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A Study of Student Employment and its Effect on Student Achievement

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A STUDY OF STUDENT EMPLOYMENT AND ITS EFFECT ON STUDENT ACHIEVEMENT

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APPROVAL PAGE

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TABLE OF CONTENTS

TABLE OF TABLES

CHAPTER I

INTRODUCTION

Absenteeism, tardiness, and low school achievement in the urban city high school have been and remain problems today. There are different opinions and research completed which point to certain negative factors which may contribute to these problems. Students see these problems as a result of different variables such as lack of parental support, drug/alcohol use, teacher apathy, and student apathy. Although parental support, social factors, and economic factors certainly play a part, part-time employment of high-school students is seen by many educators as being associated with these negative correlates. Problems such as lowered school performance, increased alcohol and drug use, higher rates of delinquency, and family conflict have been linked to student employment. But, the fact is students have been working for the past century whether on the farm or at the near-by grocer. Does part-time employment have a negative effect on student achievement? This "ex post facto" study will investigate these negative correlates, if any, in order to have a better understanding of the problem and to pave the way for other researchers to find ways to make work a positive influence on student achievement.

Our society has placed considerable emphasis on the value of part-time employment for working-age students, and there seems to be more opportunities available for high-school students who wish to work. With more high-school students joining the work force, we as educators, parents,

employers, and peers need to be aware of the impact part-time work may have on academic achievement, absenteeism, and tardiness to school.

STATEMENT OF THE PROBLEM

The purpose of this study was to determine if a correlation exists between high-school students who are employed over 15 hours a week and academic achievement during the spring semester of the school year 1992-93 at Maury High School.

HYPOTHESIS

This study investigated the achievement of high school students who worked part-time (more than 15 hours/week). The following hypotheses were investigated:

1. Students who work 15 or more hours a week have a lower-grade point average than those who do not work or who work fewer than 15 hours a week?

2. The absenteeism rate is higher for students who work 15 or more hours a week than those students who do not work or who work fewer than 15 hours a week?

3. The tardiness rate is higher for students who work 15 or more hours a week than those students who do not work or who work fewer than 15 hours a week?

BACKGROUND AND SIGNIFICANCE

Vocational educators believe on-the-job training experiences are an integral part of vocational education for the high-school student. Also, many students need to work part-time for economic reasons. Because high-school

students remain a sizeable portion of the workforce, a need exists to determine if any negative factors are associated with part-time student employment.

Many researchers agree that there is need for study in this area. After a review of research in this area, Charner and Fraser state:

> If our youth are experiencing negative, harmful effects as a result of their working, it is critical to them, and to the future of our nation's economy, that we identify the reasons for these effects and work to ameliorate or reverse them. At the same time, it is important to determine the positive aspects of working so that we as a society may aim at enhancing the nature of the work experience. (Charner and Fraser, 1988, p. 6)

By investigating negative correlates associated with part-time student employment and determining the severity and nature of the problem, educators can begin to find solutions. Part-time student employment should be a positive experience and not negatively affect school achievement.

LIMITATIONS

The findings and conclusions of this study were limited as follows:

1. The study was limited to seniors (a limited sampling) at Maury High School.

2. The study was confined to the collection of data over a period of one semester, February 1993-June 1993.

3. The data collected may not reflect a 100 percent representation of the senior class.

4. The study is limited to the comparison of data collected for only two groups: those not working or working under 15 hours, and those working 15 or more hours a week.

5. The study is limited to the investigation of only three correlates: tardiness, absenteeism, and grade point average.

6. There are other outside influences or pre-existing conditions which may be factors in student achievement.

ASSUMPTIONS

There were factors which were assumed to be true and correct. The assumptions are as follows:

1. The student records for the spring semester 1992-93 of Maury High School were accurate and complete.

2. All senior respondents answered the questions honestly and completely.

PROCEDURES

The study involved selecting a sampling of high-school students in the urban high-school to use in researching the problem. The senior class of Maury High School, Norfolk, VA, was selected because the majority of part-time employed students are from this age group.

The next step in the study was conduction of a survey among seniors to determine their working status. After administrative approval, the survey was conducted through the cooperation of Teacher Advisors during senior homeroom.

After the data were collected and compiled from the senior survey, the following information was collected from the Student Record Room located in the Guidance Office: number of days absent, number of days tardy, and g.p.a. for the spring semester 1992-93. The data collected from all sources were analyzed and compared, and the results were published.

DEFINITION OF TERMS

A clear understanding of terms used in this research study is important for the reader. The terms used in this study are defined for the reader as follows:

Absence	The actual event of not attending school.
Absent	Not present or attending school.
Absenteeism	A situation of continuous absences.
Achievement	The quality and quantity of a student's work as represented by the number of absences, tardies, and G.P.A.
G.P.A.	Grade Point Average.
Part-time student employment	The situation where a student is employed outside school hours or as part of a cooperative education program while he or she is attending school full-time.
Tardy	The arrival to school after 9:25 a.m. or homeroom.
Tardiness	A situation of continued tardies.

SUMMARY

Chapter I provides focus on the problem of absenteeism, tardiness, and low school achievement in the urban city high school and that part-time student employment may be responsible to an unknown degree for these problems. The importance of and need for part-time employment for students was discussed as well as our responsibility to ensure that employment be a positive

influence on school achievement. The goal of this research was to determine if there was a distinct correlation between students who work 15 or more hours per week and tardiness, absenteeism, and g.p.a. by comparing them to students who do not work or work fewer than 15 hours per week.

