

THOSE FACTORS OTHER THAN VOCATIONAL COMPETENCIES
WHICH INFLUENCE SUCCESSFUL JOB-RELATED
EMPLOYMENT UPON COMPLETION OF A
TWO-YEAR VOCATIONAL-TECHNICAL
TRAINING PROGRAM IN AREA
VOCATIONAL-TECHNICAL
CENTERS IN CENTRAL
OKLAHOMA

By

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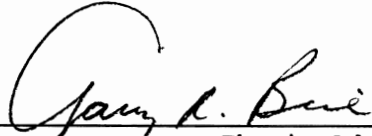
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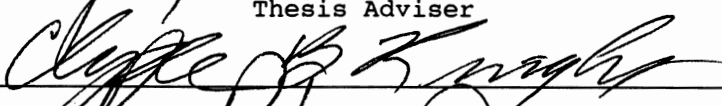
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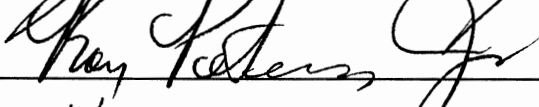
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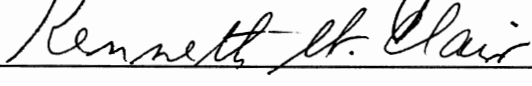
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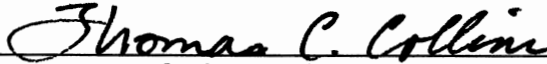


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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION	1
Statement of the Problem	3
Purpose of the Study	3
Research Questions	3
Limitations	4
Assumptions	4
Definition of Terms	5
II. REVIEW OF THE LITERATURE	7
Secondary Student's Academic Preparation as it Pertains to Successful Related Job Placement	8
Secondary Student's Vocational Preparation as it Pertains to Successful Job-Related Placement	12
Other Factors Which May Have an Effect in Successful Job-Related Placement for Secondary Vocational-Technical Completers	18
Summary	22
III. METHODOLOGY	24
Type of Research	25
Selection of the Subjects	26
Collection of Data	27
Analysis of Data	28
IV. FINDINGS	32
Description of the Sample	32
Statistical Analysis	35
Examination of the Null Hypothesis	52
V. SUMMARY, CONCLUSION AND RECOMMENDATIONS	55
Results of the Study	56
Conclusion	58
Discussion	58
Recommendations	61
BIBLIOGRAPHY	63

Chapter	Page
APPENDIXES	67
APPENDIX A - LETTER OF GENERAL INSTRUCTIONS TO AVTS . .	68
APPENDIX B - SUBJECTS' SURVEY QUESTIONNAIRE	70
APPENDIX C - LETTER OF GENERAL INSTRUCTIONS TO SUBJECTS REQUESTING INFORMATION	72
APPENDIX D - LETTER FROM DR. ROY PETERS, JR., REQUESTING ASSISTANCE FOR THIS STUDY . . .	74
APPENDIX E - LETTER ACCOMPANYING THE SECOND MAIL OUT OF THE SURVEY QUESTIONNAIRE	76
APPENDIX F - STUDENT INFORMATION COMPILATION SHEET . . .	78

LIST OF TABLES

Table	Page
I. Frequency and Percent of Respondents by Sex, Vocational Service Area of Training and Rural/Urban Location . .	34
II. Employment Status by Frequency and Percent of Respondents by Relationship to Vocational-Technical Training by Service Area	36
III. Employment by Frequency and Percentile of Respondents by Relationship to High School Grade Point Average . .	38
IV. Employment by Frequency and Percentile of Respondents by Relationship to Standardized Test Score Results . .	40
V. Employment by Frequency and Percentile of Respondents by Relationship to Vocational-Technical Training and by the Number of Months of On-the-Job Experience . . .	42
VI. Employment by Frequency and Percentile of Respondents by Vocational-Technical Training Program by Occupational Profile Rating	43
VII. Employment Status by Frequency and Percentile of Respondents by Assistance in Job Placement	45
VIII. Employment Status by Frequency and Percentile of Respondents by the Number of Years of Participation in a Vocational Student Organization	47
IX. Employment Status by Frequency and Percent of Respondents by the Number of Visits to the High School Counselor Seeking Career Guidance	48
X. Employment Status by Frequency and Percent of Respondents by Upper Level Math Courses Taken During High School	50
XI. Employment Status by Frequency and Percent of Respondents by Upper Level Science Courses Taken During High School	51
XII. t-Test Between Employment Groups on Four Functions . . .	53
XIII. Cononical Discriminant Functions	54

CHAPTER I

INTRODUCTION

Since the passage of the Smith-Hughes Act in 1917, the principal rationale for public policies or policies which may provide funds that subsidize vocational education has been the notion that the kinds of jobs created by advanced technology require specialized skills. Those skills can best be taught through formal programs at the secondary and post-secondary levels (Wilms, 1984).

The rapid changes in technology in recent years has brought about a resurgence of the mission that directs vocational education as it relates to job-related placement for its program completers. Starr (1983) reported that since 1963, the history of vocational education and federal vocational education legislation suggested that vocational education took on four educational roles in preparing students for employment. Those four educational roles were:

1. occupational skills development
2. employability skills development
3. the provision of work experiences
4. the responsibility for placing students in training-related jobs (Starr, p. 1)

With the economy changing to a global marketplace, the many changes brought about by the educational reform movement, and the rapid changes in the automated workplace, educators must deal with those rapid changes with regard to recruitment, training, and related employment placement into the workplace. The A Nation At

Risk (1983) report proposes that the productivity of the future work force be one of the criteria for making judgments. Bishop (1989) further stated ". . . the three best indicators of an individual's economic productivity are the wage rates, earnings, and employment" (p. 4).

A major concern the public perceives is the lack of basic skills training taking place in today's classrooms. The information suggests that students in the United States ranked from twelfth to fourteenth in academic preparation when compared to the other industrial nations.

Basic academic skills are extremely important in the workplace of today and tomorrow. A fifth role for vocational education, basic skills development, has emerged more recently in response to a national concern about actual and potential shortages of skilled, industrially-oriented craftsmen and technicians in the 1990's and beyond (Starr, 1983).

Because highly skilled workers are the key ingredient for America's economy to survive in a global marketplace, it is imperative that the vocational education community respond accordingly. Training-related placement activities have always been accepted by vocational educators. The Education Amendments of 1976 stated that training-related placement is the "bottom line" in assessing the short-range effectiveness of vocational education (Starr, 1983).

Researchers have studied the effects of many different aspects of vocational education as it pertains to the gaining of related

employment for its students. A concern exists that vocational educators of today need to know specifically the areas that directly impact the opportunities for related placement into the world of work.

Statement of the Problem

The problem is that further progress in improving the effectiveness of vocational-technical education programs at the secondary level will be inhibited until there is better evidence of the major factors that influence successful employment for secondary vocational-technical program completers.

Purpose of the Study

The purpose of this study was to determine those factors other than vocational competencies that influence successful job-related employment upon completion of a two-year vocational training program in area vocational-technical school in Central Oklahoma.

Research Questions

The following research questions were used to guide the study of factors which influence secondary vocational educational program completers to gain related employment.

1. Do math and science courses influence students post-graduation employment?
2. Is post-graduation employment influenced by the number of times a student takes advantage of career guidance

counseling and placement services while a secondary vocational-technical education student?

3. Does student academic performance in high school influence post-graduation employment?

4. Do employability skills gained as a member of a vocational student organization influence post-graduation employment?

The null hypothesis tested was, H_0 : there is no difference between the factors group centroids on the discriminate score.

Limitations

This study had the following limitations:

1. The sample size was limited because of access to confidential student information.
2. Students employability skills profiles may not be standard to all programs involved in the study.
3. By using the student's last known address, return information may be limited.
4. All students surveyed may not have completed all sections of the standardized test; therefore, results may be incomplete.
5. Only one discriminant function could be identified because of the size of the sample of the study.

Assumptions

1. The students upper level math and science courses are listed and named according to Oklahoma Department of Education regulations.
2. The student's grade point average was calculated in a similar manner.

3. The instructors in the vocational programs used the Oklahoma Department of Vocational-Technical education competency profiles.

Definition of Terms

The following definitions were used in the conduct of the study:

Competency Profile: The approved Oklahoma Department of Vocational-Technical Education Completion certificate profile.

Composite Standardized Test Scores: The student's composite test scores on the MAT 6 Oklahoma Schools Testing Program during the 1987-88 school year.

Employability Skills: A function of attitude, habits, and deportment of general intellectual and manipulative skills (Mangum and Walsh, 1980, p. 2).

Guidance Counselor: The person employed at the comprehensive high school to provide counseling and guidance services for four or more hours per school day (State of Oklahoma Department of Education Administrators' Handbook, 1989-90, p. 25).

Grade Point Average: For purposes of this study a student's GPA is a cumulative average of the student's grades from grade 9-12 on a 4.0 system.

High Employment Demand Program: An increase in demand for workers in that occupation and the need to replace workers who retire or leave the labor force for other reasons or who transfer to other occupations (Occupational Outlook Quarterly, U. S. Department of Labor, Bureau of Labor Statistics, Fall 1989, p. 29).

