Signature Date

CENTRAL AREA VO-TECH
3 CT Circle
Drumright, OK 74030

COURSE COMPLETION REPORT

Student: _____

Date of Birth: _____

High School: _____

The following course was taken at the Project GRADS Summer School. GRADS Summer School is accredited by the Oklahoma State Department of Education.

Dates	Course	Grade	Instructor's Signature
_____	_____	_____	_____

_____ _____
Counselor Date

TRANSPORTATION

_____
Student Name

_____
Home High School

1. The above student will utilize the transportation as provided by Project GRADS.

_____
Signature of Parent or Guardian

2. We, the undersigned, parent or parents of the above name student, request that said student be permitted to DRIVE or RIDE (circle one) via private vehicle to and from Central Tech.

   As a prerequisite consideration, we/I agree: That neither the home high school, Central Tech nor any of the employees thereof shall be held liable for any injury of the student from such transportation and hold the school and all school employees harmless on any claim for damages made by or growing out of the above, (private conveyance) including all expenses of defending same.

_____
Signature of Parent or Guardian

Passengers will be allowed to ride with above named student.

_____ yes _____ no

APPENDIX B

PROCESS AND RECORD KEEPING INSTRUMENTS

PROJECT GRADS TEACHER SURVEY

Instructor: _____ Course: _____

In order to improve Project GRADS for next year, we are collecting feedback information from teachers and students. Please assist us by filling out this short survey.

1. Do you have GRADS students in your program? How many?

   _____

2. Do your GRADS students attend the Learning Resource Center? _____

3. Do your GRADS students attend counseling sessions? _____

4. Have materiasl been developed or adapted for your course? _____
   Have you made any special requests for materials? _____
   Briefly describe the quality and usefulness of the materials:

   _____
   _____

   Were the materials developed in a timely manner?

   _____

   Are there other materials you would like to have developed or adapted?

   _____

5. Have you observed any changes in students who attend GRADS group counseling? _____
   Please give a description or an example: _____

   _____
   _____

6. Do you think Project GRADS has helped at-risk students stay in school or be more successful in school? Why or why not?

   _____
   _____
   _____

7. What recommendations would you make for next year?

   _____
   _____

Project GRADS Student Survey

Course: _____

For our final report on Project GRADS, we are collecting feedback from teachers and students. This information is for project evaluation purposes only. Your ideas would be useful in replicating the project at other sites.

1. Do you attend the Skills Lab? _____
   Approximately how many times per week? _____
   Do you attend more often than non-GRADS students in class? _____
   How much more do you attend? _____
2. Do you attend GRADS group sessions? _____
   Why or why not? _____
   _____

   Did you like the group discussions? _____
   Why or why not? _____
   _____
3. Did you use any color-coded, tape-recorded, or adapted materials? _____
   What did you use? _____
   _____
4. Did you or will you attend GRADS summer school? _____
   What do you like about this summer school? _____
   _____
5. Has the GRADS program or staff helped you in any special way?
   _____ How so? _____
   _____
6. Do you feel the GRADS program has helped you with grades, graduating, staying in school or getting a job? _____
   How has it helped? _____
   _____
   _____

   Have you seen any changes in yourself as a result of participating in the project? _____ Describe the changes _____
   _____
7. What recommendations or comments would you make concerning the overall project? _____
   _____
   _____

GOAL PROGRESS AND DOCUMENTATION CHART

DATES COVERED - (_____)

COMPONENT 1: Provide resource center environment for students.

	CODE #	PRODUCT OR COMMENT
1.1. Identify students at high risk of dropping out.		
1.2 Assign students to treatment/ control groups.		
1.3 Develop individualized learning plan/each student.		
1.4 Provide remediation in basic skills.		
1.5 Provide tutorial assistance to assigned students.		
1.6 Provide assessment and feedback/assigned students.		

Status Code:

1 = Completed as planned
2 = In progress - satisfactory
3 = Completed - deviated substantially from plans
4 = In progress - unsatisfactory
5 = Initiation of activity deferred
6 = Activity abandoned
7 = Not scheduled to initiate at this time

COMPONENT 2: Provide prescriptive teaching services to students randomly assigned.

	CODE #	PRODUCT OR COMMENT
2.1 Provide diagnostic assessment services.		
2.2 Assist vocational teachers in adapting instruction.		
2.3 Adapt instructional materials.		
2.4 Provide ongoing tracking of students.		

Status Code:

1 = Completed as planned
2 = In progress - satisfactory
3 = Completed - deviated substantially from plans
4 = In progress - unsatisfactory
5 = Initiation of activity deferred
6 = Activity abandoned
7 = Not scheduled to initiate at this time

COMPONENT 3: Provide counseling program for assigned students gr. 11-12.

	CODE #	PRODUCT OR COMMENT
3.1 Assess vocational interests of students.		
3.2 Provide group counseling services.		
3.3 Meet w/students weekly for counseling.		
3.4 Track students at feeder schools.		