In the next chapters which follow, the reader will be informed of related literature, procedures and methods used, actual findings, and be provided with conclusions and recommendations.

CHAPTER II

REVIEW OF LITERATURE

Absenteeism, tardiness, and low school achievement have been and continue to be a problem for educators at Maury High School. In increasing numbers, high school students have been entering the workforce. It is estimated that by the time students are seniors, over two-thirds of the employed youth will spend fifteen or more hours a week in the workplace. (Greenberger and Steinberg, 1986, p. 11) Consequently, it is important that we determine if there is a correlation between working and school achievement. School and work have been firmly joined. Research studies from the past eight years show both negative and positive effects associated with working part-time while in high school. However, the general consensus is that there is scant empirical evidence that exists to gauge the degree to which employment is associated with reduced attention to school performance or lowered academic achievement. This chapter will inform the reader of the problem at Maury High School, current trends in youth employment, research studies completed relating to the problem, and alternatives to make youth employment a positive experience.

THE VARIABLES AT MAURY HIGH SCHOOL

Maury High School is an urban city school and is comprised of 1669 students of various socioeconomic backgrounds and race. Students come from

older, upper middle, high middle, middle, and low-income families. Forty-three percent of the students are white, 52 percent black, and 5 percent Asian/Hispanic. (MHS Self-Study, 1993, p. 7)

Maury High School recently conducted a self study and several of the main concerns were the high rates of absenteeism, tardiness to school, and low academic achievement, especially among the lower-socioeconomic students. The attendance rate for the 1991-92 school year was 89 percent and the dropout rate was 7 percent. Students were also found not to be age appropriate for their grade levels. (MHS Self Study, 1993, p. 8)

Because of the desire to improve the present situation, it is important to determine if there exists a correlation between students working 15 hours or more per week and academic achievement. At Maury High School, many students are employed--both in school-sponsored cooperative education programs and on their own, separate from school. With the emphasis on Tech-Prep and bridging the gap between academics and vocational education, it is now more important than ever to know the effects of high-school student employment.

CURRENT TRENDS IN YOUTH EMPLOYMENT

To understand how this problem has become an important issue today, it is important to understand the current trends of youth employment: size of the youth workforce, makeup of the workforce, hours worked, and reasons for the increase of youth employment.

Size

There is widespread agreement that during the past two or three decades there has been a substantial increase of the number of American high school youth entering the workforce. Charner and Fraser state that participation in work activities by high school students has been increasing over the past 25 years to the point where today at least one-third of all high-school students hold part-time jobs in any given week. (Charner and Fraser, 1988, p. 2) In addition to the increase in the number of student workers, young people are spending more hours working than ever before. The National Assessment of Economic Education Survey indicated that high school juniors and seniors who were employed in 1987 averaged about twenty hours per week during the school year. (Lillydahl, 1990, p. 309)

Makeup

"Today, part-time employment is most common among white, middle-class high school students." (Lillydahl, 1990, p. 307) Although student participation in work varies according to geographic location and size of community, it appears there are some definite trends. Charner and Fraser also indicate that older, middle-class, male vocational students from the Northeast and North Central region are the most likely to be employed. (Charner and Fraser, 1988, p. iii) Schill, et. al., also found that students with a higher socioeconomic background had a greater chance of being employed. (Lillydahl, 1990, p. 309)

Recent studies show that more seniors are employed during the school year than all other grades combined. The 1987 National Assessment of Economic Education Survey which questioned over three thousand high school students selected from a stratified national sample found that approximately one-third of the seniors in the survey were employed during the school year. (Lillydahl, 1990, p. 310) Wirtz, et. al., also substantiates these findings in their research. They state that nearly one-third of all ninth and tenth graders and approximately three out of every four high school seniors hold part-time jobs. (Wirtz, et. al., 1988, p. 3).

The distribution of work between genders differs between research where data were collected using national samples and that of smaller, selected population samples. Although all studies show more males working than females, the degree of difference is debatable.

Race is also related to participation in work for high school students, and studies conducted during the last twenty years similarly indicate that white and Hispanic students have a much higher rate of employment than black students. The latest research of Greenberger and Steinberg (1986) found 41 percent of the white students were employed compared with 42 percent of Hispanic and only 19 percent of black students. (Charner and Fraser, 1988, p. 10)

Hours

Young people today appear to be working more hours than their predecessors (Lillydahl, 1990, p. 307). A fairly large number of studies in the last decade have explored hours worked; furthermore, several studies indicate the number of hours worked has direct effects on academic achievement, academic promise, and school performance in general. The National Longitudinal Study of 1978 found that male high school students worked an average of 18.5 hours per week while females worked an average of 14 hours per week. (Charner and Fraser, 1988, p. 28) "Lewis, et. al., (1983), in their analysis of the National Longitudinal Survey of Labor Market Experience of Youth Study (DOL-NLS) found that the students in the sample had a mean of 20 hours worked per week." (Charner and Fraser, 1988, p. 29) Schill, et. al., (1985), in a study of high school students in the State of Washington, found that almost 70 percent of those employed worked 20 hours or less per week. (Charner and Fraser, 1988, p. 29) In contrast, however, Wirtz, et al., (1987), in a study of 446 high school students planning to attend college, found that approximately 58 percent of those who worked were employed more than 20 hours per week. (Lillydahl, 1990, p. 309) Based on the consensus of studies to date, a general conclusion can be made that the majority of students who work part time while in high school work fewer than 20 hours per week.