Occupational Skills: Skills required to meet job requirements with regard to educational preparation (Occupational Outlook Quarterly, U. S. Department of Labor, Bureau of Labor Statistics, Fall 1989, p. 40).

Rural Setting: For the purposes of this study the school district includes an area less than 50,000 in population.

Urban Setting: For the purposes of this study the school district includes an area that exceeds 50,000 in population.

Vocational Student Organization: For purposes of this study the organizations recognized by the Oklahoma Department of Vocational-Technical Education (i.e., VICA, DECA, HOSA, FBLA, FHA, HERO, FFA).

Work-Related Experience: On-the-job training serving as learner or trainee on the job under the instruction of a qualified worker.

CHAPTER II

REVIEW OF THE LITERATURE

The review of literature was conducted to determine what had been written concerning the factors which influence secondary vocational education program completers and their ability to gain training-related employment. The review revealed that there had been many studies concerned with vocational education completers and their employment.

However, a study had not been done to discriminate between the factors which may, in fact, have been more influential in the area of successful job-related placement. Most of the literature was concerned with the occupational preparation of the vocational students.

The following topics guided the review of literature:

1. Secondary students' academic preparation as it relates to successful job-related placement.
2. Secondary student's vocational preparation as it related to successful job-related placement.
3. Other factors which may have an effect on successful job related placement for secondary vocational-technical completers.

The review of the literature revealed that few similar studies existed and no research instrument was available.

Secondary Student's Academic Preparation
as it Pertains to Successful
Related Job Placement

The rapid changes in technology are forcing America's current labor force, as well as the future work force, to evaluate the need for state-of-the-art training that will give students the ability to compete in a global market. There has been a resurgence of the "back to the basics" form of education in our country for the past seven years brought about by the "Nation at Risk" report in 1983 (Peters, 1991).

Technology is radically altering America's industries and economy. Today's rapid social, demographic, and economic changes are altering perceptions of heavy manufacturing to a service-based economy (Douthitt, 1986).

Various social forces propel women into the work force in unprecedented numbers. Both men and women now enter careers formerly closed to their genders. The times dictate a changing role for vocational education--and an increasingly important one (Douthitt, 1986). In the future, technological advances will come at an increasingly fast pace (Levin and Rumberger, 1983).

Vocational educational programs benefit the individual participants in the form of improved job prospects and higher earnings (Wilms, 1984, p. 347). The United States society as a whole benefits in the form of a more productive work force and a higher gross national product (Wilms, 1984).

Excellence in secondary education can improve the productivity of the nation's work force in at least four ways:

1. By ensuring that every young person obtains functional literacy . . . some minimal level of basic academic skills;
2. By improving the quality of the academic preparation of young people (especially for the high school graduates planning to attend post high school education);
3. By improving vocational education preparation of young people;
4. By improving the employability skills of young people (Bishop, 1989, p. 3).

In the past few years, basic academic skills development has received much attention by the public as a role for both general and vocational education (Starr, 1983). Basic academic skills are important partly because they also contribute to productivity directly, but primarily because they aid the learning of job specific and occupational skills (Bishop, 1989).

Based on research done by Hunter (1984), academic skills (general mental ability tests) have large associations with reported job productivity. Douthitt's (1986) research agrees that successful placement begins with reading and math skills. He also found that the vocational teachers add skills onto this foundation. These two components of a student's education foundation assures a smoother transition from education to work.

Other researchers have found that standardized test results positively relate to successful placement. Malone (1985) found that in 87 of 88 higher mean California Test of Basic Skills (CTBS) scores, there was a positive relationship to successful job placement (p. 36). He further concluded that those results illustrated the need for basic academic skills to increase the probability of success

in vocational education and the acquisition of training related employment.

The business and industry sectors of our society have responded to the importance of basic academic skills and the success that it brings to the workplace. Starr (1983) reported that three of every five manufacturers surveyed agreed with the need to stress basic academic skills at the secondary school level.

The teaching of basic skills in vocational education is becoming more and more a commonplace activity. The Oklahoma Department of Vocational and Technical Education completed a two-year pilot program of incorporating basic skills in vocational education programs in cooperation with comprehensive high school programs. Eastern Oklahoma County Area Vocational-Technical Center in Choctaw, Oklahoma is currently infusing the applied mathematics and applied communications curricula as part of the ongoing occupational curriculum delivery.

Certified mathematics and language arts teachers spend time each week in every vocational-technical education program teaching applied mathematics and applied communications as it relates to the vocational curriculum. Each vocational teacher is then to introduce a math and communications lesson each day that the specialists are not in the vocational program. This concept infuses academic education into the vocational-technical delivery of occupational training.

Those basic academic skills being taught as part of the vocational programs curriculum is in congruence with state policy makers, as well as recommendations from other researchers. Starr

(1983) reported that two out of three legislators stated that vocational education should increase its level of effort in basic skills instruction. Starr goes on to state, "basic skills are very important in gaining employment related to training" (p. 10).

Those areas of basic academic skills which seem to be the most important in successful job-related placement differ based on gender. Of all of the academic subjects, English seemed to have the most positive effect. The estimated effect of mathematics on wage rates and earnings, however, is very close to zero (Bishop, 1989).

Those findings differ when gender is taken into effect. For men, an increase in vocabulary skills enhances rise and stature in employment. For women, an increase in math scores enhances their position for higher and better employment stature (Bishop, 1989, p. 15).

With the resurgence of more basic academic skills in our nation's schools, students are having a more difficult task of finding enough time to incorporate vocational education into their school day. The research noted the positive effect vocational education has on wage earnings when taken with academic course work.

The effects of students taking two years of vocational education courses and reducing academic course work by a like amount were:

1. The positive impact of vocational course work on wage earnings was larger for men.
2. Trade and technical or other vocational courses have almost no effect on the wage rates and earnings of women.

3. Getting good grades in trade, technical, or other vocational education has a large impact on wage and earnings of young men (Bishop, 1989, p. 14).

Gustman (1981) also found that students who obtained two years of trade or technical course work in concert with two years of academic course work obtained a four percent higher wage, worked five percent longer, and earned 13 percent more wages per year, five years after high school graduation (p. 26).

The final judge of basic academic skills and their importance in obtaining job-related employment was in the perceptions of the students. Seven of ten secondary students indicated that basic academic skills very much helped them in securing a training-related job (Starr, 1983, p. 10).

Secondary Students' Vocational Preparation

as it Pertains to Successful

Job-Related Placement

The vocational preparation of the secondary student is of obvious importance to the education community and the taxpayer. The views of business and industry, education and the students themselves all play an important part in the students' overall transition from education to the world of work.

Vocational education is a vital part of the public education system in this country--one that has long been slighted in favor of academic education. Basic academic, as well as occupational skills, are of fundamental importance in preparing young people for productive lives in our society (Sherman, 1983). Ruff (1981) stated

"the primary public expectation of vocational education is occupational preparation" (p. 9). At least one writer suggests that public elementary and secondary schools in the country should offer a thorough grounding in the mechanical and technical skills and work habits that will prepare the students for work life (Sherman, 1983).

The views of business and industry about what they are looking for in productive employees is of utmost importance. In a 1983 study, 75 percent of manufacturers surveyed indicated that specific occupational skills need to be taught at the secondary school level (Starr, 1983, p. 16).

Wilgash (1988) reported that the match between occupational preparation and employee expectations is in agreement. The skills and behaviors being trained for in vocational education and employers' expectations necessary for successful entry into competitive employment also agree.

The expectations of business and industry deal with a very broad range of skills and attributes that they feel are necessary for job success. The Northwest Regional Education Lab (1986) in Portland, Oregon, compiled the following rank order of proposed vocational education skills and knowledge outcomes by educators and business people:

1. Basic, technical skills which are common to a cluster of jobs
2. Employability skills, such as promptness, dependability, and self-reliance
3. Abilities in problem-solving, communications, decision-making, interpersonal relationships, and resource management
4. Basic skills in use of common hand tools and machines as well as understanding of various materials and work processes

5. Technological literacy (i.e., conceptual understanding of computers, communication systems, etc.)
 6. Ability to cope with life situations and to realize self-awareness and self-worth
 7. Technical reading, writing, and mathematical skills which relate to a specific occupational or practical arts instructional program area
 8. Career awareness and the ability to make career and educational choices
 9. Basic reading, writing, and mathematical skills
 10. An awareness of, and positive attitude toward, safety procedures
 11. Knowledge of economic concepts
 12. An ability to take advantage of inevitable change
 13. Technical skills which are specific to one job
 14. Awareness of the role and responsibility of individuals working alone and in groups
 15. Ability to manage a home and personal business affairs
 16. The capacity for self-fulfilling use of leisure time
- (p. 13)

That rank order of attributes is congruent with a study done by Richardson (1981). His study dealt with employer expectations of vocational education students. His list included:

1. basic academic skills
2. communication skills
3. knowledge of the world of work
4. interaction with fellow workers and superiors
5. positive attitudes toward work
6. dependability
7. craftsmanship
8. productivity (p. 2)

Those studies point out the fact that much more than occupational training for a specific job is necessary for students to make the transition to the workplace. Since learners need both basic skills and vocational occupational training, tying the two together can strengthen the learning sequence and help students make the leap from academics to the real world (Buzzell, 1990).