Status Code:

1 = Completed as planned
2 = In progress - satisfactory
3 = Completed - deviated substantially from plans
4 = In progress - unsatisfactory
5 = Initiation of activity deferred
6 = Activity abandoned
7 = Not scheduled to initiate at this time

COMPONENT 4: Auxiliary services

	CODE #	PRODUCT OR COMMENT
4.1 Develop/implement for-credit summer program.		
4.2 Child care services.		
4.3 Transportation/needed.		
4.4 Follow-up tracking.		

Status Code:

1 = Completed as planned
2 = In progress - satisfactory
3 = Completed - deviated substantially from plans
4 = In progress - unsatisfactory
5 = Initiation of activity deferred
6 = Activity abandoned
7 = Not scheduled to initiate at this time

Home School _____

Vo-Tech Enrollment _____

GRADS Student Information Sheet

Name _____ _____ _____
Last First Middle

Date of Birth: Month _____ Day _____ Year _____

Last grade completed: 8 9 10 11

Last year's grade point average (count "no credit" as 0):

Number of unexcused absences last year: _____ Total absences: _____

Credits earned toward graduation: Overall _____ Academic _____

Technical/Vocational _____ Personal/Other _____

Number of courses failed or "no credit" in high school (grades 9-12): _____

Credits needed to graduate: Overall ___ Required Courses ___`Electives ___

Competency tests required to graduate: (enter R for required and P for passed)

reading ___, math ___, science ___, writing ___, social studies ___, other___

Most recent standardized achievement test scores:

Name of test _____ Level _____

Edition (year published) _____ Date administered _____

Total Reading or Reading Comprehension	Total Math or Math Concepts & Applications
_____ %ile	_____ %ile
_____ NCE	_____ NCE

How many times suspended? _____ How long? (total) _____

How many times expelled? _____ How long? (total) _____

How many times dropped out? _____ How long?

Does the student have an IEP? Yes No

Is the student in Chapter 1? Yes No

SCHOOL

Name/Grade	Subject	9wks	9wks	Sem.	Subject	9wks	9wks	Sem.

NAME _____ SCHOOL _____

NUMBER OF UNITS NEEDED: _____				'94	'93	'92	'91
ENGLISH I	____	____	_____	____	____		
ENGLISH II	____	____	_____	____	____		
ENGLISH III	____	____	_____	____	____		
ENGLISH IV	____	____	_____	____	____		
ENGLISH V	____	____	_____	____	____		
SCIENCE	____	____	_____	____	____		
LAB SCIENCE	____	____	_____	____	____		
MATH	____	____	_____	____	____		
MATH	____	____	_____	____	____		
WORLD HISTORY	____	____	_____	____	____		
OKLAHOMA HISTORY	____	____	_____	____	____		
AMERICAN HISTORY	____	____	_____	____	____		

LOCAL REQUIREMENTS:

_____	____	____	_____	____	____	
_____	____	____	_____	____	____	

CREDIT CHECK

Name: _____ Grade: _____ Date: _____

Plan of study: ( ) General Education ( ) Vocational Education ( ) College Bound

GENERAL EDUCATION And VOCATIONAL EDUCATION
Curriculum graduation requirements

Semester		Class
[ ]	[ ]	English I
[ ]	[ ]	English II
[ ]	[ ]	English III
[ ]	[ ]	English IV
[ ]	[ ]	Math: _____
[ ]	[ ]	Math: _____
[ ]	[ ]	Science: _____
[ ]	[ ]	Science: _____
[ ]		Oklahoma History
[ ]		Geography
[ ]	[ ]	World History
[ ]	[ ]	American History

VOCATIONAL EDUCATION

[ ] Graphic Arts (printing)
( ) 9th ( ) 10th
( ) 11th ( ) 12th

[ ] Residential Construction
( ) 9th ( ) 10th
( ) 11th ( ) 12th

[ ] Vocational Agriculture
( ) 9th ( ) 10th
( ) 11th ( ) 12th

[ ] Vocational Home Economics
( ) 9th ( ) 10th
( ) 11th ( ) 12th

[ ] Vo-Tech
( ) 11th ( ) 12th

COLLEGE BOUND
Curriculum requirements

Semester		Class
[ ]	[ ]	English I
[ ]	[ ]	English II
[ ]	[ ]	English III
[ ]	[ ]	English IV

Three (3) credits of the following maths

[ ]	[ ]	Algebra I
[ ]	[ ]	Algebra II
[ ]	[ ]	Geometry
[ ]	[ ]	Trigonometry/Math Analysis
[ ]	[ ]	Calculus

Two (2) credits of the following lab sciences

[ ]	[ ]	Biology II
[ ]	[ ]	Physical Science Lab
[ ]	[ ]	Chemistry
[ ]	[ ]	Human anatomy/Physiology
[ ]	[ ]	Physics
[ ]		Oklahoma History
[ ]		Geography
[ ]	[ ]	World History
[ ]	[ ]	American History

Recommends four (4) credits of electives

[ ] [ ] Computer Science
[ ] [ ] Speech
[ ] Sociology
[ ] Psychology
[ ] [ ] Foreign Language
[ ] [ ] Foreign Language
[ ] [ ] Government
[ ] [ ] Economics

CREDITS

Freshman _____ credits
Sophomore _____ credits
Junior _____ credits
Senior _____ credits
Total
Credits _____

CLASSES NEEDED TO GRADUATE.