Reasons Youth Work

An understanding of the reasons why high school students work will help educators make the merging of academics and work experience an advantageous and positive one. Adolescents work for a number of reasons; however, most experts agree that research in this area is very limited and scant. Greenberger and Steinberg suggest in their book, When Teenagers Work, that the expansion of job opportunities and inflation are two economic factors believed to be responsible for the increase of youth in the workplace. "The cost of being an adolescent has risen steeply in the last fifteen years--more steeply, in fact, than the rate of inflation overall." (Greenberger and Steinberg, 1986, p. 28) Other studies also indicate the work decision is based on the desire to acquire material goods to have spending money, to save money for future education, and to gain workplace skills and education. Wirtz, et. al., through a study of 508 employed high school students, found that although all of the above were valid reasons, social and situational factors are significantly associated with these reasons. For example, "academic program and grade were significantly related to working in order to save for future education v.s. gaining workplace skills and experience. (Wirtz, et. al., 1988, p. 2)

EFFECTS OF STUDENT EMPLOYMENT

The impact of part-time work on the achievement and performance of students while attending school is an issue debated by many authoritative persons and researchers in the field. Findings from studies differ in relation to

whether work is a positive or negative influence and to the extent of the influence, if any exists. Studies based on work status with no thought to the number of hours worked, have yielded inconsistent findings on the relationship between working and grade point average. (Greenberger and Steinberg, 1986, p. 115) Thus, this section will provide information gathered from studies in which specification is made as to the number of hours worked.

"Several studies--but not all--suggest that more intensive employment actually leads to a drop in school performance." (Greenberger and Steinberg, 1986, pp. 116-17) Greenberger and Steinberg conducted a study using data collected from 531 tenth- and eleventh-grade students in Orange County, California. They found longer hours were associated with lower grade point averages. "Tenth graders working more than fifteen hours per week and eleventh graders working more than twenty hours had significantly lower grades than students who worked fewer hours." (Greenberger and Steinberg, 1986, p. 117) No findings for seniors were given.

Ronald D'Amico, one of the early researchers in student employment, states that even though research suggests that high school graduates who worked while attending school experience lower unemployment and find better jobs in the postschool period than those who did not work, the positive payoffs may come at the cost of impaired academic performances. (D'Amico, 1984, p. 153) In his study, D'Amico uses data collected from the National Longitudinal Surveys (1979). The following are a few of his conclusions: 1)

By grade 12, students work 15-18 hours per week, 2) No detrimental effects of high school employment on class rank were found for any race/sex group, and 3) Working was associated with improved class standing for white males. D'Amico made this generalization:

> ...the detrimental effects of high school employment are associated with the variable measuring very intensive work involvement, and nearly all the beneficial effects are associated with the variable measuring less intensive work involvement. This pattern of effects suggests some support for Greenberger's (1983a) contention that modest levels of high school employment can instill proper work attitudes and habits, but greater work involvements may interfere with educational progress while providing no additional benefits. (D'Amico, 1984, p. 162)

Lawrence Hotchkiss conducted a study among 597 high school students over a three-year period, and this study investigated the effects of part-time work during high school on school-related behaviors (tardiness, absenteeism, extracurricular activities, grade point average, and self-reported grades) and career expectations. The data from this study indicated that neither a linear nor a nonlinear effect of hours of work occurred for any of the school-related variables. (Hotchkiss, 1982, p. 22)

In contrast to D'Amico and Hotchkiss's findings, Jane Lillydahl found students who work in excess of fifteen to twenty hours per week are absent from school more often, spend less time on homework, and have lower grade point averages. (Lillydahl, 1990, p. 315) Lillydahl used the 1987 National Assessment Survey which questioned over three thousand high school students from a stratified national sample.

ALTERNATIVES FOR IMPROVEMENT OF YOUTH EMPLOYMENT

Working provides valuable opportunities for youth to acquire employability skills, to assume greater responsibility, and to help ease the transition to adult work roles. Working has proved especially beneficial to vocational students. According to a recent article in VocEd by Jim Stone, one statewide study found that five years after graduation, vocational graduates who had worked part-time during high school had a 7 percent to 14 percent advantage in earnings. (Stone, 1993, p. 27) Many studies support part-time work based on the assumption that working does provide these benefits. Thus, it is important that we find ways for employment and academics to complement each other.

Despite the mixed findings and opinions regarding the negative effects of employment, employers, educators, and parents can help minimize the costs of adolescent employment and help maximize the benefits.

Greenberger and Steinberg suggest limiting youngsters' hours on the job since most researchers agree that the critical factor is the amount of time spent working and not simply whether they work. (Greenberger and Steinberg, 1986, p. 226) This might involve the changing of child labor laws and appealing to employers and parents for their cooperation.

Employers can be especially helpful by establishing a ceiling on the number of hours worked per week, providing training programs designed to offer more educational experiences, and establishing communication with the

school. One program designed to do just that is "Education First", launched by the Texas Restaurant Association. The program establishes an ongoing relationship with the school guidance counselors and parents so that employers can adjust the work hours or schedules of student employees whose grades are deteriorating. In the first six weeks of the program, 200 of the Texas Restaurant's Association's 6,000 members agreed to participate and more are expected to follow. One participant turns sections of the restaurant into study areas during slow periods. (American Teacher, 1993, p. 15) Vocational cooperative education programs are also designed to optimize the benefits of work experience.

There are alternatives available for improvement of high school students' work experiences. But, it takes the cooperation of employers, educators, and parents to investigate and monitor part-time work experiences for high school students.

