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THE RELATIONSHIP BETWEEN A PROGRAM OF CAREER EDUCATION
AND THE CAREER MATURITY OF EIGHTH-GRADE STUDENTS

DISSERTATION

Presented to the Graduate Council of the
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The purpose of this study was to determine the relationship between career education and the career maturity of eighth-grade students as measured by the Attitude Scale and the Competence Test of the Career Maturity Inventory. A posttest only experimental design was used for the study. The subjects were selected from a population of eighth-grade students in a suburban school district in north central Texas and randomly assigned to treatment and control groups. The treatment group had a career education class for forty-five minutes each day for eighteen weeks. The control group selected an additional elective.

Multiple t tests were used to test the hypotheses of the study. The hypotheses were grouped into the areas of maturity of career attitudes, maturity of career competencies, sex and career maturity, school and career maturity, and teacher and career maturity.

The findings for the total sample show that the treatment group mean was significantly higher than the control group mean on the Attitude Scale as well as the competencies of Goal Selection, Planning, and Problem Solving. The female students scored significantly higher than the male students

on all parts of the Competence Test but not on the Attitude Scale.

The low academic treatment group mean was significantly higher than the low academic control group mean on the Attitude Scale and the competencies of Self Appraisal, Goal Selection, and Problem Solving. The high academic students showed no significant differences between treatment and control groups.

Significant differences were found between groups assigned to different schools and different teachers. There were indications that the career education curriculum was implemented differently in each school.

One recommendation for future research was a follow up study. The patterns of maintenance of the gains achieved, as well as delayed effects of the treatment, should be determined by administering the same instruments to the same subjects each year until high school graduation.

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CHAPTER I

INTRODUCTION

Career education has been widely advocated for the past decade. At both the national and state levels, a challenge has been made to develop students' economic and occupational competencies. Many schools have made career awareness and orientation a major goal (Ginsburg, 1971).

Career education is considered a much broader term than vocational education. There are three facets of career education which serve to point up the ways in which it differs from vocational education (Goodman, 1971). First, career education should be a part of every student's school program. Second, it should not be restricted to any particular grade level but should be continuous from kindergarten until the student leaves school. Third, it should enable students to gain the skills needed to earn a living by the time they leave school.

The Advisory Council for Technical-Vocational Education in Texas has suggested a schedule, by grade levels, for career education (Jones, 1972). This schedule involves the following phases: The development of career awareness in grades K-6; the orientation toward and investigation of careers in grades 6-8; the exploration of careers in grades

8-10; and the formal or cooperative preparation during the remaining years of school. It is recognized that individuals vary greatly in the age or grade level at which they enter the various phases (Super et al., 1957).

The middle school years are of special importance in the process of career development. During this confusing and often frustrating period, students must begin to make choices concerning the directions their lives will take. It has been found (Magruder, 1970) that career choice is highly stable between the eighth and twelfth grade. Once students make a choice, they tend to maintain that choice.

Before the students' career choices have crystalized, they need to be exposed to a wide variety of careers, their requirements, and their rewards. They need to gain some competencies in relating their own abilities and interests to various careers. They need to have access to a wide variety of guidance services and to have an understanding of how these services can aid them in choosing a career (Super & Overstreet, 1960; Metheny, 1969). An effective career education program can assist them in these areas and aid them in making decisions concerning themselves and careers (Gambino, 1972).

Statement of the Problem

The problem of this study was to determine the relationship between a program of career education and the career maturity of eighth grade students.

Purpose of the Study

The purpose of the study was to determine the relationship between a program of career education and the career education and the career maturity of eighth grade students as measured by the Attitude Scale and the Competence Test of the Career Maturity Inventory. Two general areas were pursued in carrying out the purpose of this study. One was an investigation to determine whether a significant relationship existed between participation in the career education program and the maturity of career attitudes and competencies. The second area involved an investigation of whether a significant relationship existed between the students' sex, school, or teacher and the maturity of career attitudes and competencies. These two areas of investigation yielded five groups of hypotheses which are presented in the following section.

Hypotheses

Twenty-two hypotheses were formulated to carry out the purpose of the study. These hypotheses are grouped under the categories of maturity of career attitudes, maturity of career competencies, sex and career maturity, school and career maturity, and teacher and career maturity.

The Relationship Between Career Education and Career Attitudes

Hypothesis 1.--There will be no significant difference between the mean posttest score on the Attitude Scale of the

Career Maturity Inventory (CMI) for students in the treatment group (those who participated in career education) and the mean posttest score for students in the control group (those who did not participate in career education).

Hypothesis 2.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for female students in the treatment group and the mean posttest score for female students in the control group.

Hypothesis 3.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for male students in the treatment group and the mean posttest score for male students in the control group.

Hypothesis 4.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for high academic students in the treatment group and the mean posttest score for high academic students in the control group.

Hypothesis 5.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for average academic students in the treatment group and the mean posttest score for average academic students in the control group.

Hypothesis 6.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for low academic students in the treatment group and the

mean posttest score for low academic students in the control group.

The Relationship Between Career Education
and Career Competencies

Hypothesis 7.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for students in the treatment group and the mean posttest score for students in the control group.

Hypothesis 8.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for female students in the treatment group and the mean posttest score for female students in the control group.

Hypothesis 9.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for male students in the treatment group and the mean posttest score for male students in the control group.

Hypothesis 10.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for high academic students in the treatment group and the mean posttest score for high academic students in the control group.

Hypothesis 11.--There will be no significant difference on any of the five parts of the Competence Test of the CMI

between the mean posttest score for average academic students in the treatment group and the mean posttest score for average academic students in the control group.

Hypothesis 12.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for low academic students in the treatment group and the mean posttest score for low academic students in the control group.

The Relationship Between the Sex of the
Student and Career Maturity

Hypothesis 13.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for female students in the treatment group and the mean posttest score for male students in the treatment group.

Hypothesis 14.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for female students in the control group and the mean posttest score for male students in the control group.

Hypothesis 15.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for female students in the treatment group and the mean posttest score for male students in the treatment group.

Hypothesis 16.--There will be no significant difference on any of the five parts of the Competence Test of the CMI

between the mean posttest score for females in the control group and the mean posttest score for males in the control group.

The Relationship Between the School Attended
and Career Maturity

Hypothesis 17.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for students in the treatment group and the mean posttest score for students in the control group within any of the four schools.

Hypothesis 18.--There will be no significant difference between schools on the mean posttest score for the Attitude Scale of the CMI for students in the treatment group.

Hypothesis 19.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for students in the treatment group and the mean posttest score for students in the control group within any of the four schools.

Hypothesis 20.--There will be no significant difference between schools on any of the five parts of the Competence Test of the CMI for students in the treatment group.

The Relationship Between Career Education
Teacher and Career Maturity

Hypothesis 21.--There will be no significant difference between treatment group mean posttest scores on the Attitude Scale of the CMI between groups assigned to different teachers.

Hypothesis 22.--There will be no significant difference between treatment group mean posttest scores on the Competence Test of the CMI between groups assigned to different teachers.

Background

The guidance literature of the 1930s and 1940s indicates that vocational or career choices were viewed as non-developmental. At a particular point in time the students would take stock of their talents and abilities, compare them with the jobs that were available, and decide what they were going to do for a living (Crites, 1978). This concept is, however, declining and is being replaced by the emphasis on career education as a developmental process.

The current interest in career education dates from a speech by Sidney P. Marland, the United States Commissioner of Education, to the National Association of Secondary School Principals in 1971. In his address, Marland challenged his audience to change the orientation of all schools to career education. From Marland's point of view, the concept of career education required these characteristics: Career education should be included in every student's courses of study; Career education should continue from first grade through twelfth and/or college; Career education should ensure that every student leave school with the skills necessary to be economically self-sufficient (Marland, 1974).

Evidence continues to accumulate which indicates that most individuals change jobs several times during their lifetimes. It becomes essential, therefore, that each person be well equipped to make career choices. Public schools have begun to accept this responsibility in career education. Schools have accepted the idea that career choice should be based on a series of developmental decisions, not a single irrevocable decision (Texas Education Agency, 1972).

Many educators and educational agencies have attempted to describe career education. The Texas Education Agency, for example, has suggested that career education should be sequential for K-12 and multidisciplinary in nature. It should be meaningful to the student in the context of the local community. It should emphasize the importance of positive attitudes towards one's own work as well as that of others. It should provide an awareness of the demands of the labor market and knowledge of the concepts of the free enterprise system (TEA, 1972).

Super et al. (1957) reported that there are several areas of general agreement among educational theorists concerning career education. It is generally thought that the process of career choice is difficult to reverse once a commitment has been made. Career development is usually thought of as a long-term process. It is also felt that career development is a process of compromise between an individual's self-concept and reality.

Although the necessity for career education is widely recognized, there have been few attempts to develop a formal structure or organization for career education. These are decisions which are being made on the local level. The projects which have been funded by the Office of Education have been designed to test the concept of career education, not to dictate the details of local programs (U.S. Department of H.E.W., 1971).

Significance of the Study

Since there is no standard program for career education, it is important for individual school districts to engage in evaluation procedures. This study is an examination of the relationship between career education and the career maturity of eighth grade students in one school district. The findings will give the district a better understanding of the effectiveness of its career education program and ensure the future development of the program. The findings will also be available to other researchers. In this way, they can contribute to the general available knowledge concerning career education.

Definition of Terms

Career--A term used to denote the entire complex of the world of work. It includes skilled, professional, semi-skilled, paraprofessional, and technical work.

Career Education--A program of instruction designed to assist students in (a) understanding both work and their

attitudes toward it, (b) understanding the relationship between career opportunities and education, (c) making decisions concerning the type of career they will pursue, and (d) acquiring the skills necessary for earning a living.

Career Maturity--The raw score as measured by the Career Maturity Inventory.

High Academic Students--Those students who received all A's for the first semester of the 1980-1981 school year.

Average Academic Students--Those students who received all A's and B's for the first semester of the 1980-1981 school year.

Low Academic Students--Those students not included in the high academic or the average academic categories.

Summary

This chapter was a brief overview of career education. The history of career education, its current status, and the need for research in the area were discussed. Chapter II will be a review of the research related to career education. Chapter III will be a discussion of the research methodology used in the study. Chapter IV will be a presentation of the findings of the study. Chapter V will be a presentation of the conclusions supported by the findings of the study and recommendations for further research.

CHAPTER BIBLIOGRAPHY

- Crites, J. O. Theory and research handbook: Career maturity inventory. Monterey, California: McGraw-Hill, 1978.
- Gambino, T. W. Junior high: The exploratory years. American Vocational Journal, 1972, 47, 56-57.
- Ginsburg, E. Career guidance: Who needs it, who provides it, who can improve it. New York: McGraw-Hill, 1971.
- Goodman, L. V. Marland on career education. American Education, 1971, 9, 25-28.
- Jones, W. L. A redirected education system for Texas. ACTVE News, 1972, 3, 1-3.
- Magruder, A. W. A study of the stability of career choices, school plans, and interests of students during the secondary school years. Unpublished doctoral dissertation, St. Louis University, 1970.
- Marland, S. P. Career education. New York: McGraw-Hill, 1974.
- Marland, S. P. Career education now. Speech before the convention of the National Association of Secondary School Principals, Houston, Texas, January 23, 1971.
- Mathany, K. B. The role of the middle school in career development. American Vocational Journal, 1969, 44, 18-21.
- Super, D. E., & Overstreet, P. L. The vocational maturity of ninth grade boys. New York: Teachers College, Columbia University, 1960.
- Super, D. E. et al. Vocational development: A framework for research. New York: Teachers College, Columbia University, 1957.
- Texas Education Agency. A tentative framework for developing K-12 career education. Austin, Texas: Texas Education Agency, 1972.
- United States Department of Health, Education, and Welfare, Career Education. Washington, D.E.: United States Department of Health, Education, and Welfare, 1971

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Several areas were surveyed in this review of the literature. These included the background and current status of career education, the appropriate grade placement for career education, the types of instructional strategies in career education, the relationship between academic achievement and career education, and the relationship between career maturity and career education.