The views of educators about what needs to be taught and the full scope that needs to be delivered is an important area of the

literature. Silberman (1982) found that secondary vocational education teachers have three intrinsic outcomes of concern:

1. technical skills and knowledge
2. communication skills and literacy
3. personal skills and attitudes (p. 9)

The first concern is of basic importance to vocational educators. One is to conclude that basic skills are not a substitute for skills that are specific to a job or an occupation (Bishop, 1989). Few would question the notion that the possession of specific occupational skills contributes to one's employability (Mangum and Walsh, 1980).

While learning a new skill is easier when the worker has good basic skills, a foundation of job knowledge and occupational skills is even more essential (Bishop, 1989). Bishop further stated that occupational skills have a greater direct impact on productivity than basic skills. Occupational skills and knowledge are essential because of their large, direct effects on productivity.

Based on Keeley's (1990) work, the areas of communication and literacy seemed to be essential. In the workplace, group communication and problem-solving skills are necessary. Clearly, schools must provide more opportunities to learn and practice academic skills that will be applied in the workplace. Those opportunities will prepare students better for the world of work; they will increase the effectiveness of academic skill instruction for many students.

The personal skills and attitudes of vocational education students exhibited in the workplace are important. Employability is first and foremost a function of attitudes, habits, and deportment of

general intellectual and manipulative skills (Mangum and Walsh, 1980, p. 12).

Occupational programs clearly are improved when educators create the best possible planned sequence of experiences for each individual learner by making a strong connection between what is being taught and the learner's needs (Buzzell, 1990). It is the responsibility of the vocational instructor to provide opportunities for the development of higher order thinking skills by consistently setting appropriate student objectives, planning instructional activities that will achieve these objectives, and evaluating students' high-order thinking skills (Miller, 1990).

The areas of competency-based instructional or outcome-based instruction are essential to matching trained students with employer expectations. Some feel that vocational education is in a position to accomplish this objective. Vocational education has a greater opportunity to use competency-based performance measures, computer simulations, direct observations, and product evaluations, based on standards found in business and industry (NWREL, 1986).

Hansen (1989) defined Outcome Based Education parameters to help evaluate students' success in occupational training programs. His principles of Outcome Based Education are:

1. Outcomes or objectives are clearly and publicly stated
2. Teaching is focused toward the stated objectives
3. Student learning is monitored frequently
4. Teaching and learning are adjusted frequently so that students have sufficient opportunity to master the objectives
5. Assessment reflects stated objectives and actual opportunities for student learning
6. A management system monitors the extent to which student have demonstrated achievement of the specified outcomes (p. 14).

Performance tests can be used to provide students with explicit feedback on which skills they have mastered and which ones require further practice (NWREL, 1986). Goodlad (1984) suggests that we would be well advised to look less at test scores in determining the quality of education in our schools and more to what students are called upon to do.

When these instructional techniques are used in occupational training programs, other improvements occur as well. Instructional activities in the classroom and lab develop students' higher order thinking skills, just as they develop other essential vocational skills (Miller, 1990). Vocational programs, that have integrated academic and vocational outcome-based instruction, report that dropout rates have decreased as motivation, test scores, grades and self-esteem have increased (Keeley, 1990).

The type of instruction in occupational training can be innovative and multi-faceted, but may not be the all-important link to job success. Rumberger and Daymont (1982) found that additional vocational education credits were associated with higher hourly earnings if the credit was earned in a program that had provided skills that were being used on the job by the student (p. 23). Occupationally specific education has a very positive impact on labor market success when training-related jobs are obtained (Bishop, 1989). However, according to Rumberger and Daymont (1982), additional credits in vocational education courses that were not related to the job had no positive effects.

Asche (1988) found that the skill level within the occupational field for which there is no market value may not result in higher pay

or a hiring advantage for the vocational student. He further stated "this effect is related to both occupational fields and the local labor market conditions" (p. 34). However, Bice (1973) found that vocational graduates who obtained a job in an occupation matching their field of training spend about 20 percent more time in the labor force than general track graduates. Campbell (1981) further found that 28 percent of the graduates who took two or more occupational vocational courses in a specific area entered a four-year college or university after high school (p. 12).

Bishop (1989) summed up most of the research in this area when he stated that, the ultimate pay-off only occurs when the job occupied is related to the occupational training that is received.

Other Factors Which May Have an Effect
in Successful Job-Related Placement
for Secondary Vocational-
Technical Completers

The review of literature yielded a number of other factors which seem to influence the successful placement of secondary vocational-technical program completers. The component of vocational education placement is an area that is approached in different ways by different people. Ohio was the first state to establish an employment agency in 1890. By 1907, the federal government had become involved in placement, eventually establishing a national job placement service through a combined federal-state agency (Martin, 1977).

Missouri's statewide job placement service is probably today's pre-eminent model. It included school-based placement, workshops, seminars, collection of follow-up information on students, job development, and employer public relations activities and placement coordination meetings (Noland and Cass, 1983).

Although state and federal governments are involved in the job placement arena, there is still a feeling that more needs to be done in this area. Two out of three state legislatures indicated vocational education should increase its efforts in providing work experience and job placement (Starr, 1983).

The career guidance dimension of student success seemed to be extremely important. A great deal of counseling and thought should precede the student's choice of an occupationally specific program. Where possible and appropriate, career exploration courses should be available to ninth and tenth grade students considering entry into occupationally specific training (Bishop, 1989). Bishop stated further ". . . that training should be offered only in occupations with substantial employer demand and with substantial employer involvement in delivery of the training."

The literature also revealed that good counseling services had a positive impact on job placement. Johnson (1981) stated that counseling services were related to outcomes in the following ways. The presence of a well-organized system of testing, planning, and record-keeping were associated with a high placement rate and with employer job ratings, particularly of work attitudes and working with others.

Based on those findings, Johnson (1981) recommended that effective counseling should therefore be associated with (a) good work attitudes and interpersonal effectiveness and (b) knowing enough about job availability to help students secure employment.

Johnson (1981) found that the overall organization of the counseling service was associated with higher placement rates. According to Nevo (1990), it is important to keep in mind that one of the aims of vocational counseling is to help the counselee arrive at a career decision. Nevo's study revealed that 85 percent of the counselees had made a career decision at the conclusion of counseling.

The actual work experience that students participate in during their occupational skills development seemed to be very important in successful placement. Relating to that, Silberman (1982) summed up his opinion of the purpose of vocational education:

To promote full human development through exposure of the learner to work experience as part of the education process . . .

The purpose of work is to further the education of the student; the work is subordinate to the education process (p. 299).

Researchers report an extremely high correlation between the type of work experience and successful placement. Sixty percent of groups reported that work experience was helpful to students in obtaining related jobs. Jobs that were not related to training seemed to have no benefit in helping students to secure related employment. If jobs were not related to training, high school graduates received no benefits from their vocational education (Bishop, 1989).

Employers also valued the importance of job-related work experience during vocational training. In the case of blue collar and service jobs, work experience was the qualification that employers preferred (Wilms, 1984).

The facts were that most vocational education students have a taste of employment before they complete their education and look for a full-time job. In most vocational and technical schools, placement personnel and faculty are involved in finding and monitoring part-time jobs as a means of keeping students in school and giving them lab experience in their chosen occupation (Douthitt, 1986).

In order for vocational education to do more in this area of job placement, vocational education graduates must possess certain attributes. McKinney (1981) shared the following points to enhance job placement with local business and industries from former vocational education students:

1. The students must have a positive work attitude.
2. The students must have a solid foundation of basic computation and communication skills.
3. The students must have good interpersonal skills.
4. The students must have developed a basic understanding of, and skills for, working in the occupation with appropriate tools and equipment (p. 10).

High, training-related placement rates appeared to result when well-informed career choices preceded training, when training is for an occupation in strong demand, when employees are involved in delivery, and vocational teachers (not placement directors) take responsibility for the placement of their students (Bishop, 1989). Mertens (1983) also found training-related placement to be enhanced when teachers assisted their students in finding jobs.

The test for determining program success in many states has been the placement of students in occupations that are related to their training (Hull, 1987). Schools tended to have higher rates of placement when job placement rates were used for program evaluation criteria and when teachers maintained frequent contact with business and industry representatives (McKinney, 1981).

The goals of vocational student organizations included helping students gain leadership skills, civic consciousness, vocational understanding, social intelligence, thrift, scholarship, spirit of competition, understanding of ethics, and respect for work (Harris and Sweet, 1981). Student vocational clubs were more visible at high placement sites (McKinney, 1981).

The areas of leadership and citizenship are delivered very well in the vocational student organizations (Ruff, 1981). The student activities produced a positive, significant effect on academic achievement (Camp, 1990).

The question of whether rural or urban settings played an important part in job placement were reviewed. Hull (1987) did report that placement services were perceived to be greater in urban areas, followed by suburban areas, and last available in rural schools. However, teachers in rural schools viewed summer jobs as important for graduates (Hull, 1987, p. 10).

Summary

The review of literature revealed many areas which seemed to impact the area of successful related employment for secondary

vocational program completers. The area of basic academic skills seemed to carry over into all aspects of student success in the classroom and on the job. Math and communications skills seemed to be essential to training and higher student scores on achievement tests, plus having the ability to adapt to a changing workplace.