SUMMARY

It appears from the research discussed in this chapter that the effects of working part-time by high school students on grades, days absent, and days tardy are still much in debate. There is also general consensus among many experts in the field that insufficient empirical evidence exists to measure the degree to which employment is associated with lowered school achievement and performance. It should be noted that the contrast in findings may be attributed to the age group selected for the samples in the various studies.

This study has also determined a lack of research on the effects of part-time work on days tardy and days absent. The increase in youth employment and other current trends are relatively undisputed. It is also a fact that seniors make up the majority of the high school workforce. Low school achievement and high rates of tardiness and absenteeism have been and continue to be problems to be dealt with by educators at Maury High School. This study has hopefully shed some new light on the problem and piqued some interest. Chapter III will identify the population, explain the design and use of the instrument, identify the methods of data collection, and analyze the data for the reader.

CHAPTER III

METHODS AND PROCEDURES

This chapter dealt with the basic design of the research study. This ex-post facto study investigated possible cause and effect relationships by observing existing data and searching back through recorded data. In this chapter, information on the population, instrument design, methods of data collection, statistical analysis and summary will be found.

POPULATION

The sample consisted of 232 senior high school students who attended Maury High School during the spring semester of the 1992-93 school year. This population reflects a broad representation of race, sex, and socioeconomic status.

INSTRUMENT DESIGN

A student questionnaire was developed and used to obtain employment information in order to separate the population into two groups: those not working or working under 15 hours, and those working 15 or more hours a week (See Appendix A for a sample of the instrument used).

METHODS OF DATA COLLECTION

A list of all seniors was obtained from the guidance secretary which provided the following information: Name of student, race, and sex. The

questionnaire was distributed by the senior teacher advisor to seniors during homeroom on a selected day. The teacher advisor was given instructions on distributing and collecting the questionnaires and was instructed to obtain responses from absentees upon return to school to ensure a coverage of the total population. Information was gathered from 232 senior high school students which represented 83% of the total population of 281 listed on the roll at the time of the survey.

The attendance records were checked for each senior enrolled at Maury High School for the 1992-93 spring semester to obtain the number of absences and tardies for comparison between those students who worked 15 or more hours a week and those who did not work or who worked fewer than 15 hours a week.

The academic records of each senior enrolled at Maury High School for the 1992-93 spring semester were also examined to determine grade point average for comparison between those students who worked 15 or more hours a week and those who did not work or who worked fewer than 15 hours a week.

STATISTICAL ANALYSIS

After the data were collected and the seniors were divided into the two classifications of those working 15 or more hours a week and those who did not work or worked fewer than 15 hours, the number of absences, number of

tardies, and the grade point averages were compared between the two groups using the T-Test method of determining if a correlation exists.

SUMMARY

The methods and procedures used in order to draw conclusions are believed by the researcher to be reliable and valid. Chapter IV will report the data collected and reveal findings. The reader will be provided with tables and figures to assist in interpretation of the data collected.

CHAPTER IV

FINDINGS

The purpose of this study was to determine if a correlation existed between senior high school students who are employed 15 or more hours a week and academic achievement during the spring semester of the 1992-93 school year at Maury High School. The findings are a result of an effort to substantiate the following three hypothesis: 1) Students who work 15 or more hours a week have a lower-grade point average than those who do not work or who work fewer than 15 hours a week, 2) The absenteeism rate is higher for students who work 15 or more hours a week than those students who do not work or who work fewer than 15 hours a week, and 3) The tardiness rate is higher for students who work 15 or more hours a week than those students who do not work or who work fewer than 15 hours a week.

The findings are based from data collected on 232 senior high school students in attendance at Maury High School at the time of the study. According to official school records, a total of 281 senior high school students were on roll. Since data were collected on 232 seniors whose work status was known, an 83% representation of the total population resulted. Of the 232 seniors, 137 students (59% of the population) did not work or worked fewer than 15 hours a week; and 95 students (41% of the population) worked 15 or more hours a week during the spring semester of the 1992-93 school year.

The findings are broken down into three sections: Grade Point Average, Absenteeism, and Tardiness. A summary is also provided at the end of this chapter.

GRADE POINT AVERAGE

After careful examination of official school records of the 232 seniors, grade point averages were determined for the spring semester for each senior. The mean grade point average for the 95 seniors who worked 15 or more hours a week was 2.45, and the mean grade point average for the 137 students who did not work or who worked fewer than 15 hours a week was 2.64.

A t-test, which is used to determine if there is a significant difference between two sample means of interval data, was performed (See Appendix C for t-test calculations). The t-ratio calculated was +2.986. This figure exceeds the .005 level which indicates the data are good and the difference between the two means is very significant (See Table 1).

ABSENTEEISM

The official monthly attendance registers for the spring semester provided the number of absences for each of the 232 students in the study. The mean number of absences for seniors working over 15 hours a week was 10.18, and the mean number of absences for seniors not working or working fewer than 15 hours a week was 7.37. A second t-test was performed to determine significance (See Appendix D for calculations). The t-ratio was

2.487 which exceeds the .01 level. The data were good, and there is a high significance (See Table 1).

TARDINESS

The official monthly attendance registers were also checked to determine the total number of tardies for each of the 232 seniors in the study. A tardy is the arrival to school after 9:25 a.m. or homeroom. School officially begins at 7:30 a.m. The mean number of tardies for seniors working 15 or more hours a week was .62, and the mean number of tardies for seniors not working or working fewer than 15 hours a week was .36. A third t-test was performed and a t-ratio of 2.0 was calculated (See Appendix E for calculations). This figure indicates a high significance, exceeding the .025 level of significance (See Table 1).

