

A CAUSAL-COMPARATIVE STUDY OF DROPOUTS FROM MOSES LAKE,
MEAD, AND KENNEWICK HIGH SCHOOLS IN EASTERN WASHINGTON.

A Special Project
Presented to
Dr. Jack L. McPherson
Heritage University

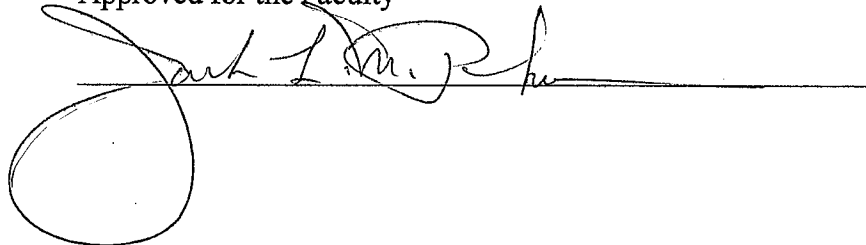
In Partial Fulfillment
Of the Requirement for the Degree of
Master of Education

Robert D. Schroeder
Spring, 2006

FACULTY APPROVAL

A CAUSAL-COMPARATIVE STUDY OF DROPOUTS FROM
MOSES LAKE, MEAD, AND KENNEWICK HIGH SCHOOLS IN
EASTERN WASHINGTON.

Approved for the Faculty

 Faculty Advisor

ABSTRACT

The purpose of this causal-comparative research study was to seek reliable data concerning the dropout rate at MLHS in recent years; to compare the MLHS dropout rate with other selected eastern Washington high schools; and, to obtain greater understanding of factors contributing to the high school dropout problem and possible solutions. To accomplish this purpose, a review of selected literature was conducted, related baseline data were analyzed, and conclusions and recommendations were formulated.

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Chapter 1

Introduction

Background for the Project

Information about high school graduation and dropout rates has become increasingly important with the advent of new state and federal accountability systems. More research is now being conducted on high schools and the dropout problem, and graduation issues are the subject of more discussions nationally (Shannon and Bylsma, 2003), "Helping Students Finish School: Why Students Drop Out and How to Help Them Graduate." (p.3).

The authorities cited in the above statement, alluded to the consequences of not graduating from high school and to the need for federal and state governments to carefully monitor dropout data.

According to Lewis (2004), not graduating from high school has posed serious problems for communities and schools. This authority cited the federal, "No Child Left Behind Act of 2001," which has required states to report students who do not graduate on time. The State of Washington OSPI has required school districts to report students that leave school without a high school diploma.

Statement of the Problem

The researcher (Robert D. Schroeder) has been employed since 1997 as a vocational television instructor at Moses Lake High School (MLHS) in Moses Lake, Washington. During this time the researcher has worked with numerous students that were experiencing difficulties

with academic classes and who were in danger of not graduating on-time or dropping out of high school. The researcher was also aware of recent information reported by Stuber in the Columbia Basin Herald, (2005), "that Moses Lake High School had one of the worst on-time graduation rates in the state." (p.1). The impact of this information in the local newspaper, combined with disclosure of the fact that MLHS did not meet federal Annual Yearly Progress (AYP) standards, aroused community concern about a high school dropout rate which was reported to be in excess of 50 per cent.

Concerned about: (a) the dropout problem at the MLHS; and (b) interested in learning how the dropout are at MLHS compared with other eastern Washington high schools of similar size, this researcher undertook the present study. Accordingly, answers to the following questions were sought:

1. What data are available to confirm the student dropout rate at the MLHS in recent years?
2. How does the dropout rate at MLHS compare with other selected high schools in eastern Washington?
3. In general which factors have contributed to the high school dropout problem, and what are possible solutions?

Purpose of the Project

The purpose of this causal-comparative research study was to seek reliable data concerning the dropout rate at MLHS in recent years; to compare the MLHS dropout rate with other selected eastern Washington high schools; and, to obtain greater understanding of factors contributing to the high school dropout problem and possible solutions. To accomplish this

purpose, a review of selected literature was conducted, related baseline data were analyzed, and conclusions and recommendations were formulated.

Delimitations

The preponderance of data considered for purposes of the present study was current during the past five (5) years. The age of the student population addressed in the study focused on grades 9-12. Student dropout data provided by the Washington State OSPI was essential for comparing school dropouts from high schools in the three (3) selected school districts (i.e. Moses Lake, Mead, and Kennewick). Criteria used to determine low family income between high school districts were limited to: (a) the number of students receiving free or reduced-price meals; and, (b) the number of students enrolled in transitional bilingual educational programs. It should be noted that OSPI data reporting the percentage of low income families was only available for the 2003-2004 school year.