Background and Current Status

Crites (1969) discussed three historical trends in vocational psychology which are important to an understanding of current programs in career education.

The first, called the Matching Men and Jobs approach, began with the work of Parsons in 1909 and was greatly influenced by the work of Strong. This approach holds that in order to make an appropriate vocational choice, people should look at their talents and abilities and compare them with the requirements of available jobs. General and specialized tests were used extensively for this purpose during World War II.

The second approach is called the Psychodynamics of Vocational Behavior point of view. This approach draws heavily from the work of Freud. It proposes that an individual's drives and desires are the most important determinants in choosing a vocation.

The third, and currently most prevalent trend, is a synthesis of the previous two and is called the Vocational Development Theory. This approach, based largely on the work of Super, emphasizes the importance of changes in vocational behavior over a period of time. Decisions in career choice are seen as part of a developmental process.

The use of the term career education as a specific rather than a generalization is a recent development. It was given its major emphasis by Sidney Marland, then United States Commissioner of Education, in a speech before the National Association of Secondary School Principals in January of 1971. At that time he stated that all education should be career education.

Since that time the concept of career education has been endorsed by many groups and has encountered no organized opposition. Among the organizations which have acclaimed career education are the National Education Association, the American Vocational Association, the National Congress of Parent-Teacher Associations, the American Association of School Administrators, the American Association of Junior Colleges, and the United States Chamber of Commerce (Hoyt, K. B. et al., 1974).

In a speech before the National Conference for State Coordinators of Career Education in October of 1974, T. H. Bell was able to state that

For the first time in the history of career education, we have a congressional mandate for career education. By enacting Section 406, Title IV, Public Law 90-380, the Congress has made career education a law of the land. It is no longer simply a project of the Executive Branch.

Since 1969 George Gallup has conducted yearly polls which provide information concerning public opinion about school issues. These polls have consistently shown that the public has high expectations for schools in the area of career education (Gallup 1973, 1979, 1980). In 1973 Gallup reported that 90 percent of the national sample agreed that public schools should give more emphasis to programs that help students decide on their careers.

The 1979 poll included a description of the public's conception of the ideal school. One of the characteristics listed was "The ideal school should give much more attention to the selection of careers than is presently the case" (p. 44).

The 1980 Gallup Poll reported two items dealing with career education. In the first item nearly two-thirds of the national sample felt that public schools should add personnel to assist in easing the student transition from school to employment. The second item asked participants what they thought the top priorities should be for the

Federal Department of Education during the next few years. Two of the four priorities mentioned most frequently were training students for jobs and helping students choose careers.

A study of the attitudes of students, parents, educators, and business leaders toward career education was completed by Grant in 1979. The location for the study was a large suburban school district in Texas. The findings of the study indicated a strong desire on the part of all groups to implement a program of career education in the schools. Gibbs (1977) made an attempt to assess the status of career education in Michigan. The superintendents of 530 school districts were surveyed. Ninety-five percent of the superintendents responded. All of the respondents indicated a strong philosophical support for career education. Ninety percent of the school districts had some type of career education program in operation.

A state-wide assessment of career education was conducted in Texas (Texas Education Agency, 1979). This assessment included a survey of high school principals on the status of career education. Fifty-seven percent reported that their schools had written policies for implementing career education. Although, the Texas Education Agency has recommended that career education be infused into existing courses, 21 percent of the schools reported that they offered a specific course in career education.

The advocates of career education have never called for a single specific program to be instituted in all schools. The unique needs and characteristics of different states and local districts have been recognized. Consequently, state agencies and local school districts have been encouraged to pursue diverse methods and approaches in an effort to achieve the goals of career education (HEW, 1971; TEA, 1979).

Grade Placement

Several agencies and organizations have developed frameworks for career education using the concept of developmental experiences (CVTE, 1972; HEW, 1971; NAVE, 1968; TEA, 1972). These plans have certain common elements.

Through grade six, students should participate in a career orientation program which provides exposure to a variety of job clusters and develops positive attitudes towards work. During grades seven through nine, a program of career investigation and exploration should be provided for students. This program should involve work-related and decision-making activities to aid students in selecting an educational plan for grades ten through twelve. The remaining high school years should allow for continued career investigation as well as for career specialization. All high school graduates should be equipped with entry level job skills.

Most of these plans call for career education to be infused into existing courses rather than taught as a separate subject (HEW, 1971; TEA, 1979). McBain and Majure (1979) reached a different conclusion, however, in their evaluation of an eighth-grade career education program. They stated that, although infusion may be the best approach for some stages of career development, the career exploration stage is best served by a separate class where comprehensive and concentrated experiences can be provided.

Silliker (1979) compared the attitudes and goal selection competence of eighth, tenth, and twelfth graders who had completed a course in career education with those of students who had not participated in the career education program. He found that attitudes toward careers, as measured by the Career Maturity Inventory, in the experimental groups were significantly higher than those in the control groups. No significant differences in goal selection skills were found. The grade placement of the career education program achieved no significant differences in either area. It was concluded that there was no grade placement which was superior to others for a career education program.

Meehan (1977) determined that there were more career education programs at the middle school level than any other level. It was also reported that programs were more highly developed at this level.

Instructional Strategies

Attempts have also been made to determine the most effective instructional strategies for career education. A study (Shields, 1979) of the effects of two instructional strategies on the career maturity of eleventh and twelfth graders was reported. One group of students participated in a structured career program involving individual projects, field trips, guest speakers, and teacher-led group discussions related to careers. A second group of students received no formal instruction but participated in supervised internships working with business and professional people from the community. A third group received no career education program of any type and served as a control group. The Career Maturity Inventory was used as a pretest and posttest. No significant differences in the career maturity of the three groups were found.

Laskin (1980) investigated the effects of a decision making program on the career maturity of high school students. A program for facilitating decision making was taught two periods per week for eight weeks during the students' regularly scheduled English class. The results indicated that scores on the Attitude Scale of the Career Maturity Inventory were significantly higher for the treatment group.

Two approaches to the development of career maturity were tested by Montemurro (1979). Three groups of

out-of-school subjects aged eighteen to twenty-one were used. The program of the first group involved activities that were self concept oriented. The program of the second group dealt with providing vocational information. The third group was the control group and received no treatment. The self concept group achieved scores which were significantly higher than the control group on four of the five subtests of the Competence Test of the Career Maturity Inventory. The control group scores were higher than those of the information group.

Hunt (1979) interviewed classroom teachers to determine their perception of the implementation of career education. The most important finding of the study dealt with basic instructional strategy. The teachers believed that the "doing" career education model was more effective than the "talking about" career education model.

The attitudes that students have toward various types of career education activities have also been studied (Zum Brunnen, 1980). Students in grades five, eight, and eleven were involved in the study. Career education activities were categorized as cognitive activities, simulated activities, and experiential activities. The eighth graders were less positive toward all three types of activities, but they had a slight preference for cognitive activities. The eleventh graders showed an equal preference for cognitive activities. The eleventh graders showed an equal preference for all types of activities.

Academic Achievement

There have been attempts to show a relationship between career education activities and academic achievement. A study by Nembhard (1979) investigated the influence of an infusion of career education into a required tenth grade English course. No significant differences were found in the students' skill performance in English or in their attitudes toward English.

Callahan (1979) studied the effects of a career education program on career knowledge and academic achievement. Students in grades three, five, seven, and nine were included in the study. In addition to a career knowledge test, the Iowa Test of Basic Skills in Mathematics, Vocabulary, and Spelling was administered. The findings indicate significant differences in career knowledge scores for the experimental groups. There were no significant differences on any of the achievement tests.

Bryant (1975) investigated a program for fifth graders in selected schools in Texas. The program involved the training of teachers for the incorporation of career education activities into language arts and social studies. No attempt was made to infuse career education into arithmetic. The Comprehensive Test of Basic Skills was used in a pretest-posttest design. The experimental group scored significantly higher than the control group on the reading, language, study skills, and reference skills subtests. No differences were found on the arithmetic subtest.

In 1977 the United States Office of Education published Bhaerman's analysis of the research concerning career education and basic academic achievement. A total of thirty-eight studies, which took place from the early to the mid-1970s, were reviewed. These studies encompassed grade levels kindergarten through twelfth. They included all academic subjects, but mathematics and language arts were most frequently involved. Nineteen of the thirty-eight studies reported significant gains in academic skills for the career education groups. Sixteen of the studies indicated that career education neither helped nor hindered academic growth. Three of the studies reported negative results. The conclusion of the analysis was that generally career education has a positive influence on academic achievement and that when it does not have a positive effect it does not interfere with academic achievement.

Career Maturity

There appears to be a positive relationship between the concept of career education and career maturity (Crites, 1978a). Measures of career maturity have come to be accepted as indicators of the effectiveness of programs of career education (Westbrook, 1974). The studies which follow are examples of this relationship.

Kershner and Blair (1976) used both the Attitude Scale and the Competence Test of the Career Maturity Inventory in an evaluation of an experience based career

education program in Philadelphia. Students in grades ten, eleven, and twelve were included in the study. There were no significant gains for the twelfth graders who were in their second year of the program. The tenth and eleventh graders, who were in their first year of the program, showed significant gains on every subtest. They concluded that the career education program had a high degree of effectiveness.

A study of the effects of a career education program in Dallas was conducted by Magill (1979). The Attitude Scale and the Competence Test of the Career Maturity Inventory were used in a pretest/posttest design with seventh and eighth grade students. The students in the experimental groups scored significantly higher on the composite Career Maturity Inventory as well as on the attitude, self appraisal, and goal selection subtests. He concluded that the career education program was effective in increasing the career maturity of seventh- and eighth-grade students.

Omvig and Thomas (1977) also used the complete battery of the Career Maturity Inventory to determine whether participation in a career education program would affect the career maturity of sixth- and eighth-grade students in Kentucky. Sixth-grade career education students scored significantly higher on the Attitude Scale as well as the self appraisal, goal selection, and planning subtests.

The eighth-grade career education students scored significantly higher on the Attitude Scale as well as the goal selection and planning subtests. On every subtest the career education groups gained higher mean scores. Omvig and Thomas' conclusion was that the study "confirms that career education does affect career maturity levels" (p. 330).

Wampler (1979) studied the effect of career education on the career attitude maturity of thirteen-year olds. The subjects in the treatment group had experienced a career education program for three to five years. The Attitude Scale of the Career Maturity Inventory was administered. Since there were no significant differences between the treatment and the control group scores, it was concluded that the career education program had no effect on career maturity.

An evaluation of a career education program designed to increase the vocational maturity of inner city boys was reported by Alexander (1979). Both the Attitude Scale and the Competence Test of the Career Maturity Inventory were used. No significant differences were found on any of the subtests. Alexander concluded that the vocational maturity level of inner city eighth grade boys was not affected by the career education program.

Summary

Several areas have been surveyed in this review of the literature. These were the background and current status of career education, the appropriate grade placement for career education, the relationship between academic achievement and career education, the type of instructional strategies in career education, and the relationship between career maturity and career education.

The concept of career education has a broad base of support from both individuals and organizations. Career education programs have been established and are in operation in most school districts in the United States.

Career education programs have been developed for use at every level from kindergarten to twelfth grade. Some school districts have infused career education into their curriculum for K-12. Other districts have developed special career education units to be incorporated into various existing courses. Still other districts have developed separate career education courses for specific grade levels. The middle school years seem to be the most popular placement for such a course.

There have been many attempts to show positive correlations between career education and academic achievement. The results of these attempts have been mixed and inconclusive.

Many researchers have studied the effects of specific instructional strategies on career education. Those

programs which used an experiential approach seem to be best received by teachers and students. Also those programs which dealt extensively with the process of decision making and those which concentrated on the development of the students' self concepts experienced greater success. These activities seem to be so basic to the process of career education as to require their inclusion in any successful program.