The occupational training component of an educational program is very necessary for student success. A quality career guidance program to assist students in selecting the appropriate direction for the training was apparent. Also, the fact that it is imperative that students complete a two-year program of training was of great importance.

The student's employability skills are mentioned several times as being important. A good attitude about work and the ability to solve problems, are essential.

Actual placement of students should be a teacher driven activity. The type of program is of little consequence, as long as there is high employment demand in the particular field chosen by the student. Employer involvement is also very important in the overall placement of students into the world of work.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine those factors other than vocational competencies which influence successful job-related employment upon completion of a two-year vocational training program in area vocational-technical schools in central Oklahoma. The methodology described in this chapter was designed to answer the following questions concerned with successful related placement for secondary completers.

1. How many science courses beyond Biology I were completed during high school?
2. How many math courses beyond Algebra I were completed during high school?
3. What was the student's overall high school grade point average?
4. How many times did the student visit the high school counselor concerning career guidance?
5. What was the student's composite, standardized test scores during high school?
6. What was the student's average range on his/her vocational programs competency profile?
7. Was the student active in a vocational student organization?

8. How many months of related work experience did the student have during his/her training program?
9. Was the student trained in an urban or rural setting?
10. Was the student training in a high employment demand program?
11. Were the student placement responsibilities the responsibility of a placement director or the student's teacher?

The null hypothesis tested was, H_0 : there is no difference between the factors group centroids on the discriminate score.

Type of Research

Descriptive research as defined by Key (1974) is: "used to obtain information concerning the current status of a phenomena. The purpose of these methods describe 'what exists' with respect to variables or conditions in a situation" (p. 126).

Van Dalen (1979) commented on the investigator's use of descriptive research: "Determining the nature of prevailing conditions, practices, and attitudes--seeking accurate descriptions of activities, objects, processes, and persons--is their [the investigators'] objective" (p. 284).

The data for descriptive research can be collected in a number of ways, although the most common method of descriptive data collection is by "administering questionnaires, interviewing subjects, observing events, or analyzing documentary sources" (Van Dalen, 1979). There are two types of descriptive research: the survey and the case study (Turney and Robb, 1971). "The survey is an

attempt to analyze, interpret, and report the status of an institution, group, or area in order to guide practice in the immediate future" (p. 63).

According to Stevens,

a discriminate analysis has two features: (1) parsimony of description and (2) clarity of interpretation. It can be quite parsimonious in that in comparing five groups on, say, ten variables, we may find that the groups differ mainly on only two major dimensions, i.e., the discriminate functions. It has a clarity of interpretation in the sense that separation of the groups along one function is unrelated to separation along a different function. This is all fine, provided that we can meaningfully name the discriminate functions and that there is adequate sample size so that the results are generalizable (p. 233).

Survey research and analysis of subjects' data from high school transcripts by the researcher were used to collect the data for this study.

Selection of the Subjects

The population of the study included all two-year completers enrolled in the six metropolitan Oklahoma City Area Vocational-Technical Centers from August 1988 to May 1990. The total number of eligible completers was 868. Population data were provided by the information services division of the Oklahoma Department of Vocational and Technical Education in Stillwater, Oklahoma.

A purposive sample was used based on Kerlinger's (1973) rationale that such a technique was appropriate when presumable typical groups were desired for the study. The total sample size was 90 two-year completers from six metropolitan Oklahoma City Area Vocational-Technical Centers comprising approximately 10.3 percent of

the total population. A conscious effort was made to select both large and small, as well as, urban and rural area vocational-technical centers for the study. A large diversity exists among the six area vocational-technical centers selected, so that an analysis could be made to determine if the population area of the vocational-technical centers was a factor.

Collection of Data

A letter was sent to each area vocational-technical centers involved in the study with a list of students names and identification numbers attached (Appendix A). A copy of the student's high school transcript, standardized test scores, and occupational program competency profile was requested. After receiving this information it was determined that 78 of the original 90 subjects qualified using the criteria specified in the study. A survey questionnaire (Appendix B) was mailed to the 78 subjects on November 1, 1991. A letter (Appendix C) was mailed to each subject explaining the study and requesting their return of the questionnaire. A letter from Dr. Roy Peters (Appendix D), State Director of the Oklahoma Department of Vocational and Technical Education, was also mailed to explain the need for the study.

Twenty-six of the original 78 subjects responded during the month of November 1991. The response constituted a 33 percent return of the initial mail out. A second questionnaire mail out was completed on December 2, 1991 to the nonrespondents of the first mail out. A second letter (Appendix E) accompanied the second mail out of the five question questionnaire.

A return of 12 questionnaires was received by December 15, 1991. The return constituted a 49 percent return of the total sample. An additional 28 subjects who had not returned the questionnaire were contacted by telephone from December 15, 1991 through December 22, 1991. The telephone contacts constituted 36 percent of the total sample surveyed. The survey mail out returns and telephone contacts totaled 65 subjects being surveyed which is 85.3 percent of the sample selected. A single sample chi-square test was administered to check if a significant difference occurred between the mailed group and the called group on each of the factors under study. No differences were found between the called group and the mailed group. According to Stevens (1986) this is an adequate sample size and return to investigate the given effect of the variables being tested.

Analysis of Data

The data from the collection instrument were entered into a computer data base so that it could be sorted and analyzed. After analyzing the data, the three functions of competency profile range, number of upper level math courses, and number of level of science courses were removed from the analysis. These functions seemed to have little or no effect on employment.

According to Barrick and Warmbrod (1988), when comparing two or more groups in terms of many variables, you are interested not only in whether the groups differ significantly from one another; but if they do differ significantly, an understanding of the differences is also interesting (p. 1).

The three questions that discriminant analyses asks are as follows:

1. How well is one able to 'discriminate' between the groups on the basis of some sort set of variables (discriminating variables)?
2. How well does the set of variable discriminate?
3. What variables are the most powerful discriminators? (Barrick and Warmbrod, 1988, p. 1).

According to Barrick and Warmbrod, the following assumptions exist when a discriminate analysis technique is used to investigate discriminating functions of variables.

Assumptions:

1. You must have two or more groups.
2. Sample size such that there are at least two cases per group. Total sample size should be at least two or preferably three times the number of variables used. The size of the smallest group should be no less than the number of variables used (Barrick and Warmbrod, (p. 1).

This study met the above assumptions that Barrick and Warmbrod state are necessary to perform a discriminate analysis. Five groups and eleven variables were analyzed in this study with 65 subjects being investigated. Three times the number of groups were used and six times the number of variables constituted the total sample size.

The discriminating variables which had significantly higher means than the other group(s) were listed. The list of discriminating variables on which the reverse was true were also listed as suggested by Barrick and Warmbrod.

A one-way ANOVA was used to calculate the significance test for the equality of means for each discriminating variable. The discriminating power of the discriminate function is the eigenvalue (Barrick and Warmbrod, 1988). The coefficients of the discriminate

function were calculated so that the ratio (for the discriminate scores) of the between groups sum of squares to the within-group sum of squares is as large as possible. The formula for eigenvalue is as follows:

$$\text{Eigenvalue} = \frac{\text{between groups sum of squares}}{\text{within-groups sum of squares}}$$

(Barrick and Warmbrod)

Based on this formula, the size of the eigenvalue was related to the discriminating power of that particular discriminate function. The larger the eigenvalue, the greater the discriminating power of the function.

Since there were more than three groups which pertained to employment status, a comparison was done to compare the relative discriminating power of each discriminate function by examining the eigenvalues for each function. In order to make comparisons, the eigenvalues were converted to relative percentages as suggested by Barrick and Warmbrod, 1988.

The final step is to sum the eigenvalues to get a measurement of the total discriminating power. Dividing the sum into each individual eigenvalue results in the relative percentage of the total discriminating power that is contained by each function. The relative percentages of the total discriminating power equaled one hundred.

The Wilks' lambda--a multi-variate measure of group differences over several discriminating variables--was used to determine significance. As the Wilks' lambda increases toward its maximum value 1.0, it indicates progressively less discrimination. When Wilks'

lambda equals 1.0, the group centroids are equal [there were no group differences] (Barrick and Warmbrod, 1988).

To test the significance of lambda, a conversion to a variable that had approximately a chi-square distribution with $(p-k)$ $(g-k-1)$ degrees of freedom was used. The formula equivalents were:

P = number of discriminating variables

K = number of discriminate functions derived

G = number of groups (Barrick and Warmbrod, 1988, p. 8)

An alpha level of .05 was selected by the researcher.

CHAPTER IV

FINDINGS

Introduction

This chapter presents the analysis of the data from the study of factors which influence secondary vocational-technical educational program completers ability to gain related employment. Six central Oklahoma Area Vocational-Technical centers participated in the study.

Factors which influence secondary vocational-technical education program completers to gain employment were investigated by reviewing students high school transcripts, survey questionnaire, and information taken from the Oklahoma Department of Vocational-Technical Education's follow-up data base.

In this chapter, a description of the sample, the statistical analyses, and findings are presented.