CLASSES TAKING THIS YEAR.

APPENDIX C

MATERIALS MODIFIED

MATERIALS MODIFICATIONS AND ADAPTATIONS

Modifications - lowered or reduced in extent or degree

1) Lowered Readability
   - physical format
   - shorter sentences
   - phrasing
   - spacing between questions
   - providing terms for completion
   - placing figures with questions
   - eliminating unclear terms
     3 instead of 4 choices on multiple choice questions
   - providing synonyms for difficult terms
   - shortened directions
   - placing all choices on same page

2) Color Coded Material

Adaptations - made more suitable or changed to fit a new situation

1) Computer Assisted Instruction (CAI)
2) Word Search Study Guides
3) Tape Recorded Textbooks, Tests
   - using SQ3R concepts

AIR CONDITIONING AND HEATING

Text: (aqua book, uses copied chapters)

Readability: Low 15 Average
Low 11 - 17+ Range

Modifications Adaptations:
Chapter 5 - Color Coded
- Modified Chapter Review Questions
(changed from questions to completion)
(Fry readability is still 17+)
Rightwriter readability 9.09

Text: Electricity for Heating, Air Conditioning and Refrigeration
Harcourt Brace Jovanovich, Inc., 1988
(Not using, but thinking about ordering.)

Readability: Range, Low 7 - low 16th

Text: Electricity for Refrigeration, Heating and Air Conditioning
Delmar, 1987

Readability: Average low 15, Range low 11-17+

Modifications Adaptations:
Color coded, chapters 1-10
Study Guides, chapters 3,4, 6-9

Text: Refrigeration and Air Conditioning Technology
Delmar, 1988

Readability: Average, low 13; Range low 9-17+

Modifications Adaptations: Color coded, chapters 1-3, 10-13, 15-22, 26, 30, 31
Study Guides, chapters 12, 13, 18-22, 26, 30, 31

Misc Materials Modifications & Adaptations: 5 sets of color coding pens provided to instructor for students to color code their texts.

ALLIED HEALTH

Text: Diversified Health Occupations
Delmar Publishers, 1988

Readability: Low 11 (average)
5 - 11 Range

Modifications Adaptations: Color coded Text (2 books - Units - 12, 11, 5, 9, 14)

Word Searches for Medical Abbreviations (Unit 9)

The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (102 pp./ 19 lessons)

- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Combinations of Common Fractions & Whole Numbers
- Simple Percentages
- Metric and Apothecaries Systems
- Understanding Ratio
- Understanding Proportion

Text: Allied Health Careers
Oklahoma State Department of Vocational and Technical Education, 1987

Readability:

Modifications Adaptations: Allied Health Vocabulary (52 chapters)
("Remember!" - IBM program)

Text: Medical Nursing for Animal Health Technicians
American Veterinary Publications, Inc., 1985

Readability:

Modifications Adaptations: Color coded Text (22 chapters)
Vocabulary, ("Remember!" - IBM program)

Text: Health Careers Today
Mosley-Year Book, Inc., 1991

Readability: Average 17+
Range (4th - 17th)

Modifications Adaptations: Color coded Text (24 chapters) (2 books)

Text: Structure and Function of the Human Body

Modifications Adaptations: Vocabulary ("Remember!" - IBM program), Units 1-20

Text: Nursing Assistant - A Nursing Process Approach
Delmar Publishers, Inc., 1992

Readability:

Modifications Adaptations: Color coded chapters 1-6

Misc Materials Modifications & Adaptations: Mathematics for Health Occupations
Kathi Dunlap, author
- math problems
("Remember!" - IBM Program)

Competency Exam Prep and Review for Nursing Assistants
Barbara Kast, author
- content questions for state exam
("Remember!" - IBM Program)

Technical Calculations for Applied Math
- 102 pages, ("Remember!" - IBM Program)

AUTO MECHANICS/TECHNICIAN

Text: Auto Mechanics State Curriculum

Readability:

Modifications Adaptations: The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (60 pp./14 lessons)
- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Principles of Ohm's Law
- Simple Percentages

Text: Engine Performances
RDT Services, Inc., 1989

Readability: Average, low 12; Range low 9-low 15

Modifications Adaptations: Color coded, chapters 1-4
Tape Recorded, chapters 1-4

Misc Materials Modifications & Adaptations: Abbreviations (4 lessons) on "Teacher's Quiz Designer," IBM Program

COMPUTER OFFICE TECHNOLOGY

Text: Principals of Technology, Unit 3

Readability:

Modifications Adaptations: Color coded entire text

Text: Women's Dress for Success, by Molloy

Readability:

Modifications Adaptations: Created Study Guides and Tests to accompany text (8 chapters)

Text: Gregg Reference Manual

Readability:

Modifications Adaptations: Basic English Skills
("Remember!" - IBM)

Text: Word Perfect 5.0
Southwestern Publishing Company, 1990

Readability: high 7th

Modifications Adaptations: Color coded, chapters 3 and 4

CARPENTRY

Text: Residential Carpentry State Curriculum, 1985

Readability:

Modifications Adaptations: Revised test, Wall Framing

Misc Materials Modifications Adaptations: Modified test, "Wall Framing"

The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (92 pp./18 lessons) (Diagrams included)

- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Linear, Square, and Cubic Measurements
- Small Job Bid
- Reading Tape Measurements
- Measuring Objects

Applied Mathematics ("Remember!" IBM program)

COMMERCIAL ELECTRICITY

Text: State Curriculum

Readability:

Modifications Adaptations: The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (103 pp./17 lessons)
(Diagrams included)
- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Simple Percentages
- Powers and Roots
- Calculating Size
- Electrical Calculations
- AC Fundamentals

"Rough-In Code Questions" ("Author Program" - TRS-80 program)

"Rough-In Code Questions" ("Remember!" - IBM program, mathematics & vocabulary)

Text: Journeyman Electrician's Workbook: Exam Preparation-Upgrading
(based on the 1987 NEC), by James Stallcup

Readability:

Modifications Adaptations: Chapters 3 - 6, ("Teacher's Quiz Designer" - IBM program)

Misc Materials Modifications & Adaptations: Quizzes & Study Guides (31 lessons in 4 booklets) - Computer Assisted Instruction
- Rotating Machinery Explained: Single-Phase AC Motors
- Electrical House Wiring Explained

- Rotating Machinery Explained: Direct Current Motors
- Residential Electrical Wiring

COSMETOLOGY

Text: Cosmetology State Board Exam Review

Readability:

Modifications Adaptations: All questions, including Practice Tests #1 & #2 ("Remember!" - IBM program)

Misc Materials Modifications & Adaptations: Cosmetology Vocabulary (48 lessons) ("Remember!" - IBM program)

DIESEL MECHANICS

Text: Diesel Fundamentals
Mid America Vocational Curriculum Consortium, Inc., 1988

Readability: Low 11 (Fry)

Modifications Adaptations: Lowered readability -

Unit 1A	Intro to Diesel Mechanics & Safety	modified 7.92
Units 2A, 3A, 4A		not changed
Unit 5A	Bearings	modified 5.36
Unit 6A	Seals	modified 6.77
Unit 1B	Engine Op.Principals	modified 5.74
Unit 2B	Cylinder Head Assembly	modified 5.57
Units 3B, 4B, 5B		not changed
Unit 6B	Crankshafts & Bearings	modified 6.2
Unit 1C	Lubricants & Lubricating Systems	modified 7.64
Unit 2C	Coolants & Cooling Systems	modified 6.39
Unit 3C	Air Intake & Exhaust Systems	modified 6.07
Unit 4C	Engine Brakes & Retarders	modified 8.67
Unit 1D	Preventive Maintenance	modified 5.5
Unit 2D	Troubleshooting & Testing of Engines	modified 7.64

Text: Diesel Electrical Systems
Mid America Vocational Curriculum Consortium, Inc., 1988

Readability: Low 11 (Fry)

Modifications Adaptations: Tape Recorded Units for Resource Room:

Unit I	Introduction to Electrical Systems
Unit II	Electrical Circuits
Unit III	Electrical Indicator Systems
Unit IV	Storage Batteries
Unit V	Starting Systems & Circuits
Unit VI	Ignition Circuits

Unit VII	Alternator Charging Circuits	
Unit VIII	Emergency Shutdown Circuits	

Text: Diesel Electronics
Mid America Vocational Curriculum Consortium, Inc.

Readability:

Modifications Adaptations: Lowered readability tests:

Unit I	Introduction to Electrical Systems	modified 8.11
Unit II	Electrical Circuits	modified 7.10
Unit III	Electrical Indicator Circuits	modified 7.34
Unit IV	Storage Batteries	modified 7.33

Text: Engine Performance

Readability:

Modifications Adaptations: Tape-recorded chapters 5-8
Color-coded entire text (15 chapters)

Misc Materials Modifications & Adaptations: The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (94 pgs/14 lessons) (Diagrams included)
- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Simple Percentages
- Fraction/Decimal Conversion

Diesel Mechanics Fuel Systems Vocabulary (39 lessons) ("Remember!" - IBM program)
Diesel Mechanics Electrical Systems Vocabulary ("Remember!" - IBM program)
Diesel Mechanics Applied Math ("Remember!" - IBM program)
Lowered Readability of all final tests.