There is a strong relationship between the goals of career education and the concept of career maturity. The Career Maturity Inventory has been accepted widely by school systems and researchers as an appropriate measure of the effectiveness of career education programs.

CHAPTER BIBLIOGRAPHY

- Alexander, R. The effects of career education curriculum on the vocational maturity of inner city adolescent boys. Unpublished doctoral dissertation, Southern Illinois University at Carbondale, 1979.
- Bell, T. H. The status of career education. Speech before the National Conference for State Coordinators of Career Education, Ohio State University, October 31, 1974.
- Bhaerman, R. D. Career education and basic academic achievement--A descriptive analysis of the research. Washington, D.C.: United States Office of Education, 1977.
- Bryant, R. S. An experimental study of the effect of a career education program on academic achievement and attitudes of fifth grade students. Unpublished doctoral dissertation, North Texas State University, 1975.
- Callahan, J. P. A factorial study of career education correlates in selected Montana schools. Unpublished doctoral dissertation, University of Montana, 1979.
- Center for Vocational and Technical Education. The comprehensive career education model: Progress report. Columbus, Ohio: The Center for Vocational and Technical Education, 1972.
- Crites, J. O. Theory and research handbook: Career maturity inventory. Monterey, California: McGraw-Hill, 1978.
- Crites, J. O. Vocational psychology: The study of vocational behavior and development. New York: McGraw-Hill, 1969.
- Gallup, G. H. Gallup poll of the public's attitudes toward the public schools. Kappan, 1980, 62, 33-46.
- Gallup, G. H. Gallup poll of the public's attitudes toward the public schools. Kappan, 1979, 61, 33-45.

- Gallup, G. H. Gallup poll of the public's attitudes toward the public schools. Kappan, 1973, 55, 38-42.
- Gibbs, F. P. The nature, status, and scope of career education programs in the school districts of the state of Michigan. Unpublished doctoral dissertation, University of Michigan, 1977.
- Grant, L. T. A comparative study of attitudes of students, parents, educators, and business leaders toward selected concepts of career education. Unpublished doctoral dissertation, University of Houston, 1979.
- Hoyt, K. B. et al. Career education: What it is and how to do it. Salt Lake City, Utah: Olympus Publishing Company, 1974.
- Hunt, M. A study of teachers' perceptions regarding implementation of career education in the classroom. Unpublished doctoral dissertation, University of Montana, 1979.
- Kershner, K. & Blair, M. Summative evaluation of the RBS career education program. Philadelphia, Pennsylvania: Research for Better Schools, 1975.
- Laskin, S. The effects of a decision making program on the career maturity of high school students. Unpublished doctoral dissertation, Lehigh University, 1979.
- Magill, C. L. The effects of an occupational investigation program upon the career maturity of students at a career academy within the magnet school concept. Unpublished doctoral dissertation, East Texas State University, 1979.
- Marland, S. P. Career education now. Speech before the Convention of the National Association of Secondary School Principals, Houston, Texas, January 23, 1971.
- McBain, S. L., & Majure, W. C. Project discovery. Red Oak, Iowa: Southwest Iowa Learning Resources Center, 1979.
- Meehan, M. L. Career exploration in middle/junior high schools. Man/Society/Technology, 1975, 34, 44-116.
- Montemurro, L. Two approaches to the development of career maturity in economically and educationally disadvantaged adolescents. Unpublished doctoral dissertation, University of Pittsburg, 1979.

- National Advisory Council on Vocational Education.
Vocational education: The bridge between man and his work. Washington, D.C.: United States Department of Health, Education, and Welfare, 1968.
- Numbhard, J. M. Influence of integrated career components on tenth grade students attitudes toward English. Unpublished doctoral dissertation, University of Maryland, 1979.
- Omwig, C. P., & Thomas, E. G. Relationship between career education, sex, and career maturity of sixth and eighth grade pupils. Journal of Vocational Behavior, 1977, 11, 322-331.
- Shields, H. C. The effects of selected career experiences on the career maturity of gifted students. Unpublished doctoral dissertation, Georgia State University, 1979.
- Silliker, S. The evaluation of secondary school career education strategies using the career maturity inventory. Unpublished doctoral dissertation, Boston College, 1979.
- Texas Education Agency. Career education: A statewide assessment in Texas. Austin, Texas: Texas Education Agency, 1979.
- United States Department of Health, Education, and Welfare. Career education. Washington, D.C.: United States Department of Health, Education, and Welfare, 1971.
- Wampler, E. The effect of career education on career attitude maturity of thirteen year olds. Unpublished doctoral dissertation, University of Indiana, 1979.
- Westbrook, B. W. Content analysis of six career development tests. Measurement and Evaluation in Guidance, 1974, 7, 172-180.
- Zum Brunnen, C. Relationships between perceptions of career education activities, self concept, and academic achievement of fifth, eighth, and eleventh graders. Unpublished doctoral dissertation, Ohio State University, 1979.

CHAPTER III

PROCEDURES

Introduction

This study was undertaken in an effort to examine the relationship between career education and the career maturity of eighth grade students. It was hoped that the findings of this study would give the school district involved a better understanding of the effectiveness of its career education program as well as contribute to the general pool of knowledge concerning career education. This chapter concerns the procedures involved in conducting the study. It includes discussion of the design of the study, the subjects of the study, the instrumentation of the study, and the methods used for gathering and analyzing the data.

Design of the Study

The posttest only control group design, described by Campbell and Stanley (1963), was used in this study. This design is a true experimental design since random assignment to treatment and control groups ensures equality of groups. This design offers control for several internal sources of potential invalidity including history, maturation, testing, instrumentation, regression, selection, mortality, and

interaction of these factors. It also controls for the interaction of the treatment and the testing procedure which is a possible external source of invalidity (Campbell and Stanley, 1963).

Subjects

The subjects of this study were selected from the population of eighth grade students in a suburban school district in North Texas. Four middle schools participated in the study. Approximately one-half of each school's eighth grade class formed the treatment group. The remainder of each school's eighth grade class served as the control group.

Treatment Group

The treatment group participated in an eighteen-week course in career education. The career education class met for approximately forty-five minutes each day. The course of instruction was designed to achieve the goals of the career education program as defined by the Curriculum Department of the Plano Independent School District (see Appendix).

The content of the career education program can be grouped into four major areas. These areas are self appraisal, occupational clusters, educational planning, and economic and societal factors.

Self Appraisal.--Students in career education are provided assistance in understanding themselves in relation to their interests, abilities, and limitations. They are helped to match their personal characteristics talents with various occupations. Students are encouraged to develop an understanding of their personal values concerning jobs.

Occupational Clusters.--Students are involved in the study of each of the fifteen job clusters developed by the United States Department of Education. They gain general information about the various careers within each cluster. The importance of jobs within each cluster is stressed.

Educational Planning.--Students are provided with assistance in recognizing their personal career goals and the educational opportunities available to them in regard to their goals. Students are able to thoroughly investigate the high school course offerings as well as the relationship between these courses and various careers. The development of decision making skills is stressed with all students.

Economic and Societal Factors.--Students receive instruction in all phases of the employment process. They develop the skills needed for locating a job, applying for a job, and holding a job. Students are also instructed in several areas of money management, including budgeting, savings accounts, checking accounts, and taxes.

Control Group

The control group continued the normal curriculum for the treatment period. The normal curriculum calls for all teachers to relate career education to their subject matter. The control group students took an additional elective course for the semester.

Instrumentation

Career Maturity Inventory

In order to meet the basic objectives of this study, the Career Maturity Inventory was used. This instrument was developed by John O. Crites through his work with the Vocational Development Project. This project was established in 1960 for the purpose of constructing and standardizing an objective measure of vocational development which could be economically administered to large samples (Crites, 1969).

The resulting instrument was called the Vocational Development Inventory. The title was changed to the Career Maturity Inventory in order to better indicate that it measures career behaviors that mature over time (Crites, 1978a).

Crites (1978b) recommends the Career Maturity Inventory for several uses. These include

1. Studying career development;
2. Screening for career immaturity;

3. Assessing guidance needs;
4. Evaluating career education;
5. Testing in career counseling.

Two dimensions of vocational maturity are assessed by the Career Maturity Inventory. These dimensions are career choice attitudes and career choice competencies (Super, 1974).

Attitude Scale

The Attitude Scale of the Career Maturity Inventory consists of fifty statements, in a true-false format, which are designed to measure tendencies in five different attitudinal clusters. The five clusters may be classified (Crites, 1978a) as involvement in the process of career choice, orientation toward work, and conception of the career choice process. The Attitude Scale can be administered in approximately twenty minutes. It yields a global score of maturity of career attitudes.

The Attitude Scale was first used in 1961. Since that time it has been standardized both longitudinally and cross sectionally and used in more than 500 studies (Crites, 1978a). It also has been found to discriminate between grade levels of career maturity and to be equally valid for males and females (Crites, 1978a; Omvig & Thomas, 1977). The reading level of the instrument is approximately sixth grade. It can be used with subjects who read below this level if administered orally. The range of use is from

subjects who read on a sixth-grade level to college seniors (Crites, 1978b).

The Attitude Scale can be used with minority groups and the disadvantaged to trace their growth in maturity (Crites, 1978b). Their scores at any particular point in time will, however, be less than those of students of more favorable backgrounds (Alexander, 1979; Crites, 1978b; Magill, 1979; Montemurro, 1979).

Crites (1978a) reports that both the internal consistency and the test-retest stability have been tested to determine the reliability of the Attitude Scale. He states that the internal consistency calculation, using Kuder-Richardson Formula 20, averaged .74 with a range of .65 to .84. Since the instrument measures related but not identical clusters of attitudes, the coefficient of internal consistency would not be expected to be extremely high.

The test-retest stability of the Attitude Scale should be low enough to allow for individual differences in the rate of maturation but high enough to establish measurement of the variable. The reported r of .71 over a one-year interval appears to be in this range.

Crites (1978a) also summarized the research which has been done on the content, criterion-related, and construct validity of the Attitude Scale. Its content validity derives from the fact that the attitudes it is designed to measure are taken from the theory of career development.

In addition the items used were taken from tapes and notes of counseling interviews.

Criterion related validity has been demonstrated by correlating it with other measures of similar variables. Significant correlations have been found between the Attitude Scale and the Occupational Aspiration Scale and the Readiness for Vocational Planning Scale.

The accumulated research on the Attitude Scale supports its construct validity. It appears to be related to variables it would be related to and not related to those items it should not be related to.

Competence Test

The Competence Test of the Career Maturity Inventory consists of five parts. Each is designed (Crites, 1978a) to measure specific competencies. Part 1: Knowing Yourself assesses self appraisal competencies. Part 2: Knowing About Jobs assesses occupational information competencies. Part 3: Choosing a Job assesses goal selection competencies. Part 4: Looking Ahead assesses planning competencies. Part 5: What Should They Do? assesses problem solving competencies.

Each subtest has twenty multiple choice items which require subjects to respond to hypothetical situations. Each item has five foils including "don't know." Each of the five parts of the Competence Test requires approximately

twenty minutes for administration. The score for each part is a measure of the career competencies being assessed by that part (Crites, 1978b).

The standardization of the Competence Test began in 1961 with the writing of the items. The first testing was done in 1965. It was first published in 1973. Since that time it has been administered to over 70,000 students (Crites, 1978a).

The Competence Test can be used with the same groups as the Attitude Scale. Because of the nature of the material, however, some of the vocabulary is above the sixth-grade reading level (Crites, 1978b).

Crites (1978a) reported that the reliability of the Competence Test has been established. Kuder-Richardson Formula 20 was used to determine internal consistency coefficients for each of the subtests. These coefficients range from .72 to .90. This indicates that each subtest is a relatively homogeneous set of items.

Crites (1978a) also summarized the work which has been done on the validation of the Competence Test. The content validity was based on the fact that the competencies it intended to measure are taken from the theory of career development and its items are taken from "real life" materials.