TABLE 1

G.P.A., Absences, and Tardies for Students Employed 15 or More Hours a Week and Students Not Employed or Employed Fewer Than 15 Hours a Week

Variable	Set 1* Mean	Set 2** Mean	T-Ratio	Level of Significance
G.P.A.	2.77	2.45	2.986	.005
Absences	7.37	10.18	2.487	.01
Tardies	.36	.62	2.000	.025

*Set 1 = Students who do not work or work fewer than 15 hours a week.
**Set 2 = Students who work 15 or more hours a week.

SUMMARY

This section of the paper revealed the results of the comparison of grade point average, absences, and tardies between senior high school students who are employed over 15 hours a week and those who do not work or who work fewer than 15 hours a week. Three t-tests were performed to determine the level of significance for each variable. Table 1 shows the mean, t-ratio, and level of significance for each of the three variables. Detailed results of the t-tests performed are found in Appendixes C, D, and E. The summary, conclusions, and recommendations of this study are found in Chapter V.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The problem of the study was to determine if a correlation existed between high-school students who were employed over 15 hours a week and academic achievement. This chapter summarizes the study, draws conclusions based on the findings, and recommendations are made for further study.

SUMMARY

The study was conducted to determine if a correlation existed between senior high-school students who were employed over 15 hours a week and academic achievement by comparing them with students who did not work or worked fewer than 15 hours a week. Because high-school students are a sizeable portion of the work force, especially seniors, it was important to determine if any negative factors were associated with part-time employment.

The sample used in the study consisted of 232 senior high school students who were surveyed through their homerooms to determine working status during the spring semester of the 1992-93 school year. Grade and attendance records were examined to determine grade point average, number of absences, and number of tardies for each of the 232 students. T-tests were performed to compare the grade point averages, number of absences, and number of tardies between the two groups in order to determine if a correlation existed

and prove significance. Based on the findings, the researcher was able to draw conclusions and give recommendations.

CONCLUSIONS

The findings of the study revealed that a negative correlation did exist between senior high school students who worked 15 hours or more a week and academic achievement. The most significant correlation existed between working students and grade point average. The following are conclusions derived from the study:

1. A significant negative correlation existed between senior high school students who worked 15 or more hours a week and grade point average. The mean grade point average for those students who worked 15 or more hours a week was significantly lower than those students who did not work or worked fewer than 15 hours.

2. A significant negative correlation existed between senior high school students who worked 15 or more hours a week and the number of absences. The mean number of absences was significantly higher for those students who worked 15 or more hours a week than those who did not work or worked fewer than 15 hours a week.

3. A significant negative correlation existed between senior high school students who worked 15 or more hours a week and the number of tardies. The mean number of tardies for those students who worked 15 or more hours a week was significantly higher than those students who did not work or worked fewer than 15 hours.

Negative correlates were associated with students employed part time in this study. The study corroborates with other studies with similar empirical findings.

RECOMMENDATIONS

This study revealed that negative correlates are significantly associated to part-time employment of senior high school students. However, before any drastic steps are taken or plan of action is developed, further study in this area is needed. The following are recommendations for further study:

1. Compare the academic achievement among students who work 15 or more hours a week as a part of a school-sponsored work program, those working but not enrolled in a school-sponsored work program, and those who do not work or work fewer than 15 hours. Because most school-sponsored work program monitor participants' grades and attendance, variables may be controlled.

2. Study factors that may affect student performance and which may control the variables such as course difficulty, number of courses taken, social environment, and economic status.

3. Increase the sampling used in the study to include eleventh-grade students. Seniors make up the majority of student workers, however, they may be strongly influenced by the incentive to graduate on time.

4. Increase the sampling used in the study to include students from several different high schools. Different high schools may have different attendance and tardy policies, or they may enforce them at varying degrees. By broadening the population, the study would be more valid.

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APPENDICES

APPENDIX A

Student Employment Questionnaire

QUESTIONNAIRE

Research Study: A Study of Student Employment and Its Effect on Student Achievement

NAME _____TA TEACHER _____

DIRECTIONS: Please check your appropriate response(s) for the following questions:

1. Which of the following three statements are correct in describing your status of employment for the school year 1992-93?

   _____ I worked **15 or more** hours per week during the **fall** semester of the school year 1992-93.

   _____ I worked **15 or more** hours per week during the **spring** semester of the school year 1992-93.

   _____ I **did not** work or worked **fewer** than 15 hours a week during the 1992-93 school year. (Stop here if you checked this response)

2. If you worked 15 or more hours a week during the fall and/or spring semester, was this work experience part of a school-sponsored program such as COE, Marketing, or WECEP?

   _____ Yes_____ No

APPENDIX B

Student Employment Memorandum

MEMORANDUM

DATE: May 25, 1993

TO: 1~

FROM: R. Rakestraw

SUBJECT: Study of Student Employment

Please have each of the 2~ seniors in your TA complete the enclosed short questionnaire. I am doing a study on student employment in conjunction with Old Dominion University and need this data to complete my research.

It is important for the validity of my research to include all 292 seniors; if you have a student absent at the time you distribute the questionnaire, please have them complete it upon their return.

Please return all questionnaires to me in the provided envelope. Thank you for your assistance in this research study.

APPENDIX C

T-Test of Grade Point Averages

A Study of Student Employment and Its Effect on Student Achievement

T-Test No. 1: grade point average comparison between 95 senior high school students who work 15 or more hours a week and 137 senior high school students who do not work or work fewer than 15 hours a week.