DRAFTING

Text: Basic Drafting Book 2; State Curriculum, 1981

Readability:

Modifications
Adaptations: Drafting Vocabulary (20 lessons)
("Remember!" - IBM program)

ELECTRONICS

Text: Electricity Principles and Applications
McGraw-Hill, 1989

Electronics Principles and Applications
McGraw-Hill, 1989

Readability: Low 10

Modifications Adaptations: Electricity Text, Color coded all chapters
Tape recorded chapter 7

Electronics Text, Color coded chapters, 1-9

Modified the following tests for both texts:

Chapter 4 Test -		
Fry Readability	(original)	Low 11
	(modified)	Low 9
Rightwriter Readability	(modified)	5.61
Chapter 5 Test -		
Fry Readability	(original)	range 10 - 11
	(modified)	same
Rightwriter Readability	(modified)	6.44
Chapter 7 Test -		
Fry Readability	(original)	Low 10
	(modified)	H 9 - Low 10
Rightwriter Readability	(original)	8.54
	(modified)	5.49 - 7.80
Chapter 8 - Test -		
Fry Readability	(original)	
	(modified)	H 9
Rightwriter Readability	(modified)	8.15
Chapter 9 - Test - (Operational Amplifiers)		
Rightwriter Readability	(modified)	9.68
Chapter 9 - Test - (Power in AC Circuits)		

Rightwriter Readability (modified) 6.33
Chapter 10 - Test
Rightwriter Readability (modified) 8.78

Chapter 11 - Test - Oscillators
Chapter 11 - Test - Inductance
Rightwriter Readability (modified) 8.33

Text: Communications Electronics (Basic Skills in Electricity and Electronics)
McGraw-Hill, Inc., 1989

Readability: 17+

Modifications: Color coded, chapters 1-6

Text: Digital Electronics
McGraw-Hill, 1990

Readability: 17+

Modifications: Color-coded chapters 1-3

Misc Materials

Modifications: Electronics Applied Math
("Remember!" - IBM program)

Electronics Vocabulary and Basic Mathematics (16 lessons)
("Remember!" - IBM program)

Transportation Electronics Vocabulary (15 lessons)
("Remember!" - IBM program)

LAW ENFORCEMENT

Text:	Criminal Justice, third edition Harcourt Brace Jovanovich Publishers
Readability:	17+
Modifications Adaptations:	Tape Recorded and Color coded, chapters 4 and 5

MACHINE TOOL

Text: State Curriculum

Readability:

Modifications Adaptations: The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (55 pp./18 lessons) (Diagrams included)

- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Calculating Drill Size for Tapping
- Fraction/Decimal Conversion
- Simple Percentages
- Calculations Used to Machine Angles
- Using a Calculator
- Angular Measurement with Basic Trigonometry Formulas

Basic Machine Tool Vocabulary (29 units)
("Remember!" - IBM program)

Text: Basic Blueprint Reading & Sketching
Delmar, 1988

Readability: low 8 - low 16

Modifications Adaptations: Units 1-41, ("Remember!" - IBM program)

MARKETING

Text: Marketing Principles and Practices; McGraw Hill, 1986

Readability: (Fry) Low 9th

Modifications Adaptations: Tape recorded & Color Coded
- Chapters 29 - 31

Color coded
- 35 Chapters, 5 copies

Text: Vocational Mathematics for Business
Southwestern, 1984

Readability: 9.2

Modifications: Color coded chapters, 1-5

Text: Vocational Applied Math
Office of Vocational Education, Atlanta Ga, 1987

Readability:

Modifications: Color coded, all 7 units

Text: Business in Action - An Introducation to Business
Macmillan/McGraw Hill, 1989

Readability: 17+

Modifications Adaptations: Color coded, chapters 1-6

Text:	Gadgetronics - A Retail Decision Making Simulation South-Western Publishing Co., 1985
Readability:	Low 10th
Modifications Adaptations:	Color-coded chapters 1-6, 2 books
Text:	The Winning Streak - A Marketing Decision-Making Simulation South-Western Publishing Co., 1992
Readability:	Low 11th
Modifications Adaptations:	Color-coded, chapter 1

MOTORCYCLE MECHANICS

Text: Motorcycle Mechanic
Mid American Vocational Curriculum Consortium, 1988

Readability: (Fry) Low 10th

Modifications Adaptations:

Copies of modified tests to Instructor and Resource Room
Tapes to Resource Room

Unit 1 - Information Sheets, tape-recorded

Unit 2 Test - General Safety
Rightwriter Readability (modified) 6.14
Information Sheets, tape-recorded

Unit 3 Test - Tools and Equipment
Rightwriter Readability (modified) 6.36
Information Sheets, tape-recorded

Unit 4 Test - Metric Measurements
Rightwriter Readability (modified) 6.96
Information Sheets, tape-recorded

Unit 5 Test - Fasteners
Rightwriter Readability (modified) 5.78
Information Sheets, tape-recorded