The established relationship of the parts of the Competence Test to grade levels supported its

criterion-related validity. This distinction between grade levels was necessary if it was to be used as a measure of career development. The construct validity was indicated by the findings of different studies which supported the Competence Test as a measure of the choice process dimension of career maturity both within and between points of time.

Procedures for Collecting Data

The Attitude Scale and the Competence Test of the Career Maturity Inventory were administered as a posttest only to both the treatment and control group. The tests were administered to all subjects during the last week of the fall semester of the school year 1980-1981. Answers were recorded on a separate answer sheet which was also the source of demographic information concerning the subjects. Demographic information concerning the teachers of the career education classes was also collected at this time.

Procedures for Analyzing Data

The answer sheets were hand scored using the scoring key provided by the test publishers. Computer services were then used to compile the data.

The data obtained from the posttest measures was treated statistically for significance of difference between means of equal samples using Fisher's t (Campbell & Stanley, 1963). The null hypotheses were rejected at the .05 level of significance..

Summary

This chapter has reviewed the procedures involved in conducting a study of the relationship between career education and career maturity in eighth grade students. It included a discussion of the design of the study, the instruments used in the study, and the methods used in collecting and analyzing the data.

CHAPTER BIBLIOGRAPHY

- Alexander, R. The effects of career education curriculum on the vocational maturity of inner city adolescent boys. Unpublished doctoral dissertation, Southern Illinois University at Carbondale, 1979.
- Campbell, D. T., & Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago: Rand-McNally and Company, 1963.
- Crites, J. O. Administration and use manual: Career maturity inventory. Monterey, California: McGraw-Hill, 1978. (a)
- Crites, J. O. Theory and research handbook: Career maturity inventory. Monterey, California: McGraw-Hill, 1978. (b)
- Crites, J. O. Vocational psychology: The study of vocational behavior and development. New York: McGraw-Hill, 1969.
- Magill, C. L. The effects of an occupation investigation program upon the career maturity of students at a career academy within the magnet school concept. Unpublished doctoral dissertation, East Texas State University, 1979.
- Montemurro, L. Two approaches to the development of career maturity in economically and educationally disadvantaged adolescents. Unpublished doctoral dissertation, University of Pittsburg, 1979.
- Omwig, C. P., & Thomas, E. G. Relationship between career education, sex, and career maturity of sixth and eighth grade pupils. Journal of Vocational Behavior, 1977, 11, 332-331.
- Super, D. E. Measuring vocational maturity for counseling and evaluation. Washington, D. C.: American Personnel and Guidance Association, 1974.

CHAPTER IV

PRESENTATION OF DATA

Introduction

The purpose of this study was to determine the relationship between a program of career education and the career maturity of eighth-grade students. Several hypotheses were formulated to carry out this purpose. The Crites' Career Maturity Inventory was used in a posttest only experimental design with randomly assigned treatment and control groups to test the hypotheses. This chapter is a presentation of the findings of the study as they relate to each of the hypotheses.

Findings

The Relationship Between Career Education and Career Attitudes

In order to determine whether a significant relationship existed between career education and maturity of career attitudes, six null hypotheses were tested. The information relating to each of these hypotheses is presented below and in Table 1.

Hypothesis 1.--There will be no significant difference between the mean posttest score on the Attitude Scale of the Career Maturity Inventory (CMI) for students in the

treatment group and the mean posttest score for students in the control group.

An examination of Table I reveals that the difference between the means of the treatment group and the control

TABLE I
COMPARISON OF TREATMENT AND CONTROL GROUP
MEANS FOR THE ATTITUDE SCALE

Group	Comparison	Number	Mean	Standard Deviation	t Value	Result
Total Sample	Treatment	637	33.16	4.24	6.71	p<.01
	Control	698	31.53	4.64		
Female Students	Treatment	310	33.31	4.20	4.56	p<.01
	Control	361	31.77	4.53		
Male Students	Treatment	327	33.01	4.28	4.96	p<.01
	Control	337	31.27	4.75		
High Academic Students	Treatment	48	34.04	4.34	0.63	N.S.
	Control	43	33.51	3.83		
Average Academic Students	Treatment	218	33.75	3.79	3.10	p<.01
	Control	227	32.56	4.31		
Low Academic Students	Treatment	371	32.70	4.42	5.92	p<.01
	Control	428	30.78	4.73		

group yields a t ratio of 6.71. This t ratio is sufficiently large to reject the null hypothesis at the .01 confidence level.

Hypothesis 2.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for female students in the treatment group and the posttest scores for female students in the control group.

Table I indicates that the difference between the means of the female treatment group and the female control group yields a t ratio of 4.56. This t ratio is sufficiently large to reject the null hypothesis at the .01 level of confidence.

Hypothesis 3.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for male students in the treatment group and the mean posttest score for male students in the control group.

The data in Table I shows that the difference between the means of the male treatment group and the male control group yields a t ratio of 4.96. This t ratio is sufficiently large to reject the null hypothesis at the .01 confidence level.

Hypothesis 4.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for high academic students in the treatment group and the mean posttest score for high academic students in the control group.

An examination of Table I discloses that the difference between the means of the high academic treatment group and the high academic control group yields a t ratio of .63. This t ratio is not sufficiently large to allow rejection of the null hypothesis.

Hypothesis 5.--There will be no significant difference between the means of the high academic treatment group and the high academic control group yields a t ratio of .63. This t ratio is not sufficiently large to allow rejection of the null hypothesis.

Table I presents the data used to test this hypothesis. The difference between the means of the average academic treatment group and the average academic control group yields a t ratio of 3.10. This t ratio is significant at the .01 confidence level. The null hypothesis is, therefore, rejected.

Hypothesis 6.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for low academic students in the treatment group and the mean posttest score for low academic students in the control group.

The data used to test this hypothesis is displayed in Table I. The difference between the means of the low academic treatment group and the low academic control group yields a t ratio of 5.92. This t ratio is significant at

the .01 confidence level. The null hypothesis is, therefore, rejected.

The Relationship Between Career Education
and Career Competencies

An investigation was conducted to determine whether a significant relationship existed between career education and maturity of career competencies. The competencies of self appraisal, occupational information, goal selection, planning, and problem solving were included. The information relating to the six null hypotheses for the study of this relationship is presented below and in Tables II, III, IV, V, VI, and VII.

Hypothesis 7.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for students in the treatment group and the mean posttest score for students in the control group.

The t ratios for the difference between the means of the treatment and control groups on each of the five subtests are given in Table II. The difference between the means of the two groups on the Self Appraisal subtest yields a t ratio of 1.07. The difference between the means of the two groups on the Occupational Information subtest yields a t ratio of 1.75. For these two subtests the t ratios are not statistically significant. The

TABLE II
COMPARISON OF TREATMENT AND CONTROL GROUP
MEANS FOR THE ATTITUDE SCALE

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment	637	12.49	3.75	1.07	N.S.
	Control	698	12.27	3.75		
Occupational Information	Treatment	637	14.36	3.23	1.75	N.S.
	Control	698	14.04	3.42		
Goal Selection	Treatment	637	12.60	3.16	3.42	p<.01
	Control	698	12.15	3.18		
Planning	Treatment	637	11.90	3.59	1.96	p<.05
	Control	698	11.51	3.66		
Problem Solving	Treatment	637	8.83	3.01	2.27	p<.05
	Control	698	8.52	3.05		

null hypothesis is not rejected for the Self Appraisal and Occupational Information subtests.

The null hypothesis is rejected, however, when the means of the treatment and control groups on the Goal Selection subtest are compared. The t ratio for the difference between these means is 3.42. The t ratio is significant at the .01 confidence level.

The t ratios for the difference between the means of the treatment and control groups on the Planning subtest and the Problem Solving subtest are 1.96 and 2.27 respectively.

Selection subtest yields a t ratio of 2.69. This t ratio is sufficiently large to reject the null hypothesis for the Goal Selection subtest at the .01 confidence level. The t ratios are not statistically significant for the other four subtests. The null hypothesis is not rejected for the Self Appraisal, Occupational Information, Planning, and Problem Solving subtests.

Hypothesis 9.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for male students in the treatment group and the mean posttest score for male students in the control group.

Table IV gives the t ratios for the difference between the means of the male treatment group and the male control group for each of the five subtests. Two of the t ratios are significant at the .05 confidence level. The null hypothesis is, therefore, rejected for the Planning subtest and the Problem Solving subtest. The null hypothesis is not rejected for the Self Appraisal, Occupational, and Goal Selection subtests.

Hypothesis 10.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for high academic students in the treatment group and the mean posttest score for high academic students in the control group.

These t ratios are sufficiently large to reject the null hypothesis at the .05 confidence level in each case.

Hypothesis 8.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for female students in the treatment group and the mean posttest score for female students in the control group.

The data used to test this hypothesis is contained in Table III. The difference between the means of the female treatment group and the female control group on the Goal

TABLE III
COMPARISON OF FEMALE TREATMENT AND CONTROL
GROUP MEANS FOR THE COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment	310	13.29	3.53	0.39	N.S.
	Control	361	13.19	3.45		
Occupational Information	Treatment	310	14.65	3.21	0.96	N.S.
	Control	361	14.42	2.95		
Goal Selection	Treatment	310	13.01	2.95	2.69	p<.01
	Control	361	12.40	2.90		
Planning	Treatment	310	12.20	3.29	0.88	N.S.
	Control	361	11.97	3.44		
Problem Solving	Treatment	310	9.34	2.88	0.62	N.S.
	Control	361	9.20	2.92		

TABLE IV
COMPARISON OF MALE TREATMENT AND CONTROL
GROUP MEANS FOR THE COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment	327	11.74	3.81	1.55	N.S.
	Control	337	11.28	3.81		
Occupational Information	Treatment	327	14.09	3.24	1.64	N.S.
	Control	337	13.64	3.83		
Goal Selection	Treatment	327	12.20	3.31	1.18	N.S.
	Control	337	11.89	3.45		
Planning	Treatment	327	11.61	3.83	2.02	p<.05
	Control	337	11.01	3.83		
Problem Solving	Treatment	327	8.35	3.05	2.38	p<.05
	Control	337	7.79	3.02		

Table V gives the t ratios for the difference between the means of the high academic treatment group and the high academic control group for each of the five subtests. The differences all favor the treatment group, but none of the differences are statistically significant. The null hypothesis is, therefore, not rejected for any of the five subtests.

Hypothesis 11.--There will be no significant difference on any of the five parts of the Competence Test of the CMI

TABLE V
COMPARISON OF HIGH ACADEMIC TREATMENT AND CONTROL
GROUP MEANS FOR THE COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment	48	14.93	2.26	0.00	N.S.
	Control	43	14.93	2.14		
Occupational Informational	Treatment	48	16.35	1.98	1.09	N.S.
	Control	43	15.81	2.64		
Goal Selection	Treatment	48	14.70	2.12	1.39	N.S.
	Control	43	14.02	2.51		
Planning	Treatment	48	14.45	2.39	1.72	N.S.
	Control	43	13.60	2.31		
Problem Solving	Treatment	48	10.81	2.63	1.87	N.S.
	Control	43	9.79	2.56		

between the mean posttest score for average academic students in the treatment group and the mean posttest score for average academic students in the control group.

The t ratios for the difference between the means of the average academic treatment group and the average academic control group for each of the five subtests are given in Table VI. The t ratios for the Occupational Information, Goal Selection, and Planning subtests are positive but not

TABLE VI
COMPARISON OF AVERAGE ACADEMIC TREATMENT AND
CONTROL GROUP MEANS FOR THE
COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment Control	218	13.54	3.35	-2.00	p<.05
		227	14.14	2.95		
Occupational Information	Treatment Control	218	15.31	2.65	0.04	N.S.
		227	15.30	2.60		
Goal Selection	Treatment Control	218	13.27	2.70	0.08	N.S.
		227	13.25	2.57		
Planning	Treatment Control	218	13.03	3.15	0.81	N.S.
		227	12.79	3.07		
Problem Solving	Treatment Control	218	9.38	2.82	-1.01	N.S.
		227	9.65	2.80		

large enough to lead to the rejection of the null hypothesis for these three subtests.