Set 1: Do not work or work fewer than 15 hours a week
Set 2: Work 15 or more hours a week

Set 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
0	0	0	.17	-.247	6.1009
.86	-1.78	3.1684	.50	-2.14	4.5796
1.00	-1.64	2.6896	.75	-1.89	3.5721
1.00	-1.64	2.6896	.83	-1.81	3.2761
1.00	-1.64	2.6896	1.00	-1.64	2.6896
1.14	-1.50	2.2500	1.20	-1.44	2.0736
1.14	-1.50	2.2500	1.20	-1.44	2.0736
1.17	-1.47	2.1609	1.25	-1.39	1.9321
1.38	-1.26	1.5876	1.33	-1.31	1.7161
1.50	-1.14	1.2996	1.33	-1.31	1.7161
1.50	-1.14	1.2996	1.38	-1.26	1.5876
1.57	-1.07	1.1449	1.50	-1.14	1.2996
1.60	-1.04	1.0816	1.50	-1.14	1.2996
1.60	-1.04	1.0816	1.57	-1.07	1.1449
1.67	- .95	.9409	1.67	- .97	.9409
1.80	- .84	.7056	1.71	- .93	.8649
1.83	- .81	.6561	1.75	- .89	.7921
1.83	- .81	.6561	1.80	- .84	.7056
1.83	- .81	.6561	1.80	- .84	.7056
1.86	- .78	.6084	1.83	- .81	.6561
1.86	- .78	.6084	1.83	- .81	.6561
2.00	- .64	.4096	1.83	- .81	.6561
2.00	- .64	.4096	1.83	- .81	.6561
2.00	- .64	.4096	1.83	- .81	.6561
2.00	- .64	.4096	1.83	- .81	.6561
2.13	- .51	.2601	1.83	- .81	.6561
2.13	- .51	.2601	2.00	- .64	.4096
2.14	- .50	.2500	2.00	- .64	.4096
2.14	- .50	.2500	2.00	- .64	.4096
2.14	- .50	.2500	2.00	- .64	.4096
2.17	- .47	.2209	2.00	- .64	.4096
2.20	- .44	.1936	2.00	- .64	.4096
2.25	- .39	.1521	2.00	- .64	.4096
2.33	- .31	.0961	2.00	- .64	.4096
2.33	- .31	.0961	2.17	- .47	.2209
2.33	- .31	.0961	2.20	- .44	.1936
2.33	- .31	.0961	2.20	- .44	.1936
2.40	- .24	.0576	2.25	- .39	.1521
2.40	- .24	.0576	2.29	- .35	.1225
2.43	- .21	.0441	2.33	- .31	.0961
2.43	- .21	.0441	2.33	- .31	.0961

Student Employment and Grade Point Average
T-Test No. 1
Page 2

Set 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
2.43	- .21	.0441	2.33	- .31	.0961
2.43	- .21	.0441	2.38	- .26	.0676
2.43	- .21	.0441	2.40	- .24	.0576
2.50	- .14	.0196	2.40	- .24	.0576
2.50	- .14	.0196	2.40	- .24	.0576
2.50	- .14	.0196	2.40	- .24	.0576
2.50	- .14	.0196	2.40	- .24	.0576
2.50	- .14	.0196	2.50	- .14	.0196
2.60	- .04	.0016	2.50	- .14	.0196
2.63	- .01	.0001	2.50	- .14	.0196
2.63	- .01	.0001	2.50	- .14	.0196
2.63	- .01	.0001	2.50	- .14	.0196
2.67	.03	.0009	2.60	- .04	.0016
2.67	.03	.0009	2.60	- .04	.0016
2.67	.03	.0009	2.67	.03	.0009
2.67	.03	.0009	2.67	.03	.0009
2.67	.03	.0009	2.67	.03	.0009
2.80	.16	.0256	2.71	.07	.0049
2.80	.16	.0256	2.71	.07	.0049
2.80	.16	.0256	2.75	.11	.0121
2.80	.16	.0256	2.75	.11	.0121
2.80	.16	.0256	2.75	.11	.0121
2.80	.16	.0256	2.83	.19	.0361
2.83	.19	.0361	3.00	.36	.1296
2.83	.19	.0361	3.00	.36	.1296
2.83	.19	.0361	3.00	.36	.1296
2.83	.19	.0361	3.13	.49	.2401
2.86	.22	.0484	3.17	.53	.2809
3.00	.36	.1296	3.17	.53	.2809
3.00	.36	.1296	3.17	.53	.2809
3.00	.36	.1296	3.17	.53	.2809
3.00	.36	.1296	3.20	.56	.3136
3.00	.36	.1296	3.25	.61	.3721
3.00	.36	.1296	3.25	.61	.3721
3.00	.36	.1296	3.29	.65	.4225
3.00	.36	.1296	3.33	.69	.4761
3.00	.36	.1296	3.33	.69	.4761
3.00	.36	.1296	3.33	.69	.4761
3.00	.36	.1296	3.40	.76	.5776
3.00	.36	.1296	3.40	.76	.5776
3.00	.36	.1296	3.40	.76	.5776
3.00	.36	.1296	3.40	.76	.5776
3.00	.36	.1296	3.50	.86	.7396
3.13	.49	.2401	3.50	.86	.7396
3.14	.50	.2500	3.50	.86	.7396
3.17	.53	.2809	3.50	.86	.7396
3.17	.53	.2809	3.50	.86	.7396