Assumptions

Assumptions were made that the study would provide the investigator (Robert D. Schroeder) with:

1. Data needed to confirm the student dropout rate at MLHS in recent years.
2. Data needed to compare the incidence of dropouts at Moses Lake, Mead, and Kennewick high schools.
3. Information needed to formulate generalized perceptions of factors contributing to the school dropout problem as well as possible solutions.

Hypothesis

The incidences of high school dropouts from selected schools with higher levels of low income families will be higher than those from high schools with lower levels of low income families.

Significance of the Project

In their 2003 report, Shannon and Bylsma explained that receiving a high school diploma is a "milestone that society now expects of its citizens." (p.3). These authorities further explained how, in recent years, earning a high school diploma has become common practice. Less than 7 percent of adults age 25 or older earned a high school diploma 100 years ago, but by 2000, more than 84 percent had completed high school or its equivalent.

Not finishing high school has become a handicap for both the individual who drops out and for the greater society. As stated in the report cited above:

Students who drop out are less likely to be employed and will earn less over their working lives. The need for a higher skilled labor force will make it even harder for dropouts to find good jobs. Dropouts tend to experience higher rates of early pregnancy and substance abuse, and they often require more social services of various types. Young people who are imprisoned are likely to be school dropouts. (p.3).

More significantly this investigators concerns related to a dropout rate reported to be in

excess of 50 percent at MLHS, combined with the knowledge that MLHS had not met AYP standards during 2005, were of particular importance in making the determination to undertake the present study.

Procedure

The procedure undertaken for purposes of the present study evolved in several stages. The topic selected for investigation was identified and developed during the investigator's Heritage University graduate course work, taken during 2004-2005. The choice of topic coincided with the researcher's career interests related to the field of education and concern over the dropout problem in Moses Lake, heightened by: (a) participation on the MLHS Dropout Committee; and, (b) by the fact that MLHS did not meet AYP standards. During the same time period, OSPI baseline data essential for statistical analysis were obtained, and a review of selected literature was conducted. During fall and spring semesters, 2005-2006, research data were analyzed and conclusions and recommendations were formulated.

Definition of Terms

Significant of terms used in the context of the present study have been defined as follows:

At-Risk. For purposes of this study, at-risk could mean a young person was chemically dependent, a school dropout, suicidal, either pregnant or potentially pregnant in teen years, or alcoholic.

Causal- Comparative Research. Research that attempts to determine the reasons for existing differences in the behavior or status of groups of individuals. Causal-comparative

research is sometimes treated as a type of descriptive research because it too describes conditions that already exist (e.g., family income).

Chi Square. Chi square is test of significance appropriate when the data are in the form of frequency counts. The test compares proportions actually observed in a study with expected proportions to see if they are significantly different.

Descriptive Research. Sometimes referred to as “survey research,” an attempt is made to collect data from members of a population to determine the current status of that population with respect to one or more variables.

Dropout. A dropout is a student who leaves school for any reason, except death, before completing school with a regular diploma and does not transfer to another school. A student is considered a dropout regardless of when dropping out occurs (ie., during or between regular school terms). A student who leaves during the year but returns during the reporting period (including summer program) is not a dropout. Students who received a GED certificate are also categorized as dropouts.

Free or Reduced-Price Meals. Refers to the federally subsidized program in public schools which provides meals at school for students from low-income, poverty-level families.

Graduation Rate. The percentage of students who graduate in the standard number of years (i.e, on-time) with a regular diploma.

Low Income Families. Criteria used by the OSPI to determine low family income include: Number of students in federally subsidized free and reduced-price meal programs; and number of students enrolled in transitional bilingual education programs.

Transitional Bilingual. Refers to programs designed to help students with “limited

English proficiency” (LEP) and/or students enrolled in those programs. Such programs are intended to support and to provide services to help LEP students. “Transitional Bilingual” may be considered by some to represent a generic/overarching term encompassing Bilingual (BL), English as a Second Language (ESL), and English Language Learners (ELL).

Acronyms:

AYP: Adequate Yearly Process

BL: Bilingual

ESL: English as a Second Language

GED: General Education Development

LEP: limited English proficiency

MLSD: Moses Lake School District

NCLB: No Child Left Behind

OSPI: Office of Superintendent of Public Instruction

SSD: Spokane School District

Chapter 2

Review of Selected Literature

Introduction

~~The~~ Review of the selected literature presented in Chapter 2 has been organized to address:

1. The student dropout problem and related questions
2. History of dropouts in America
3. Why students dropout of school
4. Dropout prevention strategies
5. Summary

Research current primarily within the past five (5) years was identified through an Educational Resources Information Centers (ERIC) computer search, and by means of an internet investigation. A hand-search of various additional sources was also conducted.