The t ratios for the Self Appraisal and Problem Solving subtests are negative. The t ratio of -2.00 leads to a rejection of the null hypothesis at the .05 confidence level for the Self Appraisal subtest. The null hypothesis is not rejected in regard to the Problem Solving subtest since its associated t ratio is not large enough.

Hypothesis 12.--There will be no significant differences on any of the five parts of the Competence Test of the CMI between the mean posttest score for low academic students in the treatment group and the mean posttest score for low academic students in the control group.

The t ratios for the difference between the means of the low academic control group on each of the five subtests are given in Table VII. All of the differences favor the treatment group. For the Occupational Information subtest and

TABLE VII

COMPARISON OF LOW ACADEMIC TREATMENT AND CONTROL GROUP MEANS FOR THE COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment	371	11.56	3.83	2.06	p<.05
	Control	428	11.01	3.70		
Occupational Information	Treatment	371	13.55	3.42	1.40	N.S.
	Control	428	13.20	3.61		
Goal Selection	Treatment	371	11.92	3.33	2.30	p<.05
	Control	428	11.38	3.30		
Planning	Treatment	371	10.90	3.60	1.11	N.S.
	Control	428	10.61	3.77		
Problem Solving	Treatment	371	8.25	3.00	2.16	p<.05
	Control	428	7.79	3.00		

the Planning subtest, the t ratios are not enough to allow rejection of the null hypothesis. The t ratios are statistically significant for the other three subtests. The null hypothesis is rejected at the .05 confidence level for the Self Appraisal subtest, the Goal Selection subtest, and the Problem Solving subtest.

The Relationship Between the Sex of the
Student and Career Maturity

An investigation was conducted to determine whether the sex of the students was a significant factor in the relationship between career education and the maturity of career attitudes or competencies. The information relating to the null hypotheses for this phase of the study is presented below and in Tables VIII, IX, and X.

Hypothesis 13.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for female students in the treatment group and the mean posttest score for male students in the treatment group.

Table VIII indicates that the differences between the means of the female treatment group and the male treatment group yields a t ratio of .92. This t ratio is not large enough to allow the rejection of the null hypothesis.

TABLE VIII
COMPARISON OF FEMALE AND MALE GROUP
MEANS FOR THE ATTITUDE SCALE

Group	Comparison	Number	Mean	Standard Deviation	t Value	Result
Treatment	Female	310	33.31	4.20	0.92	N.S.
	Male	327	33.01	4.28		
Control	Female	361	31.77	4.53	1.42	N.S.
	Male	337	31.37	4.75		

Hypothesis 14.--There will be no significant difference between the mean posttest score on the Attitude Scale of the CMI for female students in the control group and the mean posttest score for male students in the control group.

The data used to test this hypothesis is found in Table VIII. The difference between the means of the female control group and the male control group yields a t ratio of 1.42. This t ratio is not large enough to allow the rejection of the null hypothesis.

Hypothesis 15.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for female students in the treatment group and the mean posttest score for male students in the treatment group.

The t ratios for the difference between the means of the female treatment group and the male treatment group for each of the five subtests are given in Table IX. The mean score for the female treatment group is significantly higher than the mean score for the male treatment group for all five subtests. The null hypothesis is rejected at

TABLE IX
COMPARISON OF FEMALE AND MALE TREATMENT
GROUP MEANS FOR THE COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Female	310	13.29	3.53	5.33	p<.01
	Male	327	11.74	3.81		
Occupational Information	Female	310	14.65	3.21	2.19	p<.05
	Male	327	14.09	3.24		
Goal Selection	Female	310	13.01	2.95	3.26	p<.01
	Male	327	12.20	3.31		
Planning	Female	310	12.20	3.29	2.09	p<.05
	Male	327	11.61	3.83		
Problem Solving	Female	310	9.34	2.88	4.21	p<.01
	Male	327	8.35	3.05		

the .05 confidence level for the Occupational Information subtest and the Planning subtest. The null hypothesis is rejected at the .01 confidence level for the Self Appraisal

subtest, the Goal Selection subtest, and the Problem Solving subtest.

Hypothesis 16.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for females in the control group and the mean posttest score for males in the control group.

The t ratios for the difference between the means of the female control group and the male control group for each of the five subtests are given in Table X. The mean score

TABLE X
COMPARISON OF FEMALE AND MALE CONTROL GROUP
MEANS FOR THE COMPETENCE TEST

Subtest	Comparison	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Female	361	13.19	3.45	6.93	p<.01
	Male	337	11.28	3.61		
Occupational Information	Female	361	14.42	2.95	3.00	p<.01
	Male	337	13.64	3.83		
Goal Selection	Female	361	12.40	2.90	2.11	p<.05
	Male	337	11.89	3.45		
Planning	Female	361	11.97	3.44	3.48	p<.01
	Male	337	11.01	3.83		
Problem Solving	Female	361	9.20	2.92	6.26	p<.01
	Male	337	7.79	3.02		

for the female control group is significantly higher than the mean score for the male control group for all five subtests. The null hypothesis for the Goal Selection subtest is rejected at the .05 confidence level. The null hypothesis is rejected at the .01 confidence level for the Self Appraisal, Occupational Information, Planning, and Problem Solving subtests.

The Relationship Between School Attended and Career Maturity

This phase of the study was conducted to determine whether the school attended by the student was a factor in the relationship between career education and the maturity of career attitudes or competencies. The information relating to the four null hypotheses for this investigation is presented below and in Tables XI, XII, XIII, XIV, XV, XVI, and XVII.

Hypothesis 17.--There will be no significant difference the mean posttest score on the Attitude Scale of the CMI for students in the treatment group and the mean posttest score for students in the control group within any of the four schools.

Table XI is a summary of the data related to this hypothesis. It indicates that a comparison of the means for the treatment group and the control group in school number one yields a t ratio of 2.88. This t ratio is significant at the .05 level. The difference between the means of the two

TABLE XI
COMPARISONS BY SCHOOLS OF TREATMENT AND CONTROL
GROUP MEANS FOR THE ATTITUDE SCALE

School	Group	Number	Mean	Standard Deviation	t Value	Result
1	Treatment	125	32.95	4.63	2.88	p<.05
	Control	120	31.14	5.18		
2	Treatment	189	32.21	4.36	1.29	N.S.
	Control	200	31.63	4.54		
3	Treatment	145	33.66	4.03	4.36	p<.01
	Control	179	31.63	4.33		
4	Treatment	178	33.89	3.80	5.30	p<.01
	Control	199	31.57	4.69		

groups in school number two yields a t ratio of 1.29 which is not statistically significant. The difference between the means of the two groups in school number three yields a t ratio of 4.36 which is significant at the .01 confidence level. The difference between the means of the treatment and control groups in school number four yields a t ratio of 5.30. This t ratio is significant at the .01 confidence level. The null hypothesis is rejected for schools one, three, and four. The null hypothesis is not rejected for school number two.

Hypothesis 18.--There will be no significant difference between schools on the mean posttest score for the Attitude Scale of the CMI for students in the treatment group.

The t ratios for the difference between the means of the treatment groups in the four schools are given in Table XII. Two of the t ratios from Table XII are significant at the .01 confidence level. The mean for school three is significantly higher than the mean for school two. The mean for

TABLE XII
T VALUE FOR DIFFERENCES BETWEEN
SCHOOLS ON THE ATTITUDE SCALE

Source	t Value	Result
School 1 - School 2	1.42	N.S.
School 1 - School 3	1.33	N.S.
School 1 - School 4	1.87	N.S.
School 2 - School 3	3.14	p<.01
School 2 - School 4	3.94	p<.01
School 3 - School 4	0.50	N.S.

school four is significantly higher than the mean for school two. The null hypothesis is rejected for these two comparisons. The null hypothesis is not rejected for the other comparisons between schools.

Hypothesis 19.--There will be no significant difference on any of the five parts of the Competence Test of the CMI between the mean posttest score for students in the treatment

group and the mean posttest score for students in the control group within any of the four schools.

The test results for school number one are presented in Table XIII. The data shows that the mean score for the treatment group is higher than the mean score for the control

TABLE XIII
COMPARISONS FOR SCHOOL ONE OF TREATMENT
AND CONTROL GROUP MEANS FOR
THE COMPETENCE TEST

Subtest	Group	Number	Mean	Standard Deviation	t Value	Result
Self Appraisal	Treatment	125	10.96	4.33	0.07	N.S.
	Control	120	10.92	4.14		
Occupational Information	Treatment	125	13.58	3.47	1.09	N.S.
	Control	120	13.08	3.68		
Goal Selection	Treatment	125	11.94	3.57	1.15	N.S.
	Control	120	11.44	3.25		
Planning	Treatment	125	12.13	3.83	1.38	N.S.
	Control	120	11.48	3.55		
Problem Solving	Treatment	125	8.47	2.87	0.88	N.S.
	Control	120	8.13	3.17		

group on each subtest. None of the t ratios in Table XIII has statistical significance. The null hypothesis is not, therefore, rejected for any of the five parts of the Competence Test in school number one.

The data for school number two is presented in Table XIV. Again the mean score for the treatment group is higher than the mean score for the control group on each subtest. The t ratios for the difference between the means of the treatment group and the control group on the Self Appraisal,

TABLE XIV
COMPARISONS FOR SCHOOL TWO OF TREATMENT
AND CONTROL GROUP MEANS FOR
THE COMPETENCE TEST

Subtest	Group	Number	Mean	Standard Deviation	t Value	Results
Self Appraisal	Treatment	189	12.60	3.51	0.70	N.S.
	Control	200	12.34	3.79		
Occupational Information	Treatment	189	13.84	3.77	0.62	N.S.
	Control	200	13.60	3.85		
Goal Selection	Treatment	189	11.86	3.45	1.02	N.S.
	Control	200	11.50	3.51		
Planning	Treatment	189	11.40	3.58	2.30	p<.05
	Control	200	10.51	4.05		
Problem Solving	Treatment	189	8.65	3.10	1.45	N.S.
	Control	200	8.19	3.15		

Occupational Information, Goal Selection, and Problem Solving subtests are not statistically significant. The null hypothesis is not rejected for these four parts of the Competence

Test in school number two. The t ratio for the difference between the means of the treatment and control groups on the Planning subtest does have statistical significance. The null hypothesis for the Planning subtest in school number two is rejected at the .05 confidence level.

The information in Table XV is for school number three. The t ratios reveal no significant differences between the means of the treatment and control groups of any of the

TABLE XV
COMPARISONS FOR SCHOOL THREE OF TREATMENT
AND CONTROL GROUP MEANS FOR THE
COMPETENCE TEST

Subtest	Group	Number	Mean	Standard Deviation	t Value	Results
Self Appraisal	Treatment	145	13.01	3.72	1.26	N.S.
	Control	179	12.50	3.53		
Occupational Information	Treatment	145	14.64	2.77	-0.03	N.S.
	Control	179	14.65	2.99		
Goal Selection	Treatment	145	12.94	2.64	1.08	N.S.
	Control	179	12.60	3.00		
Planning	Treatment	145	11.78	3.35	0.27	N.S.
	Control	179	11.68	3.33		
Problem Solving	Treatment	145	8.76	3.01	0.88	N.S.
	Control	179	8.47	2.91		

subtests. The null hypothesis is not rejected for any of the five parts of the Competence Test in school number three. It should be noted that the mean score for the treatment group is higher than the mean score for the control group on four of the five subtests. The exception is the Occupational Information subtests where the mean score for the control group was .01 higher than the mean score for the treatment group.