Student Employment and Grade Point Average
T-Test No. 1
Page 3

Set 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
3.17	.53	.2809	3.60	.96	.9216
3.20	.56	.3136	3.60	.96	.9216
3.20	.56	.3136	3.67	1.03	1.0609
3.25	.61	.3721	3.67	1.03	1.0609
3.33	.69	.4761	3.67	1.03	1.0609
3.33	.69	.4761	3.75	1.11	1.2321
3.33	.69	.4761	4.00	1.36	1.8496
3.33	.69	.4761			
3.33	.69	.4761	232.59		67.4299
3.33	.69	.4761			
3.33	.69	.4761			
3.33	.69	.4761			
3.33	.69	.4761			
3.40	.76	.5776			
3.40	.76	.5776			
3.43	.79	.6241			
3.43	.79	.6241			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.50	.86	.7396			
3.57	.93	.8649			
3.57	.93	.8649			
3.57	.93	.8649			
3.63	.99	.9801			
3.67	1.03	1.0609			
3.67	1.03	1.0609			
3.67	1.03	1.0609			
3.67	1.03	1.0609			
3.67	1.03	1.0609			
3.67	1.03	1.0609			
3.67	1.03	1.0609			
3.80	1.16	1.3456			
3.80	1.16	1.3456			
3.83	1.19	1.4161			
3.83	1.19	1.4161			
3.83	1.19	1.4161			
4.00	1.36	1.8496			
4.00	1.36	1.8496			
4.00	1.36	1.8496			

Student Employment and Grade Point Average
T-Test No. 1
Page 4

Set 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
4.00	1.36	1.8496			
4.00	1.36	1.8496			
379.54		80.7662			

M1 = 2.77
M2 = 2.45
N1 = 137
N2 = 95

$$t = \frac{2.77 - 2.45}{\frac{80.7662 + 67.4299}{137 + 95 - 2}\left(\frac{137 + 95}{137 \times 95}\right)}$$

t = 2.986f
df = 116
Level of significance: .005

APPENDIX D

T-Test of Absences

A Study of Student Employment and Its Effect on Student Achievement

T-Test No. 2: a comparison of the number of absences between 95 senior high school students who work 15 or more hours a week and 137 senior high school students who do not work or work fewer than 15 hours a week.

Set 1: Do not work or work fewer than 15 hours a week
Set 2: Work 15 or more hours a week

Set 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
0	-8.52	72.59	0	-8.52	72.59
0	-8.52	72.59	0	-8.52	72.59
0	-8.52	72.59	0	-8.52	72.59
0	-8.52	72.59	0	-8.52	72.59
0	-8.52	72.59	1	-7.52	56.55
0	-8.52	72.59	1	-7.52	56.55
0	-8.52	72.59	1	-7.52	56.55
0	-8.52	72.59	1	-7.52	56.55
0	-8.52	72.59	1	-7.52	56.55
0	-8.52	72.59	1	-7.52	56.55
1	-7.52	56.55	1	-7.52	56.55
1	-7.52	56.55	1	-7.52	56.55
1	-7.52	56.55	1	-7.52	56.55
1	-7.52	56.55	2	-6.52	42.51
1	-7.52	56.55	2	-6.52	42.51
1	-7.52	56.55	2	-6.52	42.51
1	-7.52	56.55	3	-5.52	30.47
1	-7.52	56.55	3	-5.52	30.47
1	-7.52	56.55	3	-5.52	30.47
1	-7.52	56.55	3	-5.52	30.47
1	-7.52	56.55	3	-5.52	30.47
2	-6.52	42.51	4	-4.52	20.43
2	-6.52	42.51	4	-4.52	20.43
2	-6.52	42.51	4	-4.52	20.43
2	-6.52	42.51	4	-4.52	20.43
2	-6.52	42.51	5	-3.52	12.39
2	-6.52	42.51	5	-3.52	12.39
2	-6.52	42.51	5	-3.52	12.39
2	-6.52	42.51	5	-3.52	12.39
2	-6.52	42.51	5	-3.52	12.39
3	-5.52	30.47	5	-3.52	12.39
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	6	-2.52	63.50
3	-5.52	30.47	7	-1.52	23.10
3	-5.52	30.47	7	-1.52	23.10
3	-5.52	30.47	7	-1.52	23.10

Student Employment and Absences
T-Test No. 2
Page 2

Test 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
3	-5.52	30.47	7	-1.52	23.10
3	-5.52	30.47	7	-1.52	23.10
3	-5.52	30.47	8	-.52	.27
3	-5.52	30.47	8	-.52	.27
4	-4.52	20.43	8	-.52	.27
4	-4.52	20.43	8	-.52	.27
4	-4.52	20.43	9	.48	.23
4	-4.52	20.43	9	.48	.23
4	-4.52	20.43	9	.48	.23
4	-4.52	20.43	9	.48	.23
4	-4.52	20.43	9	.48	.23
4	-4.52	20.43	9	.48	.23
4	-4.52	20.43	10	1.48	2.19
4	-4.52	20.43	10	1.48	2.19
5	-3.52	12.39	10	1.48	2.19
5	-3.52	12.39	10	1.48	2.19
5	-3.52	12.39	10	1.48	2.19
5	-3.52	12.39	11	2.48	6.15
5	-3.52	12.39	11	2.48	6.15
5	-3.52	12.39	12	3.48	12.11
5	-3.52	12.39	12	3.48	12.11
5	-3.52	12.39	12	3.48	12.11
5	-3.52	12.39	12	3.48	12.11
5	-3.52	12.39	12	3.48	12.11
5	-3.52	12.39	13	4.48	20.07
5	-3.52	12.39	13	4.48	20.07
5	-3.52	12.39	13	4.48	20.07
5	-3.52	12.39	13	4.48	20.07
5	-3.52	12.39	14	5.48	30.03
5	-3.52	12.39	15	6.48	41.99
5	-3.52	12.39	15	6.48	41.99
5	-3.52	12.39	15	6.48	41.99
5	-3.52	12.39	16	7.48	55.95
5	-3.52	12.39	16	7.48	55.95
6	-2.52	63.50	17	8.48	71.91
6	-2.52	63.50	17	8.48	71.91
6	-2.52	63.50	18	9.48	89.87
6	-2.52	63.50	18	9.48	89.87
6	-2.52	63.50	18	9.48	89.87
6	-2.52	63.50	19	10.48	109.83
6	-2.52	63.50	19	10.48	109.83
6	-2.52	63.50	19	10.48	109.83
6	-2.52	63.50	19	10.48	109.83
6	-2.52	63.50	19	10.48	109.83
6	-2.52	63.50	20	11.48	131.79
7	-1.52	23.10	21	12.48	155.75
7	-1.52	23.10	22	13.48	181.71