The Student Dropout Problem and Related Questions

Lewis discussed students who left high school before graduation without a diploma and who did not return. This authority defined a school dropout as follows:

A dropout is a student who leaves school for any reason, except death, before completing school with a regular diploma and does not transfer to another school. A student is considered a dropout regardless of when dropping out occurs during or between regular school terms. A student who leaves during the year but returns during the reporting period (including summer program) is not a dropout. Students who completed another type of school program

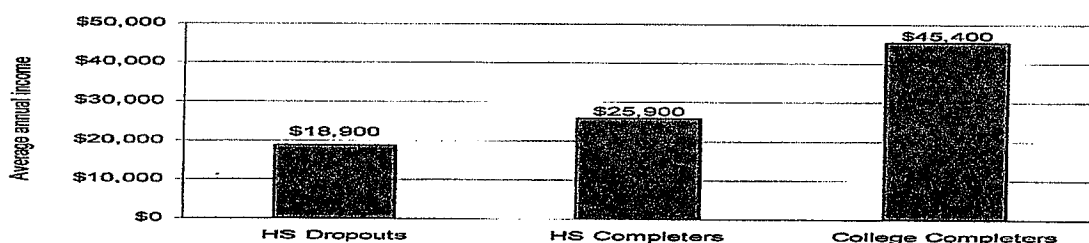
(i.e., GED or IEP) are also considered dropouts. Some students leave before

entering ninth grade, but most drop out during their high school years. (p.7)

According to Montecel (2004), the student dropout problem in America has posed difficulties for students, teachers, parents, as well as school districts and the communities that have to support these students after they leave high school. In the late 1990's, research conducted by this authority raised three important questions. The first question was: How many students were dropping out? Answer: In the state of Texas alone, more than 86,000 students did not graduate from high school. The second question was: Why are the students leaving? Answer: Students left for many reasons, but a lack of connection with the school and with the teachers was an underlying theme. The third question was: What is it costing taxpayers? Answer: \$17.2 billion over the lifetime of the students in lost income, lost tax base, increased unemployment costs, increased criminal justice costs, increased welfare costs, and student dropouts often ended up living in poverty.

As shown in *Figure 1*, data cited in the 2003 Shannon, Bylsma report indicated that, with regard to annual income by education level, from 1997- 1999: High school dropouts earned

Figure 1: Annual Income by Education Level, Washington State, 1997-1999.



\$18,900; high school completers earned \$25,900; and college completers earned \$45,400.

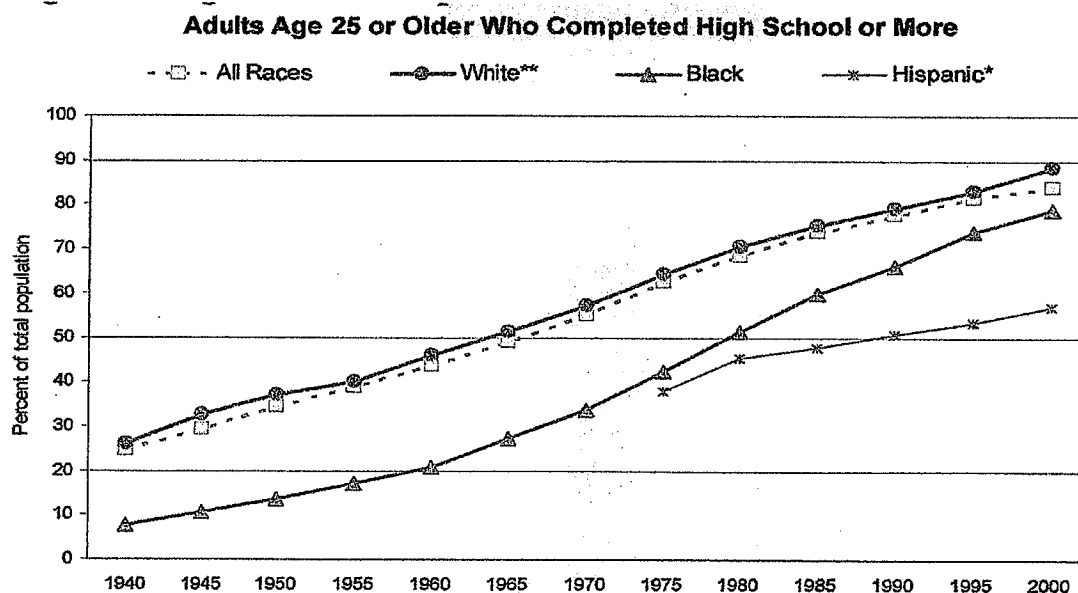
History of Dropouts in America

The graduation rate in America in the 1900's was only 6.4% for of seventeen-year-olds (Fine, 1991). Although the graduation rate rose throughout the twentieth century, the dropout rate remained the same (Dorn, 1996). In the 1940's, at the end of World War II, adults leaving high school without a diploma was common practice rather than the exception. By the 1990's, the national graduation rate had increased to 86%.