The data for the fourth school is contained in Table XVI. The t ratios reveal significant differences between the mean

TABLE XVI
COMPARISONS FOR SCHOOL FOUR OF TREATMENT
AND CONTROL GROUP MEANS FOR THE
COMPETENCE TEST

Subtest	Group	Number	Mean	Deviation	Value	Results
Self Appraisal	Treatment	178	13.03	3.31	0.66	N.S.
	Control	199	12.80	3.47		
Occupational Information	Treatment	178	15.24	2.49	2.55	p<.05
	Control	199	14.52	2.98		
Goal Selection	Treatment	178	13.56	2.61	2.62	p<.05
	Control	199	12.84	2.73		
Planning	Treatment	178	12.35	3.56	-0.06	N.S.
	Control	199	12.37	3.36		
Problem Solving	Treatment	178	9.34	2.97	0.66	N.S.
	Control	199	9.14	2.92		

score for the treatment group and the mean score for the control group on two of the subtests. The null hypothesis is rejected at the .05 confidence level for the Occupational Information and the Goal Selection subtests. The treatment group means are also higher than the control group means on the Self Appraisal and the Problem Solving subtests. The control group mean was higher than the treatment group mean for the Planning subtests. The t ratios for these three subtests are not statistically significant. The null hypothesis is not rejected for the Self Appraisal, Planning, and Problem Solving subtest in school number four.

Hypothesis 20.--There will be no significant difference between schools on any of the five parts of the Competence Test of the CMI for students in the treatment group.

The t ratios for the difference between the means of the treatment groups of the four schools on the Self Appraisal subtest are given in Table XVII. Three of the t ratios for the Self Appraisal subtest are significant at the .01 confidence level. The means for the treatment groups in schools two, three, and four are significantly higher than the mean for the treatment group in school one. The null hypothesis for the Self Appraisal subtest is rejected for these three comparisons. The null hypothesis is not rejected for the other comparisons between schools on the Self Appraisal subtest.

The t ratios for the difference between the means of the treatment groups of the four schools on the Occupational Information subtest can also be found in Table XVII. The t ratio for the difference between the mean for school one and the mean for school two is not statistically significant. The null hypothesis is not rejected for this comparison. The mean for the treatment group in school three is significantly higher than the means for the treatment groups in schools one and two. The mean for the treatment group in school four is significantly higher than the means for the treatment groups in schools one, two, and three. For the comparisons between schools three and one, four and one, and four and two, the null hypothesis for the Occupational Information subtests is rejected at the .01 confidence level. For the comparisons between schools three and two and between schools four and three, the null hypothesis for the Occupational Information subtests is rejected at the .05 confidence level.

The t ratios for the difference between the means of the treatment groups of the four schools on the Goal Selection subtest are given in Table XVII. The t ratio for the difference between the means for school one and school two is not statistically significant. The null hypothesis is not rejected for this comparison. The mean for the treatment group in school three is significantly higher than the means for the treatment group in school three is significantly

TABLE XVII
 T VALUES FOR DIFFERENCES BETWEEN SCHOOLS
 ON THE COMPETENCE TEST

Subtest	Source	t Value	Result
Self Appraisal	School 1 - School 2	3.54	p<.01
	School 1 - School 3	4.14	p<.01
	School 1 - School 4	4.50	p<.01
	School 2 - School 3	1.02	N.S.
	School 2 - School 4	1.21	N.S.
	School 3 - School 4	0.05	N.S.
Goal Selection	School 1 - School 2	0.20	N.S.
	School 1 - School 3	2.58	p<.01
	School 1 - School 4	4.33	p<.01
	School 2 - School 3	5.34	p<.01
	School 2 - School 4	3.24	p<.01
	School 3 - School 4	2.11	p<.05
Occupational Information	School 1 - School 2	0.63	N.S.
	School 1 - School 3	2.74	p<.01
	School 1 - School 4	4.58	p<.01
	School 2 - School 3	2.24	p<.05
	School 2 - School 4	4.22	p<.01
	School 3 - School 4	2.03	p<.05
Planning	School 1 - School 2	1.70	N.S.
	School 1 - School 3	0.79	N.S.
	School 1 - School 4	0.51	N.S.
	School 2 - School 3	1.00	N.S.
	School 2 - School 4	2.55	p<.05
	School 3 - School 4	1.48	N.S.
Problem Solving	School 1 - School 2	0.53	N.S.
	School 1 - School 3	0.81	N.S.
	School 1 - School 4	2.56	p<.01
	School 2 - School 3	0.33	N.S.
	School 2 - School 4	2.18	p<.05
	School 3 - School 4	1.49	N.S.

higher than the means for the treatment groups in schools one and two. The mean for the treatment group in school four is significantly higher than the means for the treatment groups in schools one, two, and three. For the comparisons between schools three and one, three and two, four and one, and four and two, the null hypothesis for the Goal Selection subtest is rejected at the .01 confidence level. For the comparison between school four and school three, the null hypothesis for the Goal Selection subtest is rejected at the .05 confidence level.

The t ratios for the difference between the means of the treatment groups of the four schools on the Planning subtest are given in Table XVII. Only one statistically significant t ratio is found for the Planning subtest. The mean score for the treatment group in school four is significantly higher than the mean score for the treatment group in school two. For the comparison between school four and school two, the null hypothesis for the Planning subtest is rejected at the .05 confidence level. All other comparisons between schools on the Planning subtest yield t ratios which are not sufficiently large to allow rejection of the null hypothesis.

The t ratios for the difference between the means on the Problem Solving subtest for the treatment groups of each school are also given in Table XVII. Two statistically significant t ratios are found for the Problem Solving subtest. The mean score for the treatment group in school

four is significantly higher than the mean scores for the treatment groups in school one and school two. For the comparisons between school four and school one, the null hypothesis for the Problem Solving subtest is rejected at the .01 confidence level. For the comparison between school four and school two, the null hypothesis for the Problem Solving subtest is rejected at the .05 confidence level. All other comparisons between schools on the Problem Solving subtest yield t ratios which are not large enough to allow rejection of the null hypothesis.

The Relationship Between Career Education
Teacher and Career Maturity

This phase of the study was conducted to determine whether the career education teacher to whom a student was assigned was a factor in the relationship between career education and the maturity of career attitudes or competencies. The information relating to the two null hypotheses for this investigation is presented below and in Tables XVIII, XIX, XX, XXI, XXII, XXIII, XXIV, and XXV.

Hypothesis 21.--There will be no significant difference between treatment group mean posttest scores on the Attitude Scale of the CMI between groups assigned to different teachers.

Table XVIII presents the data concerning the mean posttest scores for the groups of students assigned to each of the seven career education teachers. The information in

TABLE XVIII
TREATMENT GROUP TEST DATA BY TEACHER
FOR THE ATTITUDE SCALE

Teacher	Number	Mean	Standard Deviation
A	125	32.95	4.63
B	101	32.28	4.61
C	88	32.13	4.08
D	97	33.92	3.59
E	81	33.86	4.05
F	83	33.87	4.15
G	62	33.38	3.87

Table XVIII was used to calculate the t ratios for the difference between the means of each group. The t ratios are given in Table XIX. The mean for teacher D's group is significantly higher than the means for the groups assigned to teacher B and teacher C. The null hypothesis is rejected for these two comparisons at the .01 confidence level. The mean for teacher E's group is significantly higher than the means for the groups assigned to teacher B and C. For the comparison between the groups assigned to teacher E and teacher B, the null hypothesis is rejected at the .05 confidence level. For the comparison between the groups assigned to teacher E and teacher C, the null hypothesis is rejected at the .01 level of confidence. The mean for teacher F's group is significantly higher than the means for the groups assigned to teacher B and Teacher C. For the comparison between the groups assigned to teacher F and

teacher B, the null hypothesis is rejected at the .05 confidence level. For the comparison between the groups assigned to teacher F and teacher C, the null hypothesis is rejected at the .01 level of confidence. For all other comparisons between teachers for the Attitude Scale, the null hypothesis is not rejected.

TABLE XIX
T VALUES FOR DIFFERENCES BETWEEN GROUPS TAUGHT
BY DIFFERENT TEACHERS ON THE
ATTITUDE SCALE

Source	t Value	Result
Teacher A - Teacher B	1.08	N.S.
Teacher A - Teacher C	1.37	N.S.
Teacher A - Teacher D	1.76	N.S.
Teacher A - Teacher E	1.49	N.S.
Teacher A - Teacher F	1.49	N.S.
Teacher A - Teacher G	0.67	N.S.
Teacher B - Teacher C	0.24	N.S.
Teacher B - Teacher D	2.80	p<.01
Teacher B - Teacher E	2.46	p<.05
Teacher B - Teacher F	2.46	p<.05
Teacher B - Teacher G	1.64	N.S.
Teacher C - Teacher D	3.15	p<.01
Teacher C - Teacher E	2.76	p<.01
Teacher C - Teacher F	2.76	p<.01
Teacher C - Teacher G	1.90	N.S.
Teacher D - Teacher E	0.10	N.S.
Teacher D - Teacher F	0.09	N.S.
Teacher D - Teacher G	0.88	N.S.
Teacher E - Teacher F	0.02	N.S.
Teacher E - Teacher G	0.72	N.S.
Teacher F - Teacher G	0.67	N.S.

teacher B, the null hypothesis is rejected at the .05 confidence level. For the comparison between the groups assigned

to teacher F and teacher C, the null hypothesis is rejected at the .01 level of confidence. For all other comparisons between teachers for the Attitude Scale, the null hypothesis is not rejected.

Hypothesis 22.--There will be no significant difference between treatment group mean posttest scores on the Competence Test of the CMI between groups assigned to difference teachers.

Table XX presents the data concerning the mean posttest scores on each of the five subtests for the groups of students assigned to each of the seven career education teachers. The information in Table XX is used in the calculation of the t ratios for the difference between the means of each group.

TABLE XX
TREATMENT GROUP TEST DATA BY TEACHER
FOR THE COMPETENCE TEST

Subtest	Teacher	Number	Mean	Standard Deviation
Self Appraisal	A	125	10.96	4.33
	B	101	12.70	3.60
	C	88	12.50	3.43
	D	97	13.13	2.96
	E	81	12.91	3.71
	F	83	13.09	3.38
	G	62	12.90	4.16

TABLE XX--Continued

Subtest	Teacher	Number	Mean	Standard Deviation
Occupational Information	A	125	13.58	3.47
	B	101	14.26	3.93
	C	88	13.35	3.54
	D	97	14.97	2.60
	E	81	15.55	2.33
	F	83	14.66	2.85
	G	62	14.62	2.69
Goal Selection	A	125	11.94	3.57
	B	101	12.02	3.45
	C	88	11.67	3.46
	D	97	13.42	2.67
	E	81	13.74	2.54
	F	83	12.89	2.64
	G	62	13.01	2.67
Planning	A	125	12.13	3.83
	B	101	11.42	3.72
	C	88	11.38	3.42
	D	97	12.42	3.33
	E	81	12.28	3.84
	F	83	12.00	3.09
	G	62	11.50	3.66
Problem Solving	A	125	8.47	2.87
	B	101	8.97	3.21
	C	88	8.28	2.93
	D	97	9.16	3.02
	E	81	9.55	2.90
	F	83	8.78	2.85
	G	62	8.74	3.24

The t ratios for the difference between the means on the Self Appraisal subtest for the treatment groups of each teacher are given in Table XXI. The means for the groups assigned to teachers B, C, D, E, F, and G are significantly

higher than the mean for the group assigned to Teacher A.

The null hypothesis is rejected for each of these comparisons

TABLE XXI
T VALUES FOR DIFFERENCES BETWEEN GROUPS
TAUGHT BY DIFFERENT TEACHERS ON
THE SELF APPRAISAL SUBTEST

Source	t Value	Results
Teacher A - Teacher B	3.30	p<.01
Teacher A - Teacher C	2.89	p<.01
Teacher A - Teacher D	4.43	p<.01
Teacher A - Teacher E	3.45	p<.01
Teacher A - Teacher F	3.97	p<.01
Teacher A - Teacher G	2.96	p<.01
Teacher B - Teacher C	0.39	N.S.
Teacher B - Teacher D	0.92	N.S.
Teacher B - Teacher E	0.38	N.S.
Teacher B - Teacher F	0.76	N.S.
Teacher B - Teacher G	0.31	N.S.
Teacher C - Teacher D	1.33	N.S.
Teacher C - Teacher E	0.74	N.S.
Teacher C - Teacher F	1.13	N.S.
Teacher C - Teacher G	0.62	N.S.
Teacher D - Teacher E	0.43	N.S.
Teacher D - Teacher F	0.08	N.S.
Teacher D - Teacher G	0.38	N.S.
Teacher E - Teacher F	0.32	N.S.
Teacher E - Teacher G	0.01	N.S.
Teacher F - Teacher G	0.29	N.S.

at the .01 level of significance. All other comparisons between teachers on the Self Appraisal subtest yield t ratios which are not sufficiently large enough to reject the null hypothesis.