Student Employment and Absences
T-test No. 2
Page 3

Test 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
7	-1.52	23.10	22	13.48	181.71
7	-1.52	23.10	22	13.48	181.71
7	-1.52	23.10	22	13.48	181.71
7	-1.52	23.10	23	14.48	209.67
7	-1.52	23.10	27	18.48	341.51
8	-.52	.27	43	34.48	1,188.87
8	-.52	.27	48	39.48	1,558.67
8	-.52	.27			
8	-.52	.27	967		7,433.46
8	-.52	.27			
8	-.52	.27			
8	-.52	.27			
9	.48	.23			
9	.48	.23			
9	.48	.23			
9	.48	.23			
9	.48	.23			
9	.48	.23			
10	1.48	2.19			
10	1.48	2.19			
10	1.48	2.19			
10	1.48	2.19			
10	1.48	2.19			
10	1.48	2.19			
11	2.48	6.15			
11	2.48	6.15			
11	2.48	6.15			
11	2.48	6.15			
12	3.48	12.11			
12	3.48	12.11			
14	5.48	30.03			
15	6.48	41.99			
15	6.48	41.99			
16	7.48	55.95			
16	7.48	55.95			
16	7.48	55.95			
17	8.48	71.91			
17	8.48	71.91			
20	11.48	131.79			
21	12.48	155.75			
23	14.48	209.67			
24	15.48	239.63			
24	15.48	239.63			
26	17.48	305.55			
29	20.48	419.43			
33	24.48	599.27			
36	27.48	755.15			

Student Employment and Absences
T-test No. 2
Page 4

Set 1	d of 1	d^2 of 1	Set 2	d of 2	$d^2$of 2
40	31.48	990.99			
41	32.48	1,054.95			
1,010		9,092.61			

M1 = 7.37
M2 = 10.18
N1 = 137
N2 = 95

$$t = \frac{7.37 - 10.18}{\frac{9{,}092.61 + 7{,}433.46}{137 + 95 - 2}\left(\frac{137 + 95}{137 \times 95}\right)}$$

t = -2.487
df = 116
Level of significance: .01

APPENDIX E

T-Test of Tardies

A Study of Student Employment and Its Effect on
Student Achievement

T-test No. 3: a comparison of the number of tardies between 95 senior high school students who work 15 or more hours a week and 137 senior high school students who do not work or work fewer than 15 hours a week.

Set 1: Do not work or work fewer than 15 hours a week
Set 2: Work 15 or more hours a week

Set 1	d of 1	d^2 of 1	Set 2	d of 2	d^2 of 2
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209

Student Employment and Tardies
T-test No. 3
Page 2

Set 1	d of 1	d^2 of 1	Set 2	d of 2	$d^2$of 2
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	0	-.47	.2209
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	1	.53	.2809

Student Employment and Tardies
T-test No. 3
Page 3

Set 1	d of 1	d^2 of 1	Set 2	d of 2	$d^2$of 2
0	-.47	.2209	1	.53	.2809
0	-.47	.2209	2	1.53	2.3409
0	-.47	.2209	2	1.53	2.3409
0	-.47	.2209	3	2.53	6.4009
0	-.47	.2209	3	2.53	6.4009
0	-.47	.2209	3	2.53	6.4009
0	-.47	.2209	3	2.53	6.4009
0	-.47	.2209	4	3.53	12.4609
0	-.47	.2209	4	3.53	12.4609
0	-.47	.2209	4	3.53	12.4609
0	-.47	.2209			
0	-.47	.2209			
0	-.47	.2209			
0	-.47	.2209			
0	-.47	.2209			
0	-.47	.2209			
0	-.47	.2209			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
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1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
1	.53	.2809			
2	1.53	2.3409			
2	1.53	2.3409			
2	1.53	2.3409			
3	2.53	6.4009			
4	3.53	12.4609			
4	3.53	12.4609			

Student Employment and Tardies
T-test No. 3
Page 4

Set 1	d of 1	d^2 of 1	Set 2	d of 2	$d^2$of 2
4	3.53	12.4609			
5	4.53	20.5209			
50		101.2633			

M1 = .36
M2 = .62
N1 = 137
N2 = 95

$$t = \frac{.36 - .62}{\sqrt{\frac{118.5255 + 101.2633}{137 + 95 - 2}\left(\frac{137 + 95}{137 \times 95}\right)}}$$

t = -2.000
df = 116
Level of significance: .025