Shannon and Bylsma further explained how leaving high school for whatever reason, in prior years, was a common experience in American life. The community as a whole did not really care if students left high school to go to work or to go into the military. In the 1940's, if a student left high school for the war or to work in a factory, this act was almost anticipated by the student and parents. As graduation came to be the common experience, only then did parents become concerned about the student staying in high school. During the 1960's, the term dropout became a negative word, often associated with "deviant," meaning "juvenile delinquent."

Data shown in *Figure 2* has detailed Washington State completion trends for different ethnic groups, from 1940-2000. Of particular interest was the fact that the higher completion rates for all races, has risen from 25% in 1940, to 90% in 2000. (Shannon and Bylsma).

Figure 2: Washington State High School Completion Trends , 1940 - 2000.



Why Students Drop Out of High School

Numerous research authorities attempted to explain the reasons contributing to at-risk student status and to factors contributing to decisions to drop out of high school. These reasons may include both educational and non-educational factors as well as other complex family and negative societal issues, as discussed below.

Educational Institutions have Contributed to the Dropout Problem

Educational institutions themselves have contributed to the dropout problem. Discipline and grading policies, school organization and size, program assignments, course content, type of instruction, school climate and adult-student relationships can all influence students to drop out.

Shannon, Bylsma contended that "lack of engagement" and "membership in school," are terms

that capture some of the reasons why students quit high school. This authority identified school-related factors as:

Conflict between home and school culture.

Ineffective discipline system.

Lack of adequate counseling.

Negative school climate.

Lack of relevant curriculum.

Passive instructional strategies.

Inappropriate use of technology.

Disregard of student learning styles.

Retention/suspensions.

Low expectations.

Lack of language instruction. (p.32).

Overt actions by administrators and teachers in the form of discipline, attendance, grading, assessments and retention have contributed to the high school problem. School administrators and teachers have good intentions, but meaningless ritual can help push students out the door. If high schools are inflexible in rules and regulations, students feel alienated, schools are uncomfortable and unnatural places for some students (Fine). This researcher described these phenomena as follows:

For many students, schooling signifies institutional hypocrisy and aimlessness, rather than consistency and clarity of purpose, arbitrariness and inequity, rather than fairness; ridicule and humiliation, rather than personal support and respect;

and worst of all, failure, rather than success. For others, the disaffection can seem personally damaging school is seen as a theater of meaningless ritual, unrelated to student's serious concerns. (p.3).

Other Factors Contributing to High School Dropouts

Educators have limited impact on a number of factors that influence students to drop out. Some of the focus should be on the students. Families that fit the profile of students who drop out were:

Students from low socioeconomic background

Students of color, particularly Hispanic, Native American, and African American.

Students who change schools frequently.

Students with poor academic achievement.

Students with poor school attendance.

Students who have repeated one or more grades.

Students who speak a primary language other than English.

Students who attend schools in large cities.

Students who have friends or family members who have dropped out.

Students who have illness or disability.

Students who become pregnant.

Students who have low self-esteem. (Shanno and Bylsma, p. 44).

Fine cautioned that educators should not try to predict which students will drop out based on risk factors, because many dropouts do not fit the profile, whereas many that do fit the profile

finish school on time. The majority of dropouts have become so disengaged from high school by tenth grade that withdrawal is inevitable. Solving the dropout problem requires changing the educational system to serve students better.

Dropout Prevention Strategies

Woods (1995), described how dropout prevention and dropout recovery programs have been developed and implemented with varying degrees of success over the past forty years. This researcher suggested that reducing dropout rates and increasing graduation rates requires a change in high schools and teachers, and a willingness to create new programs. Said Woods:

There is no magical, quick fix solution to the dropout problem. The problem is complex and requires a complex array of solutions. Dropouts have dissimilar characteristics and therefore need different kinds of programs which respond to their individual circumstances and needs. (p.13).

According to Shannon and Bylsma, students need productive classrooms and positive teachers. Classrooms must reflect the following characteristics to help students make a positive commitment to staying in high school:

Positive atmosphere and supportive peer culture.