The t ratios for the difference between the means on the Occupational Information subtest for the treatment groups

of each teacher are given in Table XXII. Teacher D's group mean is significantly higher than the group means for teacher A and teacher C. The null hypothesis is rejected for these two comparisons at the .01 level of confidence. The mean for teacher E's group is significantly higher than those of teachers A, B, C, F, and G. For the comparisons

TABLE XXII

T VALUES FOR DIFFERENCES BETWEEN GROUPS TAUGHT
BY DIFFERENT TEACHERS ON THE OCCUPATIONAL
INFORMATION SUBTEST

Source	t Value	Results
Teacher A - Teacher B	1.36	N.S.
Teacher A - Teacher C	0.47	N.S.
Teacher A - Teacher D	3.41	p<.01
Teacher A - Teacher E	4.87	p<.01
Teacher A - Teacher F	2.45	p<.05
Teacher A - Teacher G	2.45	p<.05
Teacher B - Teacher C	1.67	N.S.
Teacher B - Teacher D	1.50	N.S.
Teacher B - Teacher E	2.75	p<.01
Teacher B - Teacher F	0.80	N.S.
Teacher B - Teacher G	0.69	N.S.
Teacher C - Teacher D	3.52	p<.01
Teacher C - Teacher E	4.81	p<.01
Teacher C - Teacher F	2.67	p<.01
Teacher C - Teacher G	2.49	p<.05
Teacher D - Teacher E	1.57	N.S.
Teacher D - Teacher F	0.76	N.S.
Teacher D - Teacher G	0.81	N.S.
Teacher E - Teacher F	2.19	p<.05
Teacher E - Teacher G	2.17	p<.05
Teacher F - Teacher G	0.09	N.S.

between teachers E and A, E and B, and E and C, the null hypothesis is rejected at the .01 confidence level. For the

comparisons between teachers E and F and between teachers E and G, the null hypothesis is rejected at the .05 level of confidence. The mean score for teacher F's group is significantly higher than the group means for teacher A and teacher C. For the comparison between teachers F and A, the null hypothesis is rejected at the .05 confidence level. For the comparison between teachers F and C, the null hypothesis is rejected at the .01 confidence level. Teacher G's group mean is significantly higher than those of teachers A and C. The null hypothesis is rejected at the .05 confidence level for these two comparisons. In all other comparisons between teachers on the Occupational Information subtest, the null hypothesis is not rejected.

Table XXIII contains the t ratios for the difference between the means on the Goal Selection subtest for the treatment groups of each teacher. The mean for teacher D's group is significantly higher than the group means for teachers A, B, and C. For these three comparisons the null hypothesis is rejected at the .01 confidence level. The group mean for teacher E is significantly higher than the group means for teachers A, B, C, and F. For the comparisons between teachers E and A, E and B, and E and C, the null hypothesis is rejected at the .01 confidence level. For the comparison between teacher E and teacher F, the null hypothesis is rejected at the .05 confidence level. The group mean for teacher F is significantly higher than the group means

for teacher A and teacher C. For the comparison between teacher F and teacher A, the null hypothesis is rejected at the .05 confidence level. For the comparison between teacher F and teacher C, the null hypothesis is rejected at the .01 confidence level. The mean for teacher G's group is significantly higher than the means for the groups assigned to teachers A, B, and C. A rejection of the null hypothesis at

TABLE XXIII

T VALUES FOR DIFFERENCES BETWEEN GROUPS TAUGHT
BY DIFFERENT TEACHERS ON THE
GOAL SELECTION SUBTEST

Source	t Value	Results
Teacher A - Teacher B	0.17	N.S.
Teacher A - Teacher C	0.55	N.S.
Teacher A - Teacher D	3.53	p<.01
Teacher A - Teacher E	4.22	p<.01
Teacher A - Teacher F	2.20	p<.05
Teacher A - Teacher G	2.30	p<.05
Teacher B - Teacher C	0.69	N.S.
Teacher B - Teacher D	3.20	p<.01
Teacher B - Teacher E	3.87	p<.01
Teacher B - Teacher F	1.94	N.S.
Teacher B - Teacher G	2.05	p<.05
Teacher C - Teacher D	3.82	p<.01
Teacher C - Teacher E	4.45	p<.01
Teacher C - Teacher F	2.60	p<.01
Teacher C - Teacher G	2.67	p<.01
Teacher D - Teacher E	0.82	N.S.
Teacher D - Teacher F	1.34	N.S.
Teacher D - Teacher G	0.94	N.S.
Teacher E - Teacher F	2.10	p<.05
Teacher E - Teacher G	1.65	N.S.
Teacher F - Teacher G	0.27	N.S.

the .05 level of confidence occurs when teacher G's group is compared with teacher A's group and when teacher G's

group is compared to teacher B's group. A comparison of the mean for teacher G with that of teacher C leads to a rejection of the null hypothesis at the .01 confidence level. For all other comparisons between teachers for the Goal Selection subtest, the null hypothesis is not rejected.

The t ratios for the difference between the means on the Planning subtest for the treatment groups of each teacher are given in Table XXIV. The mean for teacher D's group is

TABLE XXIV

T VALUES FOR DIFFERENCES BETWEEN GROUPS TAUGHT
BY DIFFERENT TEACHERS ON THE
PLANNING SUBTEST

Source	t Value	Results
Teacher A - Teacher B	1.41	N.S.
Teacher A - Teacher C	1.50	N.S.
Teacher A - Teacher D	0.60	N.S.
Teacher A - Teacher E	0.27	N.S.
Teacher A - Teacher F	0.27	N.S.
Teacher A - Teacher G	1.09	N.S.
Teacher B - Teacher C	0.08	N.S.
Teacher B - Teacher D	1.99	p<.05
Teacher B - Teacher E	1.52	N.S.
Teacher B - Teacher F	1.16	N.S.
Teacher B - Teacher G	0.13	N.S.
Teacher C - Teacher D	2.09	p<.05
Teacher C - Teacher E	0.56	N.S.
Teacher C - Teacher F	1.25	N.S.
Teacher C - Teacher G	0.20	N.S.
Teacher D - Teacher E	0.26	N.S.
Teacher D - Teacher F	0.89	N.S.
Teacher D - Teacher G	1.60	N.S.
Teacher E - Teacher F	0.52	N.S.
Teacher E - Teacher G	1.24	N.S.
Teacher F - Teacher G	0.87	N.S.

significantly higher than the mean for teacher B's group and the mean for teacher C's group. For these two comparisons the null hypothesis is rejected at the .05 confidence level. For all other comparisons between teachers on the Planning subtest, the null hypothesis is not rejected.

The t ratios for the difference between the means on the Problem Solving subtest for the treatment groups of each teacher are given in Table XXV. The mean for teacher D's

TABLE XXV

T VALUES FOR DIFFERENCES BETWEEN GROUPS TAUGHT BY DIFFERENT TEACHERS ON THE PROBLEM SOLVING SUBTEST

Source	t Value	Results
Teacher A - Teacher B	1.22	N.S.
Teacher A - Teacher C	0.47	N.S.
Teacher A - Teacher D	1.73	N.S.
Teacher A - Teacher E	2.62	p < .01
Teacher A - Teacher F	0.77	N.S.
Teacher A - Teacher G	0.56	N.S.
Teacher B - Teacher C	1.54	N.S.
Teacher B - Teacher D	0.43	N.S.
Teacher B - Teacher E	1.72	N.S.
Teacher B - Teacher F	0.42	N.S.
Teacher B - Teacher G	0.44	N.S.
Teacher C - Teacher D	2.02	p < .05
Teacher C - Teacher E	2.83	p < .01
Teacher C - Teacher F	1.13	N.S.
Teacher C - Teacher G	0.89	N.S.
Teacher D - Teacher E	0.88	N.S.
Teacher D - Teacher F	0.87	N.S.
Teacher D - Teacher G	0.82	N.S.
Teacher E - Teacher F	1.71	N.S.
Teacher E - Teacher G	1.55	N.S.
Teacher F - Teacher G	0.08	N.S.

group is significantly higher than the mean for teacher C's group. The null hypothesis for this comparison is rejected at the .05 confidence level. The mean for teacher E's group is significantly higher than the means for teacher A's group and teacher C's group. The null hypothesis for these two comparisons is rejected at the .01 confidence level. For all other comparisons between teachers on the Problem Solving subtest, the null hypothesis is not rejected.

Demographic Data for Teachers

Complete demographic data were collected from all career education teachers involved in the study. Each teacher was asked to complete and return an information sheet. All teachers responded. The information collected has been categorized and is presented in this section.

School

Teacher A taught in school number one. Teachers B and C taught in school number two. Teachers D and E taught in school number four. Teachers F and G taught in school number three.

Age

The age of the teachers ranged from twenty-five to thirty-seven. Teachers A and G were between twenty-five and thirty years of age. Teachers B, E, and F were between thirty and thirty-five years of age. Teachers C and D were between thirty-five and forty years of age.

Sex

Four female teachers and three male teachers were involved in the study. Teachers A, C, C, and F were female. Teachers B, E, and G were male.

Education

The highest college degree earned was the Bachelor's for teachers A, D, and G. Teachers B, C, E, and F had earned Masters' degrees.

Certification

The teachers were certified in a variety of teaching fields. Teacher F was the only teacher involved in the study who was certified in career education. Teacher F was also certified to teach physical education and health as was teacher E. Teachers D and E were certified to teach social studies. Teachers D and G were certified to teach speech. Teacher G was also certified to teach science. Teacher A had English and reading certification. Teacher B had music and counseling certification. Teacher C was certified in several areas of special education.

Teaching Experience

Five of the seven teachers were teaching career education for the first time. It was teacher A's second year and teacher F's fourth year to teach career education. Only teacher G had no teaching experience prior to teaching career education. Teacher A had taught reading. Teacher B

had taught music. Teacher C had taught special education. Teacher D had taught speech and kindergarten. Teachers E and F had taught physical education and health. Teacher E had also taught social studies.

Other Work Experience

The career education teachers had a wide range of work experiences other than teaching. Teachers A, C, D, F, and G had worked in retail sales. Teachers C and D had worked in personnel as well as secretarial jobs. Teachers C and F had worked as waitresses. Teacher B had worked as a professional musician. Teacher E has worked for a boy's club, a moving company, and a service station. He had also done custodial work. Teacher G had worked as a broadcaster.

Summary

This chapter has presented the findings of a study to determine the relationship between a program of career education and the career maturity of eighth-grade students.

The following chapter will present the conclusions which can be drawn from the study. Recommendations for future study will also be made.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

This chapter begins with a summary of the purpose of the study and the methods used in the study. The summary is followed by a review of the findings of the study. The third section consists of a discussion of the results of the study in relationship to other research and the problems and limitations encountered during the study. The final section is a presentation of recommendations to future researchers.

Summary

The purpose of this study was to determine the relationship between a program of career education and the career maturity of eighth-grade students as measured by the Attitude Scale and the Competence Test of the Career Maturity Inventory. A posttest only experimental design was used for the study. Subjects of the study were selected from a population of eighth-grade students in a suburban school district in north central Texas. Four of the district's middle schools participated in the study.

Review of Findings

The twenty-two hypotheses tested during the study were organized into five areas of investigation. These areas

were maturity of career attitudes, maturity of career competencies, sex and career maturity, school and career maturity, and teacher and career maturity.