Description of the Sample

A purposive sample of 78 secondary two-year completers comprised the subjects for the study. All of the subjects were 1990 graduates of the six central Oklahoma Area Vocational-Technical Centers chosen for the study.

The five group variables which were involved in the study dealt

with the type of current employment status of the 78 subjects:

1. employed related to vocational-technical training
2. continuing education
3. military
4. employed not related to vocational-technical training
5. unemployed

The subjects were categorized by the program cluster in which they were trained, gender, and whether they attended an urban or rural vocational-technical center in central Oklahoma (Table I).

There were four program areas of training that the subjects were in. They are as follows:

1. Business and Office
2. Health Occupations
3. Occupational Home Economics
4. Trade and Industrial

Table I shows that the majority of the sample came from the urban male category (44.6%) and the smallest segment was from the rural female category. The Table revealed that there were no male health students either urban or rural and no rural male Home Economics students in the sample.

The overall sample included 70.7 percent male and 29.3 percent female. The urban respondents comprised 59.9 percent of the sample and the rural respondents 39.9 percent. The Trade and Industrial program of training was the largest segment of the sample taken with 70.7 percent. Business and Office was next with 13.8 percent, Home Economics 9.2 percent, and Health Occupations with 6.1 percent.

TABLE I

FREQUENCY AND PERCENT OF RESPONDENTS BY SEX, VOCATIONAL SERVICE AREA
OF TRAINING AND RURAL/URBAN LOCATION

Vocational Service Area of Training	<u>Rural Gender</u>				<u>Urban Gender</u>				<u>Totals</u>			
	<u>Male</u>		<u>Female</u>		<u>Male</u>		<u>Female</u>		<u>Male</u>		<u>Female</u>	
	N	%	N	%	N	%	N	%	N	%	N	%
Business and Office	3	4.6	1	1.5	2	3.1	3	4.6	5	7.7	4	6.2
Health	0	0	3	4.6	0	0	1	1.5	0	0	4	6.2
Home Economics	0	0	2	4.6	1	1.5	3	4.6	1	1.5	5	7.7
T & I Education	14	21.5	3	4.6	26	0	3	4.6	40	61.5	6	9.2
Total	17	26.1	9	13.8	29	4.6	10	15.3	46	70.7	19	29.3

N = 65

Of the nine Business and Office respondents, five were male and four female with four coming from the rural centers and five from the urban areas. Health Occupations had four respondents, all female with three from the rural centers and one from an urban center.

Home Economics had six respondents, two female rural, one urban male and three urban females. There were no rural males in this category in the sample. The Trade and Industrial category was composed of 46 respondents. There were 14 rural males and three rural females in the sample also 26 urban males and three urban females responding. The total number of respondents in all categories was 65.

Statistical Analysis

Table II depicts the employment status by frequency and percentile of respondents by vocational-technical training service area. Because the Trade and Industrial area of training comprised the largest raw number of respondents, it is no surprise that this area also produced the largest number (15) of employed related to vocational-technical training. This constituted 23.08 percent of the total sample surveyed and 32.8 percent of the total (46) Trade and Industrial respondents. Business and Office had five respondents employed related to their training or 7.69 percent of the total respondents which means 55.5 percent of total Business and Office respondents are employed related to their program of training. Health Occupations had three respondents employed related to their training which comprised 4.62 percent of the total sample. Of the four Health Occupations respondents three or 75 percent of the total

TABLE II

EMPLOYMENT STATUS BY FREQUENCY AND PERCENT OF RESPONDENTS BY RELATIONSHIP TO
VOCATIONAL-TECHNICAL TRAINING BY SERVICE AREA.

Employment Status	Vocational Service Area of Training									
	<u>Business & Office</u>		<u>Health</u>		<u>Home Economics</u>		<u>T&I</u>		<u>Total</u>	
	N	%	N	%	N	%	N	%	N	%
Employed Related	5	7.69	3	4.62	2	3.08	15	23.08	25	38.5
Employed Not Related	1	1.54	0	0	1	1.54	12	18.46	14	21.5
Continuing Education	2	3.08	1	1.54	1	1.54	7	10.77	11	16.9
Military	1	1.54	0	0	1	1.54	4	12.31	10	15.4
Unemployed	0	0	0	0	1	1.54	4	6.15	5	7.7
Total	9	13.85	4	6.16	6	9.24	46	70.77	65	100

N = 65

in that category were employed related to their vocational-technical training. Home Economics had two respondents employed related to their training or 3.08 percent of the total sample. This also constituted 33 percent of the six total Home Economics respondents surveyed.

Table II also revealed that the Trade and Industrial area of vocational-technical training had the most (12) employed not related to their training. These 12 respondents comprised 18.46 percent of the total sample. Business and Office and Home Economics each had one respondent which was 1.54 percent respectively. Health Occupations did not have any respondents in this category.

A total of 11 respondents were continuing their education with Trade and Industrial having seven of these respondents or 10.77 percent of the total sample. Business and Office had two in this category or 3.08 percent and Health Occupations and Home Economics each had one or 1.54 percent of the total sample respectively. There were ten respondents in the military with Trade and Industrial having eight or 12.31 percent of the total sample. Business and Office and Home Economics each had one respondent comprising 1.54 percent respectively.

A total of five of the respondents were found to be unemployed at the time of the survey. Four of these respondents were from the Trade and Industrial area of training with one from Home Economics, these comprised 6.15 percent and 1.54 percent of the total sample respectively.

Table III depicts the employment status of respondents and its relationship to high school grade point average. The range of high

TABLE III

EMPLOYMENT BY FREQUENCY AND PERCENTILE OF RESPONDENTS BY RELATIONSHIP
TO HIGH SCHOOL GRADE POINT AVERAGE

Employment Status	Grade Point Average Range											
	<1.5		.5-2.0		2.1-2.5		2.6-3.0		3.1-3.5		3.6-4.0	
	N	%	N	%	N	%	N	%	N	%	N	%
Employed Related	1	1.54	2	3.08	6	9.23	11	16.92	4	6.15	1	1.54
Employed Not Related	2	3.08	2	3.08	7	10.77	2	3.08	1	1.54	0	0
Continuing Education	0	0	1	1.54	2	3.08	7	10.77	1	1.54	0	0
Military	0	0	0	0	6	9.23	2	3.08	1	1.54	1	1.54
Unemployed	0	0	3	4.62	2	3.08	0	0	0	0	0	0
Total*	3	4.62	8	12.32	23	35.39	22	33.85	7	10.77	2	3.08

*Totals may not equal 100% due to rounding

school grade point averages were: below 1.5, 1.5-2.0, 2.1-2.5, 2.6-3.0, 3.1-3.5, and 3.6-4.0, they were based on the 4.0 grading system. The largest number (11) of employed related to vocational-technical training was in the 2.6-3.0 grade point average. This number constituted 16.92 percent of the total sample. The < 1.5 and 3.6-4.0 groups each had one respondent or 1.54 percent of the total sample respectively. The employed not related to vocational-technical training had seven respondents in the 2.1-2.5 range comprising 10.77 percent of the total sample. Seven respondents in the continuing education category were found to be in the 2.6-3.0 grade point range accounting for 10.77 percent of the total sample. The respondents which were in the United States military all had high school grade point averages of at least 2.1 or higher. There were six in the 2.1-2.5 range, two in the 2.6-3.0 range and one each in the 3.1-3.5 and 3.6-4.0 ranges. These 10 respondents comprised 15.39 percent of the total sample drawn. There were five subjects unemployed, three in the 1.5-2.0 range and two in the 2.1-2.5 range. This accounted for 7.7 percent of the total sample.

Table IV shows the relationship between employment status and results of respondents standardized test scores on the Metropolitan Achievement Test #6. Four quartiles were chosen to categorize the respondents lower 0-25 percent, middle low 26-50 percent, middle high 51-76 percent, and high 76-100 percent. There were no respondents in the high quartile. Of the 25 respondents which are employed related to their area of vocational-technical training, three were in the low

TABLE IV

EMPLOYMENT BY FREQUENCY AND PERCENTILE OF RESPONDENTS BY RELATIONSHIP
TO STANDARDIZED TEST SCORE RESULTS.

Employment Status	Standardized Test Score Percentile Range					
	0 - 25%		26 - 50%		51 - 75%	
	N	%	N	%	N	%
Employed Related	3	4.62	15	23.08	7	10.77
Employed Not Related	4	6.15	10	15.38	0	0
Continuing Education	1	1.54	7	10.77	3	4.62
Military	2	3.08	7	10.77	1	1.54
Unemployed	3	4.62	1	1.54	1	1.54
Totals*	13	20.01	40	61.54	12	18.47

*Totals may not equal 100% due to rounding

quartile, 15 in the middle low quartile, and seven in the middle high quartile. Of the 14 respondents employed not related to their vocational-technical training, four were in the low quartile and 10 in the middle low quartile. The continuing their education segment of the sample had one in the low quartile, seven in the middle low and three in the middle high quartiles. The ten military respondents were broken down as follows: two in the low, seven in the middle low, and one in the middle high. Of the unemployed, three were in the low, and one each in the middle low and middle high quartiles respectively. Table V depicts the number of months the respondents worked on-the-job training related to their vocational-technical training. There were five categories depicting the number of months worked, they are as follows: 0 months, 1-2 months, 3-4 months, 5-6 months, and more than six months. Of the 25 employed related group, 11 did not work any-on-the job training, the remaining 14 respondents ranged as follows: four worked 1-2 months, six worked 3-4 months, four worked 5-6 months or more. Of the 14 employed not related to training, 10 did not perform any on-the-job training with two working 1-2 months and two working 5-6 months or more. The continuing their education respondents had four which did not work, three in each of the 1-2 months and 3-4 months categories and one in the 5-6 months category. The ten military respondents found seven with no experience and one each in the 1-2 months, 3-4 months, and the more than six months categories. The five unemployed respondents had four with no on-the-job experience and one with 5-6 months experience.