Discipline system that is both fair and effective.

Person-oriented rather than rule-oriented classes.

Decision-making opportunities for students.

Opportunities to develop self-esteem and self-confidence.

Instruction and opportunities to help students develop a commitment to social and life values.

Opportunities to orient students to the broader world outside school, showing the correlation between education and work.

Opportunities for students to become aware of their potential as workers.

Parents as community volunteers and mentors.

Minimal structure and high flexibility.

Individualized and small-group instructional materials and practices.

Instructional methods that involve tactile, kinesthetic, and auditory perceptions.

Peer teaching and cooperative learning techniques.

Instructional activities that build group cohesiveness.

Promotion of cooperative behavior among students.

Basic skill development and integrating the use of basic and vocational skills.

Time on task for repeated practice. (p.17).

Summary

Research detailing the student dropout problem and selected, related literature presented in Chapter 2 supported the following themes:

1. The student dropout problem in America has resulted in billions of dollars in lost ~~income, lost~~ tax- based income, increased unemployment costs, increased criminal justice costs, increased welfare costs, and possibly resulting poverty for students who quit high school.
2. Although high school completion trends have improved significantly in recent years, school dropouts continue to pose major social and economic problems throughout America.

3. Factors contributing to student decisions to drop out of high school include educational, non-educational, and complex family and societal issues.
4. Dropout prevention strategies require a change in schools and teachers, and a willingness to create positive educational programs.
5. Incorporating audio, visual, kinesthetic, and problem-solving activities into high school instructional practices can help students make a positive commitment to staying in school.

CHAPTER 3

Methodology and Treatment of the Data

Introduction

The purpose of this causal-comparative research study was to seek reliable data concerning the dropout rate at MLHS in recent years; to compare the MLHS dropout rate with other selected eastern Washington high schools; and, to obtain greater understanding of factors contributing to the high school dropout problem and possible solutions. To accomplish this purpose, a review of selected literature was conducted, related baseline data were analyzed, and conclusions and recommendations were formulated.

Methodology

The present causal-comparative study sought to determine the number of dropouts from high schools in three, selected, eastern Washington school districts (i.e., Moses Lake, Mead, and Kennewick), by comparing schools with higher levels of low income families with schools with lower levels of low income families.* To make this determination, the researcher utilized descriptive baseline data provided by the Washington State Office of Superintendent of Public Instruction (OSPI), which were essential for making comparisons, drawing inferences, formulating conclusions, and making recommendations.

*Criteria cited by Bergeson in the 2001-2004 OSPI reports to determine low family income were: Number of students in federally subsidized free and reduced-price meal programs; and, numbers of students enrolled in transitional bilingual education programs.

Participants

Students enrolled in grades 9-12, from 2001-2004, from the following at eastern Washington school districts were included in the study:

Moses Lake School District:

Moses Lake High School

Mead School District:

Mead High School

Mt. Spokane High School

Kennewick School District:

Kennewick High School

Kamiakin High School

Instrument

Data unitized in this study was obtained by means of OSPI Form P-210 (Appendix A). Washington State Law (RCW 28A.174.010) requires school districts to account for the progress of each of its students in grades 9-12. To accomplish this, the OSPI surveys all schools districts to collect records for each student in grades 9-12. Each year, districts provide information on these students to OSPI on Form P-210 which includes data on the number of students who dropped out, completed school via graduation and other means (i.e. an individualized education program or IEP diploma, an adult diploma, or a GED credential), transferred out of school, and the reasons why students dropped out. The reporting period for the P-210 for each school year is defined as the first day of school in the fall, to the day before the first day of school in the fall of the next school year. Districts are required to report the data to OSPI by October 15.

The data reported on Form P-210 has been used for federal accountability purposes as well. To deter schools from discharging or "pushing out" low performing students in order to achieve better test results, the federal No Child Left Behind Act of 2001 (NCLB) requires the use of graduation rates when determining if a high school has made AYP. This law defines the graduation rate as "the percentage of students who graduate in the standard number of years (i.e., on-time) with a regular diploma." The law requires students who complete their education with a GED to be counted as dropouts. NCLB also requires states to report test and graduation rate data for nine groups of students: The major racial/ethnic groups, students with disabilities, students with limited English proficiency, students from low-income families, and all students combined.

Design

The present study utilized a one-dimensional, chi square test of significance to compare the difference, if any, between the number of the dropouts, from 2001-2004, from five high school in the Moses Lake, Mead, Kennewick school districts.