Unit 6 Test - Service Dept Operations
Rightwriter Readability (modified) 9.23

Unit 7 Test - Motorcycle Engines
Rightwriter Readability (modified) 6.47

Unit 7 Information Sheets - Tape recorded

Unit 9 Test - Carburetors & Fuel Systems
Fry Readability (modified) Low 7th
Rightwriter Readability (modified) 7.72

Unit 10 Test - Wheels & Tires
Rightwriter Readability (modified) 5.70

Unit 11 Test - Steering & Suspension
Rightwriter Readability (modified) 6.35

Unit 12 Test - Brakes
Rightwriter Readability (modified) 6.00

Unit 13 Test - Clutches
Rightwriter Readability (modified) 5.93

Unit 14 Test - Starting Systems
Rightwriter Readability (modified) 6.76

Unit 15 Test - Basic Ignition Tune-Up
Rightwriter Readability (modified) 8.83

Unit 16 Test - Basic Engine Tune-Up
Rightwriter Readability (modified) 6.90

Unit 17 Test - Basic Chassis Tune-up
Rightwriter Readability (modified) 5.82

Unit 18 - Test Assembly & Pre Delivery
Rightwriter Readability (modified) 7.98

Unit 19 Test - One-Cylinder Engine
Top-End Service
Rightwriter Readability (modified) 5.85

Misc Materials Modifications Adaptations:

The following materials were adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (37 pp./21 lessons)
- Addition, Subtraction, Multiplication, & Division of Whole Numbers, Fractions, & Decimals
- Addition, Subtraction, Multiplication, & Division of Decimals and Percentages
- Calculating Work Orders

Basic Motorcycle Mechanics Vocabulary (21 lessons)
("Remember!" - IBM program)

Motorcycle Mechanics Applied Mathematics (8 lessons)
("Remember!" - IBM program)

Study Guides for Locating Inventory & Cataloging Information on micro-fiche

- Honda CB650SC, Frame #RC130-EM100081
- Yamaha YT175K, Frame #ZOE-000101, 1983
- Suzuki GS850GT, Frame #GS850-12345
- Suzuki GS1100 ET, Frame #GS110X-500001
- Honda VF1000R,SC160, GM100087, 85-86
- Honda CBR1000F, 1000 Hurr 87-88, Frame #SC210-JA100102
- Yamaha Y2125C, Frame #537-000101
- Yamaha TT500E, Frame #1T1 - 100101
- Yamaha XV750H, Frame #4x7-000101, 1981
- Yamaha IT425G, Frame # 3R8-000101, 1980

Study Guides for Service Catalogs/Manuals

- 88 GL1500 Honda
- Kawasaki KZ 440 A1US Model
- 79 CB400T
- 89 GB500 Honda
- 90 CB400F
- 85-89 XR100R
- 89 VTR250 Honda

Word Searches on Word Works Program, Units 1-5 State Curr

OFFSET PRINTING

Text: Graphic Arts - Orientation, Composition, Paste-Up
Graphic Arts - Process Camera, Stripping, Platemaking
Mid America Vocational Consortium, Inc., 1990

Readability: Low 16th

Modifications Adaptations: Instructor makes own modifications and adaptations.

Offset Printing Vocabulary from the State-Adopted Curriculum Guide (in progress)
("Remember!" - IBM program)

PRINCIPLES OF TECHNOLOGY

Text:	Principles of Technology Center for Occupational Research and Development, 1986
Readability:	Low 11, Range low 8 - low 15
Modifications Adaptations:	Color-coded - Unit I - Force, sub-units 1 & 2 Unit II - Work, sub-units 1, 2, & 3
Misc Materials Modifications & Adaptations:	20 each highlighter markers for student use.

RESOURCE ROOM/HOME SCHOOL/SUMMER SCHOOL

Text: Literature

Readability:

Modifications
Adaptations: Tape Recorded
"The Bear"
"The Life You Save May Be Your Own"
"Big Two Hearted River" Part II, pages 452-459
"The Chrysanthemums," pages 461-468
"The Prison," pages 580-585
"Did You Ever Dream Lucky?," pages 596-605

Text: The Pageant of World History
by Leinwald

Readability: 11th

Modifications
Adaptations: Color coded, chapters 1 - 35, 3 texts
Tape Recorded, chapters 12 - 19

Text: Modern Biology
by Albert Towle, 1989

Modifications
Adaptations: Vocabulary, chapters 6-11, 49-53
("Remember!" - IBM program)

Basic Computer Terminology
("Remember!" - IBM program)

Text: Focus on Physical Science; Merrill Heimler/Price

Modifications
Adaptations: Chapters 1 - 5

Chapters 8 - 11
- Tape Recorded

Text: Biological Science, An Ecological Approach

Readability: 10.2

Modifications Adaptations: Color coded, chapters 1-5

Text: Biology, An Everyday Experience

Readability: 7.2

Modifications Adaptations: Color coded, chapters 1-5, 32

Text: Physical Science
Addison-Wesley

Readability: 9.3

Modifications Adaptations: Color coded, chapters 1-9
Tape recorded, chapters 1-9

Text: Biology
Prentice-Hall, 1990

Readability: Range 9 - 17+

Modifications Adaptations: Color-coded and Tape-recorded,
Chapter 16 - Protozoans
Chapter 26 - Worms
Chapter 32 - Reptiles