Table VI shows the frequency and percent of employment status based on the occupational competency profile rating. Three levels of

TABLE V

EMPLOYMENT BY FREQUENCY AND PERCENTILE OF RESPONDENTS BY RELATIONSHIP TO
 VOCATIONAL-TECHNICAL TRAINING AND BY THE NUMBER OF MONTHS OF
 ON-THE-JOB TRAINING EXPERIENCE

Employment Status	Number of Months of On-the-Job Training Experience									
	0 Months		1-2 Months		3-4 Months		5-6 Months		More than 6 Months	
	N	%	N	%	N	%	N	%	N	%
Employed Related	11	16.92	4	6.15	6	9.23	2	3.08	2	3.08
Employed Not Related	10	15.38	2	3.08	0	0	1	1.54	1	1.54
Continuing Education	4	6.15	3	4.62	3	4.62	1	1.54	0	0.62
Military	7	10.77	1	1.54	1	1.54	0	0	1	1.54
Unemployed	4	6.15	0	0	0	0	1	1.54	0	0.54
Totals	36	55.37	10	15.39	10	15.39	5	7.7	4	6.15

N = 65

TABLE VI

EMPLOYMENT BY FREQUENCY AND PERCENTILE OF RESPONDENTS BY VOCATIONAL-TECHNICAL
TRAINING PROGRAM BY OCCUPATIONAL PROFILE RATING

Employment Status	Occupational Competency Profile Range					
	1.1 - 2.0		2.1 - 3.0		3.1 - 4.0	
	N	%	N	%	N	%
Employed Related	2	3.08	9	13.85	14	21.45
Employed Not Related	0	0	12	18.46	2	3.08
Continuing Education	0	0	6	9.23	5	7.69
Military	0	0	7	10.77	3	5.46
Unemployed	0	0	3	4.62	2	3.08
Totals*	2	3.08	37	56.93	26	40.01

*Totals may not equal 100% due to rounding

competency rating were found to exist. The ranges were 1.1-2.0, 2.1-3.0, and 3.1-4.0. Fourteen respondents were found to be in the high range that were employed related to their vocational-technical training, this constituted 21.54 percent of the total sample. Only two respondents were found to be in the low range that were employed related. A total of 37 respondents or 56.93 percent of the total sample were in the middle range of 2.1-3.0. Another 26 respondents or 40.01 percent were in the high range. A total of 63 or 96.94 percent of the respondents were in the mid to high range. The unemployed total of five or 7.7 percent to the total sample were also in the middle to high range.

Table VII depicts the assistance that the respondents had in gaining employment. The vocational-technical program instructor and other were the only responses received. The other category was either self or family member assistance. The third choice on the survey, area vocational-technical placement personnel was not chosen by any of the respondents. Of the employed related to vocational-technical training 11 or 16.92 percent responded that their program instructor assisted them in gaining employment while 14 or 21.54 percent of the total sample had others to assist. A total of 45 or 69.24 percent were assisted by people other than their program instructor. A total of 20 or 30.77 percent were shown to be assisted by their program instructor in gaining employment. The five unemployed had been recently employed, two of these five listed their program instructor as instrumental in gaining employment while three respondents listed other.

TABLE VII

EMPLOYMENT STATUS BY FREQUENCY AND PERCENTILE OF RESPONDENTS BY ASSISTANCE IN JOB PLACEMENT

Employment Status	Job Placement Assisted By			
	Program Instructor		Other	
	N	%	N	%
Employed Related	11	16.92	14	21.54
Employed Not Related	1	1.54	13	20.00
Continuing Education	4	6.15	7	10.77
Military	2	3.08	8	12.31
Unemployed	2	3.08	3	4.62
Totals*	20	30.77	45	69.24

*Totals may not equal 100% due to rounding

The employment status and how many years the respondents participated in vocational student organizations are depicted in Table VIII. There were four categories: 0 years, 1 year, 2 years, or more than two years participation in a vocational student organization. Of the 25 respondents which were employed related to their vocational-technical training 19 or 29.23 percent of the total sample had been members of a vocational student organization for two years. Three in the employed related group had not been in a vocational student organization which two had been for one year and one had been a member for more than two years. A total of 52 respondents or 80.01 percent had participated in two years or more in vocational student organizations. Three of the five unemployed had also participated for two years.

Table IX shows the frequency and percent of the respondents by employment status based on the number of visits to the school counselor seeking career guidance during high school. There were six categories that the respondents had to choose from. They ranged from zero trips to more than four visits. Twenty-one of the 25 employed related respondents had visited the counselors office at least once with five visiting once, eight visiting twice, four making three trips, one making four trips, three respondents visited the counselor four or more times. Four respondents which are employed related to training did not visit the counselor during high school. Of the 65 respondents, a total of 12 or 18.46 percent of the total sample did not visit the school counselor seeking career guidance during high school. The largest number of trips to the counselor was two listed

TABLE VIII

EMPLOYMENT STATUS BY FREQUENCY AND PERCENTILE OF RESPONDENTS BY THE NUMBER OF YEARS
OF PARTICIPATION IN A VOCATIONAL STUDENT ORGANIZATION

Employment Status	<u>Number of Years Participation in Vocational Student Organization</u>							
	<u>0 Years</u>		<u>1 Year</u>		<u>2 Years</u>		<u>> 2 Years</u>	
	N	%	N	%	N	%	N	%
Employed Related	3	4.62	2	3.08	19	20.23	1	1.54
Employed Not Related	2	3.08	1	1.54	11	16.92	0	0
Continuing Education	1	1.54	0	0	9	13.85	1	1.54
Military	1	1.54	1	1.54	8	12.31	0	0
Unemployed	1	1.54	1	1.54	3	4.62	0	0
Totals*	8	12.32	5	7.70	50	76.93	2	3.08

*Totals may not equal 100% due to rounding

TABLE IX

EMPLOYMENT STATUS BY FREQUENCY AND PERCENT OF RESPONDENTS BY THE NUMBER OF VISITS TO THE HIGH SCHOOL COUNSELOR SEEKING CAREER GUIDANCE

Employment Status	Number of Trips to Seek Guidance Counseling											
	0		1		2		3		4		5+	
	N	%	N	%	N	%	N	%	N	%	N	%
Employed Related	4	6.15	5	7.69	8	12.31	4	6.15	1	1.54	3	4.62
Employed Not Related	4	6.15	2	3.08	6	3.08	0	0	0	0	0	0
Continuing Education	1	1.54	2	3.08	3	4.62	2	3.08	3	4.62	0	0
Military	2	3.08	1	1.54	4	6.15	3	4.62	0	0	0	0
Unemployed	1	1.54	1	1.54	2	3.08	1	1.54	0	0	0	0
Totals*	12	18.46	11	16.93	23	35.39	12	18.47	4	6.16	3	4.62

*Totals may not equal 100% due to rounding

by 23 of the respondents. This number constituted 35.39 percent of the total sample.

Table X relates employment status by frequency and percent of respondents by the number of upper level math courses beyond Algebra I which were taken during high school. There were three categories which were represented in this Table ranging from no courses taken, one course taken or two courses taken. Forty-four respondents or 67.71 percent did not take a math course beyond Algebra I while in high school regardless of employment status. Only two respondents or 3.08 percent of the total sample had two math courses beyond Algebra I in high school. One respondent in the employed related and one in the continuing education category. Eight subjects in the employed related and seven subjects in the continuing education category reported having one math course beyond Algebra I in high school. This accounted for 23.08 percent of the total sample. None of the unemployed reported having any math courses beyond Algebra I in high school.

Table XI shows the employment status by frequency and percent of respondents compared to the number of upper level science courses taken beyond Biology I while in high school. The surveys returned represented two categories, those which did not take any science courses beyond Biology I and those that had taken one course. Of the 65 respondents, only seven or 10.77 percent reported that they had taken a science course beyond Biology I while in high school. Of those seven responses, three were in employed related and four were in the continuing education categories.