Procedure

The procedure undertaken for purposes of the present study evolved in several stages. The topic selected for investigation was identified and developed during the investigator's Heritage University graduate course work, taken during 2004-2005. The choice of topic coincided with the researcher's career interests related to the field of education and concern over the dropout problem in Moses Lake, heightened by: (a) participation on the MLHS Dropout Committee; and, (b) by the fact that MLHS did not meet AYP standards. During the same time period, OSPI baseline data essential for statistical analysis were obtained, and a review of

selected literature was conducted. During fall and spring semesters, 2005-2006, research data were analyzed, and conclusions and recommendation were formulated.

Treatment of Data

A one-dimensional, chi square test was used in this causal-comparative investigation to determine if there was any significant difference in the number of dropouts from the five high schools included in the study. Significance for p (probability) was determined at $p \geq .05$, .01, and .001, using STATPAK statistical software for data analysis. (Gay and Airasian, 1992). The independent variable was level of family income (i.e., an existing condition). The dependent variable (i.e., that which is being measured) was high school student dropout rate.

Summary

In this chapter, a description of the research methodology, participants, instrument used, research design, and procedure utilized was provided. Details concerning treatment of data obtained and analyzed were also presented.

CHAPTER 4

Analysis of Data

Introduction

This causal-comparative study sought to determine the number of dropouts from high schools in three, selected, eastern Washington school districts (i.e., Moses Lake, Mead, and Kennewick), by comparing schools with higher levels of low income families with schools with lower levels of low income families. Data from 2001-2004 were obtained and analyzed to determine significant differences.

Description of the Environment

Students enrolled in grades 9-12, from 2001-2004, from the following eastern Washington school districts were included in the study:

Moses Lake School District:

Moses Lake High School

Mead School District:

Mead High School

Mt. Spokane High School

Kennewick School District:

Kamiakin High School

Kennewick High School

OSPI baseline data essential for determining the number of high school dropouts and numbers of students for low income families were obtained and analyzed during fall and spring

semesters, 2005-2006. Criteria used to determine low family income included: Numbers of students in federally subsidized free and reduced-price meal programs; and, numbers of students enrolled in transitional bilingual education programs.

Hypothesis

The incidence of high school dropouts from selected schools with higher levels of low income families will be higher than those from high schools with lower levels of low income families.

Results of the Study

Table 1 provides a summary of dropout rates and the percentage of low family income, from 2001-2004, for the five high schools in three school districts included in the study. Accompanying Table 1, *Figures 3 and 4* (Appendixes C and D), provide, a chi square data analysis used to determine how the dropout rate at Moses Lake High School (MLHS) compared with Mead and Kennewick high schools. As shown in *Figure 3*, the chi square value 4.9744 was significant at the .05 level, as this number exceeded the chi square value of 3.841 in the chi square "Distribution Table" (Appendix B). However, as indicated in *Figure 4*, when comparing the dropout rate at MLHS with the Kennewick high schools, the chi square value of 0.0640 was not significant at .05, .01, and .001 levels.

Similarly, *Figures 5 and 6* (Appendixes E and F) provide a chi square data analysis used to determine how the percentage of low income families at MLHS compared with Mead and Kennewick high schools. As shown in *Figure 5*, the chi square value of 1.6998 was not

Table 1

Annual Dropout Rates and Percentage of Low Income Families for High Schools and School Districts, 2001-2004

High School	Dropout Rate 2001-2002	Dropout Rate 2002-2003	Dropout Rate 2003-2004	Mean High School Dropout Rate 2001-2004
Moses Lake	7.3	8.7	7.3	7.8
Mead	1.2	1.8	0.7	1.2
Mt. Spokane	1.5	0.06	0.9	1
Kamiatkin	3.8	4.7	2.6	3.7
Kennewick	14.9	16.8	10	13.9
School District	Mean Dropout Rate for All High Schools 2001-2004			Percentage of Low-income Families 2003-2004
Moses Lake	7.77			25.01
Mead	1.12			16.6
Kennewick	8.8			22.1

Source: Bergeson, T.D. State Superintendent of Public Instruction. "Graduation and Dropout Statistics for Washington's Counties, Districts and Schools." Reports for Years 2001-2002, 2002-2003, 2003-2004.

significant at .05, .01, and .001 levels. The chi square value of 0.0886 shown in *Figure 6* also proved not significant at .05, .01, and .001 levels. (see Appendix B). STATPAK statistical software was used for analysis of data shown in *Figures 3, 4, 5, and 6*.