Word Searches, Chapter 32

Misc Materials Modifications & Adaptations:

Basic English Skills
(capitalization, punctuation, grammar, editing)
from the Gregg Reference Manual (text)
("Grammar Examiner" - IBM program)

Basic Accounting Fundamentals Vocabulary
("Remember!" - IBM)

Vocabulary for The World of Work I & II (20 lessons)
("Remember!" - IBM)

TABE Tests for Forms 5 & 6, Levels E, M, D, & A (8 sections)
("Writing Assistant" - IBM program)

GED Practice Test, Form AA
Tape recorded

VICA Tests, # 1-5 (Vocational Industrial Clubs of America)
("Remember!" - IBM)

WELDING

Text: Welding Introduction; State Curriculum, 1984

Readability:

Modifications
Adaptations: The following materials adapted on "Displaywrite3" (disk & print-out):

Technical Calculations for Applied Math (74 lessons)
- Addition, Subtraction. Multiplication, & Division of Whole Numbers, Fractions, & Decimals

Basic Welding Vocabulary (21 lessons)
("Remember!" - IBM program)

Text: Blueprint Readings for Welders ,
Delmar, 1988

Readability: Low 10th

Modifications
Adaptations: Color-coded and study guides, entire text
Math Problems & Vocabulary
("Remember!" - IBM program)

APPENDIX D

EXHIBITS

EXHIBIT 1

PROJECT GRADS TEACHER SURVEY

Instructor: _____ Course: _____

In order to improve Project GRADS for next year, we are collecting feedback information from teachers and students. Please assist us by filling out this short survey.

1. Do you have GRADS students in your program? How many?

_____

2. Do your GRADS students attend the Learning Resource Center? _____

3. Do your GRADS students attend counseling sessions? _____

4. Have materiasl been developed or adapted for your course? _____
   Have you made any special requests for materials? _____
   Briefly describe the quality and usefulness of the materials:

_____

_____

   Were the materials developed in a timely manner?

_____

   Are there other materials you would like to have developed or adapted?

_____

5. Have you observed any changes in students who attend GRADS group counseling? _____
   Please give a description or an example: _____

_____

_____

6. Do you think Project GRADS has helped at-risk students stay in school or be more successful in school? Why or why not?

_____

_____

_____

7. What recommendations would you make for next year?

EXHIBIT 2

PROJECT GRADS TEACHER SURVEY RESULTS 5/15/90

Instructor: *15 instructors, 2 aides, 1 resource room* Course: *15*

In order to improve Project GRADS for next year, we are collecting feedback information from teachers and students. Please assist us by filling out this short survey.

1. Do you have GRADS students in your program? How many?
   47 - yes, 0 - no.

2. Do your GRADS students attend the Learning Resource Center?
   14 - yes, 3 - no.

3. Do your GRADS students attend counseling sessions? *16 - yes, 3 - no*

4. Have materials been developed or adapted for your course?
   16 - yes, 1 - no

   Have you made any special requests for materials? *11 - yes, 6 - no*
   Briefly describe the quality and usefulness of the materials:
   -Tests re-written to a better reading format.
   -Some it helps, for others not as much - may be due to lack of interest of individual differences.
   -Currently using - Don't know outcome yet.
   -Applied Math and Reading materials.
   -Had chapters from my text taped for students who are not good readers.
   -Redoing test to get rid of fill in the black questions.
   -Putting curriculum on audio cassettes.
   -Very good. Helped students in how to study - students need to use it more.
   -Excellent.
   -The materials are computer related and are working great.
   -National Electrical Code Questions installed on the TRS 80 author program.
   -Put Blueprint Reading on computers.
   -Word Search for Medical Abbreviations & 2 textbooks color coded - excellent.
   Were the materials developed in a timely manner? *11 - yes, 6 - n/a*

Are there other materials you would like to have developed or adapted? *10 - yes*

5. Have you observed any changes in students who attend GRADS group counseling? *10 - yes, 4 - no*

Please give a description or an example:

-Student is average in class. Hasn't had may more absences than others, works well and has a good attitude.

-Some are improving performance & grades due to instructor & counselor interventions.

-Didn't know them very well prior to counseling.

-Improved attitude.

-Complete turnaround from a student with an "I don't care" attitude to one of the top students as far as studying, grades & performance. Student now takes pride in himself & appearance.

-Female students seem able to handle anger better. Male student is still having problems with home, job, and attendance.

-Able to discuss problems more openly.

-Is able to keep positive attitude and work hard.

-Interested, stays busy making progress which is encouraging to him, went to contest.