TABLE X

EMPLOYMENT STATUS BY FREQUENCY AND PERCENT OF RESPONDENTS BY
UPPER LEVEL MATH COURSES TAKEN DURING HIGH SCHOOL

Employment Status	Number of Upper Level Math Courses Taken					
	0		1		2	
	N	%	N	%	N	%
Employed Related	16	24.62	8	12.31	1	1.54
Employed Not Related	12	18.46	2	3.08	0	0
Continuing Education	3	4.62	7	10.77	1	1.54
Military	8	12.31	2	3.08	0	0
Unemployed	5	7.69	0	0	0	0
Total*	44	67.71	19	29.24	2	3.08

*Totals may not equal 100% due to rounding

TABLE XI

EMPLOYMENT STATUS BY FREQUENCY AND PERCENT OF RESPONDENTS BY
UPPER LEVEL SCIENCE COURSES TAKEN DURING HIGH SCHOOL

Employment Status	Number of Upper Level Science Courses Taken			
	0		1	
	N	%	N	%
Employed Related	22	33.85	3	4.62
Employed Not Related	14	21.54	0	0.00
Continuing Education	7	10.77	4	6.15
Military	10	15.38	0	0.31
Unemployed	5	7.69	0	0.62
Totals*	58	89.23	7	10.77

*Totals may not equal 100% due to rounding

Students' t-tests were completed to determine if identified functions were related to employment. The functions of number of upper level math courses taken, number of upper level science courses taken, occupational competency profile range and the number of years a student was a member of a vocational student organization were considered between employed and unemployed completers. There were no significant differences between the two employment categories on the four functions tested (Table XII).

A discriminant analysis procedure was completed on three employment categories (1) employed related to training/continuing education (2) employed not related to training/military (3) unemployed] considering the functions of grade point average, MAT6 standardized score quartile, number of months of on-the-job training related to training and number of visits to the guidance counselor seeking career guidance.

The discriminant analysis (Table XIII) reveals that the primary discriminant function is the grade point average, with the number of months of on-the-job training being the second most important function.

Although the Eigenvalue is .41150, not as close to 1.0 as desired, the function is significant at the .0091 level.

Examination of the Null Hypothesis

In testing the null hypothesis, which was based on the discriminant analysis, the null hypothesis was rejected because at least one function was significantly different for the employment groups, in this case the student's grade point average.

TABLE XII

t-TEST BETWEEN EMPLOYMENT GROUPS ON FOUR FUNCTIONS

Function	t-Value	Significance
Competency Profile Range	1.519	No
Number of Years in a Vocational Student Organization	.929	No
Number of Upper Level Math Courses Taken	2.465	No
Number of Upper Level Science Courses Taken	1.818	NO

t @ .05, 1 df = 12.706

TABLE XIII
CANONICAL DISCRIMINANT FUNCTIONS

	Eigenvalue	Percent of Variance	Cumulative Percent	Canonical Correlation	Wilks' LAMBA	Chi Square	Significant
	.41150	100.0	100.0	.5399404	.7084643	20.335	.0091
DISCRIMINANT FUNCTION COEFFICIENTS							
	<u>FUNCTION</u>						
Grade Point Average	.63866						
On-the-Job Training	.43130						
MAT 6 Scores	.38042						
Trips Seeking Career Guidance	.24862						

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This study was conducted to determine those factors other than vocational competencies which influence successful job-related employment upon completion of a two-year vocational training program in area vocational-technical schools in central Oklahoma. A Review of the Literature was conducted and it was discovered that although other studies had been done pertaining to the subject of related job placement, none had been done to investigate which factor(s) seemed to influence this culmination of vocational-technical training. Consequently, very little could be said about which aspects of the overall vocational-technical education delivery has the most impact on whether a student will be able to gain employment in a field related to his/her training upon completion of their vocational-technical training. This study then provides a unique approach in that it seeks to compare eleven different aspects of a students individual differences to see which of those aspects seemed to influence their success in gaining employment related to their vocational-technical training.

Four major research questions guided this study:

1. Do math and science courses influence students post-graduation employment?

2. Is post-graduation employment influenced by the number of times a student takes advantage of career guidance counseling and placement services while a secondary vocational-technical education student?

3. Does student academic performance in high school influence post-graduation employment?

4. Do employability skills gained as a member of a vocational student organization influence post-graduation employment?

Data for the study were collected by survey research, followup information from the Oklahoma Department of Vocational-Technical Education, and the subject's high school transcripts. The purposive sample for the study consisted of 78 two-year vocational-technical completers who graduated high school in May, 1990. The subjects were chosen from six vocational-technical education centers in Central Oklahoma. A concerted effort was made to include both urban and rural subjects. A survey questionnaire was mailed to the 78 subjects on November 1, 1991 and a second mail out was completed on December 1, 1991. Non-respondents were called during the week of December 15, 1991 through December 22, 1991. Recovery rates were 49 percent for the surveys returned in the mail and 36 percent for the called respondents. This constituted an 85.3 percent return of the total sample.

Results of the Study

The results of the study are summarized in the following

findings:

1. Less than half, 48 percent, of the vocational-technical education completers which were employed related to training, continuing their education or in the military had any on-the-job training during high school.
2. The vocational-technical students and their families were most responsible for the students gaining employment after graduation.
3. The employed related to training, continuing their education and military groups sought career guidance more often than the employed not related and the unemployed.
4. A small percentage of vocational-technical completers are taking upper level math and science courses during high school.
5. A large majority of students taking vocational-technical education are in the low and middle low quartiles on standardized test results.
6. A students grade point average and the number of months of related on-the-job training seemed to have the most effect on employment.
7. A students standardized test score results and the number of visits to the school counselor seeking career guidance also seemed to contribute to the overall success of students gaining employment related to their training.
8. A majority of students participated in two years of a vocational student organization.

Conclusion

Although the results of this study identified statistical differences in the discriminant functions tested, they also identified additional questions which prohibit sound conclusions of the overall impact each function may have had on the ability to gain related employment. The following conclusion should be interpreted with caution until further research is conducted that will provide a thorough investigation targeted at those questions. Based on the findings, the researcher arrived at the following conclusion:

It is concluded that only grade point average and the number of months of on-the-job training are factors other than vocational competency that affect job placement of graduates after completing high school vocational-technical programs.

The null hypothesis H_0 : there is no difference between the factors group centroids on the discriminant score was rejected because differences in the group centroids were found.

Discussion

The vocational-technical education centers throughout Oklahoma are continually striving to attract higher quality students into their programs to enhance the overall quality of their products for business and industry to employ. This study revealed that there were not any students in the upper quartile on the MAT6 achievement test and only a small number of students taking upper level math and science courses.

New strategies need to be developed to encourage students to plan early enough in their school program of study to be able to prepare for college but also to be able to take advantage of vocational-technical education as well. The tech-prep pilot programs, which link academic and vocational programs, certainly could be the direction that will help to overcome the apparent lack of more academically oriented students having the opportunity to include vocational-technical education to their overall education plan.

The validity of the current occupational competency profile may need to be enhanced. The discriminating ability of the current profiles in place may need to be broadened to allow teachers the ability to be more discriminating when comparing student's ability to the needs of business and industry. Instead of a four or five point scale, an eight or ten point scale needs to be investigated to allow teachers to be more accurate with their judgments based on actual student outcomes.

The findings in this study did not agree with past studies (Bishop and Mertens) in that students and family members had more influence in helping to gain related employment. The question of teacher involvement in the placement of students on the job needs to be addressed. Teachers need to understand their role in the overall success of their students, not only while they are in the classroom, but just as importantly after the students are placed on the job for which they were trained. The possibility of making job placement and student followup an integral part of the teacher evaluation process would be a step in encouraging a better effort in this area.

Another possible link to better job placement, is the nurturing of advisory committee relationships between area vocational-technical programs and the business and industry communities. This study also conflicted with earlier studies (Wilms and Douthitt) about the importance of related on-the-job training. Approximately 45 percent of the total sample, whether employed or unemployed, had any on-the-job training. The relationships between the graphic arts industry and vocational-technical school printing programs in the State of Oklahoma is an excellent example of the positive results that can take place when business and industry is directly linked to the quality control of the education of vocational-technical students preparing for careers in the graphic arts field of study. The types of shared responsibilities should be encouraged for all training programs in area vocational-technical centers throughout the state.

The amount of time a student spends in a vocational student organization did not have as much discriminating power because most of the students surveyed had spent two years in a vocational student organization compared to academic and basic skill preparation of vocational-technical education students. The relationship of academic preparation and basic skills may need to be expanded into the vocational student organization mission with an order of importance equal to the current leadership development activities and public speaking experience.

The discriminant function of career guidance, even though not the highest order of importance is this study, was high enough to call for the increase in the number of career guidance specialist to

be added at all levels of the education ladder. With students having a more difficult time in finding enough hours in their high school schedules for vocational-technical education the need for quality career guidance at the middle school level is critical. Counselors must be trained not only to guide the college bound student, but also the school-to-work students that are in our public schools. More and better assessment tools need to be encouraged to assist these guidance specialists to do the most thorough and effective job of career guidance to each and every student prior to entering the ninth grade in every school in Oklahoma. Until these types of aggressive programs are developed and implemented, our students will continue to suffer the dire consequences of being misplaced into careers for which they were not intended. A more realistic approach to career guidance is a must for the success of all of the students.

Recommendations

The State of Oklahoma currently operates 28 area vocational-technical centers on 48 campuses serving approximately 95 percent of Oklahoma's population. New programs and course offerings are added to respond to the changing demographics and needs for the business and industry community in Oklahoma. This study has some implications for the continued success of the current programs and any future programs that are presently being considered to allow our students the opportunity to enjoy employment related to their chosen field of study.