Findings

Data presented in Chapter 4 provided: (a) essential information confirming the student dropout rate at MLHS in recent years (i.e., 2001-2004), thereby answering the first research question raised in Chapter 1. Further, these data provided a basis for comparing the dropout rate at MLHS with other selected high schools in eastern Washington (i.e., Mead and Kennewick), therefore addressing the second research question raised in Chapter 1. Although data analysis indicated there was a significant difference in the number of MLHS dropouts compared with those from Mead and Kennewick high schools, no significant difference was found when comparing MLHS and the Kennewick high schools. Finally, as the analysis of data indicated no significant difference existed in levels of low family income among the three school districts included in the study, the hypothesis was not supported.

Summary

Chapter 4 reviewed and detailed the description of the environment, hypothesis, results of the study, and major findings. Data analysis indicated: (a) A significant difference existed between numbers of student dropouts at Moses Lake and Mead high schools; (b) However, there was insufficient evidence to support the hypothesis that the incidence of dropouts from low income families at Moses Lake, Mead, and Kennewick high schools would be higher than those from high schools with lower levels of low income families.

CHAPTER 5

Summary, Conclusions, and Recommendations

Summary

The purpose of this causal-comparative research study was to seek reliable data concerning the dropout rate at MLHS in recent years; to compare the MLHS dropout rate with other selected eastern Washington high schools; and, to obtain greater understanding of factors contributing to the high school dropout problem and possible solutions. To accomplish this purpose, a review of selected literature was conducted, related baseline data were analyzed, and conclusions and recommendations were formulated.

Conclusions

From research findings and an analysis of the data produced by this causal-comparative study, the following conclusions were reached:

1. The student dropout problem in America has resulted in billions of dollars in lost income, lost tax- based income, increased unemployment costs, increased criminal justice costs, increased welfare costs, and possibly resulting poverty for students who quit high school.
2. Although high school completion trends have improved significantly in recent years, school dropouts continue to pose major social and economic problems throughout America.
3. Factors contributing to student decisions to drop out of high school include educational, non-educational, and complex family and societal issues.

4. Dropout prevention strategies require a change in schools and teachers, and a willingness to create positive educational programs.
5. Incorporating audio, visual, kinesthetic, and problem-solving activities into high school instructional practices can help students make a positive commitment to staying in school.
6. A significant difference existed between numbers of student dropouts at Moses Lake and Mead high schools.
7. There was insufficient evidence to support the hypothesis that the incidence of dropouts from low income families at Moses Lake, Mead, and Kennewick high schools would be higher than those from high schools with lower levels of low income families.

Recommendations

Based on the conclusions cited above, the following recommendations have been formulated:

1. To save billions of dollars in lost income, welfare costs, unemployment and criminal justice costs, America should invest money and energy needed to reduce the number of school dropouts.
2. To help resolve the dropout problem, educators should seek alternative means to address discipline and grading policies, school organization and size, program assignments, course content, type of instruction, school climate, and ways to improve adult-student relationships

3. To help students make a positive commitment to staying in school, educators should incorporate audio, visual, kinesthetic and problem solving activities into high school instructional programs.
4. To formulate generalized perceptions of factors contributing to the school dropout problem, as well as possible solutions, undertaking a current review of selected literature and data analysis related to low-income families can provide information essential for drawing related conclusions and inferences.
5. Schools/school districts seeking data related to the dropout problem, and/or issues related to low family income, may wish to use information provided in this study or, they may desire instead to undertake related research more suited to their unique needs.

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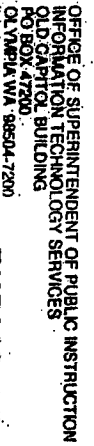
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APPENDIX A

Figure 1

OSPI Form P-210

Public Middle and High School Enrollment Status.



PUBLIC MIDDLE AND HIGH SCHOOL ENROLLMENT STATUS
2002-03 School Year
Grades 07-12

(13)	(14)	(15)	(16)
E	G	S	T

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[illegible]

APPENDIX B

Figure 2

TABLE A.6:

Distribution of Chi Square.