-Students has home problems - When he comes he is a good hard worker, honest, and cautions.

-Some students have been resistant to attending counseling.

6. Do you think Project GRADS has helped at-risk students stay in school or be more successful in school? Why or why not?

-Student resisted group at first, due to feeling "different" about being pulled out. He got over that. If it hadn't been for the projects quick intervention, he would have been lost the first semester.

-All 4 students involved in the project are still in school. I feel that I had other students that could have benefited to a greater degree. some of the other students dropped out.

-Yes, the test rewriting has raised test scores in some students.

-Yes, by helping them achieve success they are more interested in staying in school. Student will return next year.

-Yes, Helped them to stay in school.

-Yes, showing them someone cares.

-Too early to tell.

-Yes, demonstrates people really care, their problems aren't unique, and allows an environment form them to blow off steam.

-The project helps keep them interested.

7. What recommendations would you make for next year?

-Inform the instructors as to what the student is doing, studying, or being taught. Keep the instructors more informed.

-Give the parents and instructors more information about what is going on.

-Look at other criteria for selection of students - past history (family).

-Allow the instructor to suggest Juniors after 2-3 weeks in class.

-Coordinate/confirm scheduling-address with the students the need to go to the learning center and group counseling.

-I would like to be able to recommend students to center.

-More inservice and information to instructors about the program.

-More time in the learning center.

-Make arrangements for counseling when students work off campus.

-Change way of selecting and perfect counseling.

-Promote project with instructors within the school.

EXHIBIT 3

PROJECT GRADS TEACHER SURVEY RESULTS 5/15/92

Instructor: *18 instructors* Course: *18*

In order to improve Project GRADS for next year, we are collecting feedback information from teachers and students. Please assist us by filling out this short survey.

1. Do you have GRADS students in your program? How many?
   18 - yes, 0 - no.

2. Do your GRADS students attend the Learning Resource Center?
   17 - yes, 1- no.

3. Do your GRADS students attend counseling sessions? *15 - yes, 3 - no*

4. Have materials been developed or adapted for your course?
   15 - yes, 3- no

   Have you made any special requests for materials? *10 - yes, 8 - no*
   Briefly describe the quality and usefulness of the materials:
   - *Very Good!*
   - *Materials were basic and up to date for students entering field.*
   - *Color coding for special needs students and computer tests were very useful for the students.*
   - *Easier for the students to read.*
   - *Color coded books were very beneficial to students and myself.*
   - *We used the applied communication and resurme development. Both were high quality and very useful.*
   - *Color coded books for students highlighting vocabulary terms, formulas, main points were extremely useful.*
   - *Chapters have been tape recorded and highlighted.*

   Were the materials developed in a timely manner? *11 - yes, 7- n/a*

   Are there other materials you would like to have developed or adapted? *9 - yes*

5. Have you observed any changes in students who attend GRADS group counseling? *12 - yes, 6- no*
   Please give a description or an example:

-Students appear to have matured and established better values.
-Students who attend grads counseling seem to get an insight into what they need to be a better students and citizen.
-More interest in what is happening in the classroom.
-Students who attend seem to have a better attitude.
-Attendance and attitudes are better.
-They seem to talk openly about their lives. Like we should all sit and listen and empathize.

6. Do you think Project GRADS has helped at-risk students stay in school or be more successful in school? Why or why not?
-Yes, I would assume the counseling helps students to know themselves better, gaining a greater understanding in the value of education thus creating better self-esteem.
-It helps the student to talk about their problems with other students.
-Yes, through identifying learning styles patterns common to at-risk students and developing plans for accommodating the needs of these students.
-Yes, it has given the at-risk students a better interest in their school work.
-Yes, GRADS gives students more incentive to learn their trade and gives them a chance to speak their mind of what troubles them.
-Yes, the counseling sessions as well as the individual one on one time has prevented at least one student from dropping out.
-Project seems to have helped some students but not all.

7. What recommendations would you make for next year?
-Instructors need more information about project.
-Keep the instructors more informed.
-Ask instructors about when students are out of class.
-I would like to be able to recommend students to center.
-More inservice and information to instructors about the program.
-A great project!
-Make arrangements for counseling when students work off campus.
-Other students needed help beside those chosen.
-That self-esteem and how to fit in be stressed and not so much that it is O.K. not to fit in

VITA

Kathryn Kelly Langley

Candidate for the Degree of

Doctor of Philosophy

Thesis: A PROGRAM EVALUATION OF PROJECT GRADS: A DROPOUT PREVENTION PROGRAM

Major Field: Applied Behavioral Studies

Biographical:

Personal Data: Born in Lawton, Oklahoma, May 7, 1964, daughter of Iris O. Langley.

Education: Graduated from Elgin High School, Elgin, Oklahoma, in May, 1982; received Bachelor of Arts degree from the University of Science and Arts of Oklahoma in May, 1986; received Master of Science degree from Oklahoma State University in May, 1989; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in May, 1993.

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