First, it is recommended that occupational program advisory committees be more involved in the development of quality on-the-job

training experiences for students graduating from our training programs. Studies (Bishop and Wilms) have revealed the importance of this partnership between business and industry and training institutions. Current relationships with the Graphic Arts Education Council, Associated General Contractors, and the National Automotive Technicians Education Foundation should be strongly encouraged, if not made mandatory for all vocational-technical training programs.

Second, it is recommended that the vocational-technical education teacher become more involved in the on-the-job training and placement responsibilities of the students. The evaluation process of teachers should include these key components as an indicator of the quality a teacher is exhibiting in the overall performance of his/her job.

Third, it is recommended that the occupational competency profile composite rating be examined to see if a more discriminating format can be installed to allow teachers the ability to recognize the differences that exist between students overall abilities within each competency.

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APPENDIXES

APPENDIX A

LETTER OF GENERAL INSTRUCTIONS TO AVTS

September 6, 1991

Dr. Kay Rogers
Francis Tuttle AVTS
12777 N. Rockwell Av.
Oklahoma City, Ok 73142

Dear Kay:

I am in the midst of doing a research project dealing with the study of vocational training and our students ability to gain related employment. Enclosed you will find a letter of memorandum from Dr. Roy Peters Jr. stating that I have been asked by the Oklahoma Department of Vocational-Technical Education to assist in this study.

Also enclosed, you will find a list of former students from your school. I am requesting the following information on each student:

- {1} Copy of High School Transcript
- {2} Last Known Address
- {3} Standardized Test Score Results
- {4} Vocational Program competency Profile

Hopefully through my study, we will be able to understand what gives our students a better advantage when seeking employment related to their vocational training. Thank you for your assistance with this project.

Sincerely,


Greg Winters

APPENDIX B

SUBJECTS' SURVEY QUESTIONNAIRE

STUDENT SURVEY QUESTIONS

1. How many times did you visit your school counselor's office concerning career guidance during your high school ninth thru twelveth grades?

0 1 2 3 4 more than 4

2. How many months of on-the-job training did you perform during high school which related to your field of training?

0 1-2 3-4 5-6 more than 6

3. How many years were you a member of a vocational student organization while attending the area vo-tech school?

0 1 2 more than 2 years

4. Of the following, which provided you the most assistance in gaining employment following your vocational training program?

Vo-tech placement personnel Your program instructor
 Family member Other, please list _____

5. How would you describe your current employment status?

Employed related to vocational training Continuing your education
 Employed not related to vocational training Unemployed by choice
 Military Unemployed not by choice

In case of lost envelope, please mail to :

Mr. Greg Winters
 19303 Pear Tree Lane
 Harrah, OK 73045

APPENDIX C

**LETTER OF GENERAL INSTRUCTIONS TO SUBJECTS
REQUESTING INFORMATION**

Dear: Former Vocational-Technical Student

I am conducting a research project for the Oklahoma Department of Vocational-Technical Education in Stillwater, Oklahoma. The data requested in this packet is extremely important to the overall scope of the study being conducted.

If you would please, take the time to respond to the four questions as they best describe your experience as a high school vocational-technical student.

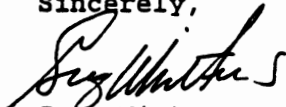
Please read each question carefully, mark the appropriate response and return the questionnaire in the addressed, stamped envelope that is provided.

Parents, if your son/daughter no longer lives at this address, please forward this document to them or if you know the answers to the questions please respond and return to me.

Your help and support in getting this information returned to me will hopefully give us direction in improving vocational-technical education in Oklahoma for future generations to come.

Thank you for your quick response.

Sincerely,



Greg Winters

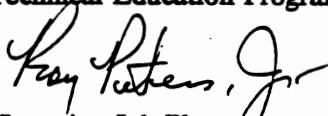
APPENDIX D

**LETTER FROM DR. ROY PETERS, JR., REQUESTING
ASSISTANCE FOR THIS STUDY**



September 3, 1991

MEMORANDUM

TO: Graduates of Vocational and Technical Education Programs
FROM: Roy Peters, Jr., State Director 
SUBJECT: Study to Determine Factors Influencing Job Placement

The Oklahoma Department of Vocational and Technical Education continually strives to determine the quality of the vocational and technical education delivery system. We have asked Mr. Greg Winters, Superintendent of Eastern Oklahoma County Area Vocational-Technical School, to help us with a study. Mr. Winters will be contacting you with some questions, which will assist in determining the factors which influenced your ability to gain employment in the field in which you are working.

We appreciate your cooperation and effort with this study.

1500 West Seventh Avenue
Stillwater, OK 74074-4364
(405) 377-2000

APPENDIX E

LETTER ACCOMPANYING THE SECOND MAIL OUT
OF THE SURVEY QUESTIONNAIRE

Dear: Former Vocational-Technical Student

I recently mailed you a questionnaire based on your experience as a former vocational-technical student in Oklahoma's Area Vocational-Technical School System.

Your response to this questionnaire is absolutely critical to the validity of this study. Please take the time to respond to the five short questions and mail the survey back in the enclosed envelope.

Parents, if your son or daughter no longer lives at this address, please forward this survey to them or if you know the answers to the questions please respond and return to me.

Your quick response could help to determine future directions for our training programs in Oklahoma.

Thank you for your quick response.

Sincerely,

A handwritten signature in cursive script that reads "Greg Winters".

Greg Winters

APPENDIX F

STUDENT INFORMATION COMPILATION SHEET

STUDENT INFORMATION SHEET

NAME:

ADDRESS:

PROGRAM:

HOME HIGH SCHOOL:

RURAL _____

URBAN _____

GRADE POINT AVERAGE:

_____ BELOW 1.5

_____ 1.5-2.0

_____ 2.1-2.5

_____ 2.6-3.0

_____ 3.1-3.5

_____ 3.6-4.0

MAT 6 STANDARDIZED TEST RESULTS:

_____ 0%-25% BOTTOM QUARTILE

_____ 26%-50% LOW MIDDLE QUARTILE

_____ 51%-75% UPPER MIDDLE QUARTILE

_____ 76%-99%+ UPPER QUARTILE

NUMBER OF MATH COURSES TAKEN BEYOND ALGEBRA I

0 _____

1 _____

2 _____

3 _____

4 _____

NUMBER OF SCIENCE COURSES TAKEN BEYOND BIOLOGY I

0 _____
1 _____
2 _____
3 _____
4 _____

COMPETENCY PROFILE COMPOSITE RANGE:

_____ 0-1.0
_____ 1.1-2.0
_____ 2.1-3.0
_____ 3.1-4.0

EMPLOYMENT STATUS:

_____ EMPLOYED RELATED TO TRAINING
_____ EMPLOYED NOT RELATED TO TRAINING
_____ CONTINUING EDUCATION
_____ MILITARY
_____ UNEMPLOYED
_____ UNKNOWN

NUMBER OF VISITS TO THE COUNSELORS OFFICE FOR CAREER GUIDANCE

_____ 0
_____ 1
_____ 2
_____ 3
_____ 4
_____ MORE THAN 4

HOW MANY MONTHS OF ON THE JOB TRAINING DID STUDENT PERFORM WHICH WAS RELATED TO THEIR AREA OF TRAINING?

- 0
- 1-2 MONTHS
- 3-4 MONTHS
- 5-6 MONTHS
- MORE THAN 6 MONTHS

HOW MANY YEARS WAS STUDENT A MEMBER OF A VOCATIONAL STUDENT ORGANIZATION?

- 0
- 1 YEARS
- 2 YEARS
- MORE THAN TWO YEARS

WERE YOU ASSISTED IN GAINING EMPLOYMENT BY ONE OF THE FOLLOWING?

- PLACEMENT COORDINATOR
- PROGRAM INSTRUCTOR
- OTHER

VITA

GREGORY ZANE WINTERS

Candidate for the Degree of

DOCTOR OF EDUCATION

Thesis: THOSE FACTORS OTHER THAN VOCATIONAL COMPETENCIES WHICH INFLUENCE SUCCESSFUL JOB-RELATED EMPLOYMENT UPON COMPLETION OF A TWO-YEAR VOCATIONAL-TECHNICAL TRAINING PROGRAM IN AREA VOCATIONAL-TECHNICAL CENTERS IN CENTRAL OKLAHOMA

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Mangum, Oklahoma, on May 28, 1953, the son of V. Zane and Frena M. Winters

Education: Graduated from Mangum High School, Mangum, Oklahoma in May, 1971; received Bachelor of Science degree in Education from Southwestern Oklahoma State University in December, 1974; received a Master of Education degree from University of Central Oklahoma in May, 1980; received Professional Certificate in School Administration from the University of Oklahoma in May, 1987; completed requirements for the Doctor of Education degree at Oklahoma State University in May, 1992.

Professional Experience: Technology Education Teacher, Kerr Junior High School, Del City, Oklahoma, December, 1974 to October, 1977; Midwest City High School, August, 1978 to May, 1980; Assistant Principal, Midwest City High School, 1980-1981; Assistant Principal, Choctaw High School, 1981-1984; Assistant Superintendent, Eastern Oklahoma County Area Vocational-Technical Center, July 1984 to May 1986; Superintendent, Eastern Oklahoma County Area Vocational-Technical Center, May, 1986 to present.