TABLE A.6 Distribution of χ^2

<i>df</i>	<i>p</i>			
	.10	.05	.01	.001
1	2.706	3.841	6.635	10.827
2	4.605	5.991	9.210	13.815
3	6.251	7.815	11.345	16.266
4	7.779	9.488	13.277	18.467
5	9.236	11.070	15.086	20.515
6	10.645	12.592	16.812	22.457
7	12.017	14.067	18.475	24.322
8	13.362	15.507	20.090	26.125
9	14.684	16.919	21.666	27.877
10	15.987	18.307	23.209	29.588
11	17.275	19.675	24.725	31.264
12	18.549	21.026	26.217	32.909
13	19.812	22.362	27.688	34.528
14	21.064	23.685	29.141	36.123
15	22.307	24.996	30.578	37.697
16	23.542	26.296	32.000	39.252
17	24.769	27.587	33.409	40.790
18	25.989	28.869	34.805	42.312
19	27.204	30.144	36.191	43.820
20	28.412	31.410	37.566	45.315
21	29.615	32.671	38.932	46.797
22	30.813	33.924	40.289	48.268
23	32.007	35.172	41.638	49.728
24	33.196	36.415	42.980	51.179
25	34.382	37.652	44.314	52.620
26	35.563	38.885	45.642	54.052
27	36.741	40.113	46.963	55.476
28	37.916	41.337	48.278	56.893
29	39.087	42.557	49.588	58.302
30	40.256	43.773	50.892	59.703
32	42.585	46.194	53.486	62.487
34	44.903	48.602	56.061	65.247
36	47.212	50.999	58.619	67.985
38	49.513	53.384	61.162	70.703
40	51.805	55.759	63.691	73.402
42	54.090	58.124	66.206	76.084
44	56.369	60.481	68.710	78.750
46	58.641	62.830	71.201	81.400
48	60.907	65.171	73.683	84.037
50	63.167	67.505	76.154	86.661

Source: From R. A. Fisher and F. Yates, *Statistical Tables for Biological, Agricultural and Medical Research* (6th ed.), Pearson Education Limited, copyright © 1974 Longman Group Ltd. Reprinted with permission of Pearson Education Limited.

APPENDIX C

Figure 3

STATPAK Analysis: One-Dimensional, Chi Square.

Comparison of Dropout Rates, Moses Lake and Mead High Schools.

ONE DIMENSIONAL CHI SQUARE

CELL CHI-SQUARE VALUES

Row 1 Col 1 'O' = 1.12 'E' = 4.4450 CHI-SQUARE = 2.4872
Row 1 Col 2 'O' = 7.77 'E' = 4.4450 CHI-SQUARE = 2.4872

CHI-SQUARE = 4.9744

THERE WAS 1 ROW AND THERE WERE 2 COLU
TABLE.

DEGREES OF FREEDOM = (C-1) = 1

Enter Scores

OK

DONE

CY

Enter Score

Calculate

Clear Scores

Print

Main Menu

Scores

1.12
7.77

APPENDIX D

Figure 4

STATPAK Analysis: One-Dimensional, Chi Square.

Comparison of Dropout Rates, Moses Lake and Kennwick High Schools.

ONE DIMENSIONAL CHI SQUARE

CELL CHI-SQUARE VALUES

Row 1 Col 1: O = 7.77 E = 8.2850 CHI-SQUARE = 0.0320
Row 1 Col 2: O = 8.80 E = 8.2850 CHI-SQUARE = 0.0320

CHI-SQUARE = 0.0640

THERE WAS 1 ROW AND THERE WERE 2 COLUMNS IN THE CONTINGENCY TABLE.

DEGREES OF FREEDOM = (C-1) = 1

Scores

7.77
8.80

Enter Score

Calculate

Clear Scores

Print

Main Menu

APPENDIX E

Figure 5

STATPAK Analysis: One-Dimensional, Chi Square.

Comparison of Low Income Families, Moses Lake and Mead High Schools.

ONE DIMENSIONAL CHI SQUARE

CELL CHI-SQUARE VALUES

Row 1 Col 1 'O' = 16.6 'E' = 20.8050 CHI-SQUARE = 0.8499
Row 1 Col 2 'O' = 25.01 'E' = 20.8050 CHI-SQUARE = 0.8499

CHI-SQUARE = 1.6998

THERE WAS 1 ROW AND THERE WERE 2 COLUMNS IN THE CONTINGENCY TABLE

DEGREES OF FREEDOM = (C-1) = 1

Scores

16.6
25.01

Enter Score

Calculate

Clear Scores

Print

Main Menu

APPENDIX F

Figure 6

STATPAK Analysis: One-Dimensional, Chi Square.

Comparison Low Income Families, Moses Lake and Kennwick High Schools.

ONE DIMENSIONAL CHI SQUARE

CELL CHI-SQUARE VALUES

Row 1 Col 1: O² = 25.01 E² = 23.5650 CHI-SQUARE = 0.0886
Row 1 Col 2: O² = 22.12 E² = 23.5650 CHI-SQUARE = 0.0886

CHI-SQUARE = 0.1772

THERE WAS 1 ROW AND THERE WERE 2 COLUMNS IN THE CONTINGENCY TABLE.

DEGREES OF FREEDOM = (C-1) = 1

Scores

25.01
22.12

Enter Score

Calculate

Clear Scores

Print

Main Menu