The Relationship Between Career Education and Career Attitudes

A generally positive relationship was found between career education and the maturity of career attitudes. The treatment group mean for the Attitude Scale was significantly higher than the control group mean for the total sample, female students, male students, average academic students, and low academic students. Among high academic students the treatment group mean was higher than the control group mean, but the difference was not statistically significant.

The Relationship Between Career Education and Career Competencies

Although some exceptions were discovered, a generally positive relationship was found between career education and maturity of career competencies. For the total sample the treatment group scored significantly higher than the control group on Goal Selection, Planning, and Problem Solving. The female treatment group was significantly higher only for Goal Selection. The male treatment group was significantly higher than the male control group on Planning and Problem Solving. None of the differences for the high academic students were statistically significant. For the average academic students, the control group was

significantly higher than the treatment group for Self Appraisal. For the low academic students, the treatment group was significantly higher than the control group on Self Appraisal, Goal Selection, and Problem Solving.

The Relationship Between the Sex of the Student and Career Maturity

The sex of the students does not appear to be a significant factor in the relationship between career education and the maturity of career attitudes. Within both the treatment group and the control group, females scored higher than males, but the difference was not statistically significant in either case.

It appears that the sex of the students was a significant factor in the relationship between career education and the maturity of career competencies in Self Appraisal, Occupational Information, Goal Selection, Planning, and Problem Solving. The females in the treatment group scored significantly higher than the males in the treatment group on all five of these subtests. Within the control group, the females also scored significantly higher than the males on all five subtests.

The Relationship Between School Attended and Career Maturity

The relationship between career education and the maturity of career attitudes and competencies varied for the schools involved in the study. Within school one, students

in the treatment group scored significantly higher than students in the control group on the Attitude Scale. The difference between the treatment and control groups within school two was significant for the Planning subtest. The difference between the treatment and control groups within school three was significant for the Attitude Scale. Within school four, students in the treatment group scored significantly higher than students in the control group on the Attitude Scale as well as on the Occupational Information and Goal Selection subtests.

When comparisons were made for treatment group scores between schools, several significant differences were found. School two was significantly higher than school one on Self Appraisal. School three was significantly higher than school one on Self Appraisal, Goal Selection, and Occupational Information. School three was also significantly higher than school two on the Attitude Scale, Goal Selection, and Occupational Information. School four was significantly higher than school one on Self Appraisal, Goal Selection, Occupational Information, and Problem Solving; significantly higher than school two on the Attitude Scale, Goal Selection, Occupational Information, Planning, and Problem Solving; and significantly higher than school three on Goal Selection and Occupational Information.

The Relationship Between Career Education
Teacher and Career Maturity

There are indications that the career education teacher to whom a student is assigned is a factor in the relationship between career education and maturity of career attitudes and competencies. When comparisons were made of treatment group scores between groups assigned to different teachers, several significant differences were found.

The students assigned to teachers B and C scored significantly higher on Self Appraisal than those assigned to teacher A. Those students assigned to teacher D scored significantly higher than those assigned to teacher A on Self Appraisal, Occupational Information, and Goal Selection; significantly higher than those assigned to teacher B on the Attitude Scale, Goal Selection, and Planning; and significantly higher than those assigned to teacher C on the Attitude Scale, Occupational Information, Goal Selection, Planning, and Problem Solving. Those students assigned to teacher E scored significantly higher than those assigned to teacher A on Self Appraisal, Occupational Information, Goal Selection, and Problem Solving; significantly higher than those assigned to teacher B on the Attitude Scale, Occupational Information, and Goal Selection; significantly higher than those assigned to teacher C on the Attitude Scale, Occupational Information, and Goal Selection; significantly higher than those assigned to teacher F on Occupational Information and Goal Selection; and significantly higher than those assigned

to teacher G on Occupational Information. Those students assigned to teacher F scored significantly higher than those students assigned to teacher A on Self Appraisal, Occupational Information, and Goal Selection; significantly higher than those assigned to teacher B on the Attitude Scale; and significantly higher than those assigned to teacher C on Occupational Information and Goal Selection. Those students assigned to teacher G scored significantly higher than those assigned to teacher A on Self Appraisal, Occupational Information, and Goal Selection; significantly higher than those assigned to teacher B on Goal Selection; and significantly higher than those assigned to teacher C on Occupational Information and Goal Selection.

It should be noted that no significant differences were found for the students assigned to different teachers in the same school. That is, there were no significant differences for the students assigned to teachers B and C in school two. There were no significant differences for students assigned to teachers D and E in school four. There were no significant differences for students assigned to teachers F and G in school three.

Discussion

Several of the findings of the study require additional discussion. This discussion will be directed toward the relationship between career education and career maturity

in regard to academic ability, sex, school, and career education teacher.

A generally positive relationship was found between career education and career maturity. Students who had participated in career education tended to score significantly higher on the Attitude Scale and the Goal Selection, Planning and Problem Solving subtests of the Competence Test than those students who had not participated in career education. A notable exception was found for high academic students. The high academic students who had career education did not score significantly higher than the high academic students who had not had career education on the Attitude Scale or on any of the five subtests of the Competence Test.

Shields (1979) studied career education programs for gifted students. He found that the career maturity of gifted students was not significantly affected by any of the several career education strategies tested. This may suggest that higher ability students do not respond to the career education activities which produce significant increases in the career maturity of lower ability students.

It has also been found (Crites & Semler, 1967) that a positive correlation exists between scores on the Career Maturity Inventory and academic achievement. If high academic students do have higher initial scores on the CMI, these high scores may act as a ceiling which will make it more difficult to show significant increases over a short time span.

The negative relationship between career education and Self Appraisal for the average academic students is more difficult to understand. Nothing could be found in the literature, related research, or the local curriculum which would justify such a result.

The results of the study indicated that the sex of the student was a factor in the relationship between career education and maturity of career competencies. Crites (1978) stated that the Career Maturity Inventory could be used to trace the career maturity of both females and males although the scores for females would tend to be higher than the scores for males. This is in accordance with the findings of this study. Since the females scores significantly higher than the males in the control group, the significant differences between the sexes in the treatment group was probably due to initial differences in career maturity for females and males.

Omwig and Thomas (1977) also found that eighth-grade students' career maturity levels, as measured by the Career Maturity Inventory, were affected by sex. They suggested that this difference between females and males may be related to the higher achievement levels usually attained by females in the eighth-grade.

The relationship between career education and career maturity varied for the schools involved in the study. Some differences between schools should be expected. The students

were not randomly assigned to schools. It is also impossible to implement identical programs in different settings with different personnel. The difference found between the schools in this study, however, seems to be greater than that which would be expected.

One possible source of this difference lies in the lack of uniformity in the testing conditions. In three of the schools the test battery was administered to intact classroom groups over a period of three days. In school two the test battery was administered in one sitting to groups of approximately 200 students in the school cafeteria. While the effect of the testing situation is not certain, it seems likely that the scores for school two were adversely affected.

The difference between schools also suggests that the career education program may have been implemented in significantly different ways in different schools (Patterson & Czajkowski, 1979). This line of thought should also be pursued in regard to the differences found between teachers.

Given the large differences in career maturity which occurred for students assigned to different career education teachers, and the fact that five of the seven teachers were teaching career education for the first time, it seems appropriate to examine the inservice training provided by the school district to assist teachers in the implementation of the career education curriculum. An investigation in this area (Sharpe, 1981) revealed that the district

provided a four hour inservice program for the career education personnel during the week prior to the beginning of the school year. No other specific career education inservice was provided during the semester in which the study was conducted.

It seems likely that because of the lack of district wide training sessions, the personnel within each school implemented the curriculum in different ways (Frey, 1979). This would explain the similarity of results for teachers within the same school and the difference between schools.

Recommendations for Future Research

1. The study should be replicated in the same school district with consideration given to eliminating the problems encountered during this study.

2. A descriptive study of implementation procedures for career education programs should provide important data for the development of this field.

3. A comparison of infused career education programs with separate class career education programs should be conducted.

4. A follow-up study of the students involved in this study should prove to be most productive. The patterns of maintenance of the gains achieved, as well as delayed of the treatment, should be determined by administering the same instruments to the same subjects each year until high school graduation.

CHAPTER BIBLIOGRAPHY

- Crites, J. O. Career maturity inventory: Administration and use manual. Monterey, California: McGraw-Hill, 1978.
- Crites, J. O., & Semler, I. J. Adjustment, educational achievement and vocational maturity as dimensions as development in adolescence. Journal of Counseling Psychology, 1967, 14, 489-496.
- Frey, W. P. How to keep those new programs alive and well. Educational Leadership, 1979, 37, 208-210.
- Omvig, C. P., & Thomas, E. G. Relationship between career education, sex, and career maturity of sixth and eighth-grade pupils. Journal of Vocational Behavior, 1977, 11, 322-331.
- Patterson, L. P., & Czajkowski, T. J. Implementation: Neglected phase in curriculum change. Educational Leadership, 1979, 37, 204-206.
- Sharpe, H. Personal communication, June 9, 1981.
- Shields, H. C. The effects of selected career experiences on the career maturity of gifted students. Unpublished doctoral dissertation, Georgia State University, 1979.

Appendix

APPENDIX

Plano Independent School District Career Education Curriculum

I. Introduction to Career Education

General Objective: The students will be introduced to the Career Education course and its objectives.

Students will identify their own attitudes, interests, experiences, hobbies, and study and work habits.

Specific Objectives: The student will be able to:

1. Complete a student information form.
2. State their interests on the form.
3. Use skills in spelling, grammar, usage, and penmanship in completing the form.
4. Follow oral and written directions in completing the form.
5. Demonstrate skills in effective listening and taking notes on teacher description of the course and classroom guidelines.
6. Assess themselves objectively.
7. Gain an awareness of their own values and attitudes.

II. Testing of Student's Interests

General Objective: Each student will take the Kuder General Interest Survey, Form E, study it for

interpretation and relate it to the fifteen (15) job clusters in connection with interests and educational plans.

Specific Objectives:

1. Follow instructions in taking the Kuder interest Survey.
2. Complete the survey with a minimum amount of assistance from the counselors/teachers.
3. Follow the directions in scoring the survey.
4. Plot their individual profile on the scales provided.
5. Interpret the results of their interest profile.
6. Recognize the necessity of a decision-making process in setting educational goals.
7. Begin thinking about a tentative plan for high school graduation.
8. Study the fifteen (15) job clusters from the United States Department of Education.
9. Interview workers and classify in the fifteen (15) job clusters.
10. Learn about classroom and additional resources concerning jobs related to student's interests.
11. Relate the ten (10) interest categories to the fifteen (15) job clusters.

III. Goal Setting and the Decision-Making Process

General Objective: Each student will go through a decision-making process in setting goals for planning their future.

Specific Objectives:

1. List the steps in a decision-making process.
 2. Define the term: goal.
 3. Recognize the ingredients for realistic goal setting, short, intermediate, and long term.
 4. Work through the decision making in establishing a real life goal at this time in his/her life, and recognize the value of this process in dealing with life.
 5. Realize that situations change from time to time and that goals have to be re-evaluated and changed when necessary.
 6. Recognize the necessity of using a decision-making process in setting goals. (Tentative plan for high school graduation, future career choices, etc.)
- IV. Investigation of the High School and Senior High School Programs

General Objective: Each student will become familiar with the course offerings, requirements for graduation, and physical facilities of the high school and senior high school they will attend in Plano.

Specific Objectives:

1. The students will become acquainted with the plan of the physical facilities which they will attend.
2. The students will be introduced to the requirements for high school graduation in Plano.

3. The students will focus on 9th and 10th grade course offerings.
4. The students will participate in a field trip to their feeder high school and be introduced to the administrative personnel at the school.
5. The students will be introduced to the vocational counselor who will on 11th and 12th grade opportunities in Vocational Major Studies.
6. The students will be informed of the opportunities available to them in Academic Major Studies.
7. The students will relate the vocational and academic opportunities to their interests as defined by the Kuder Inventory.
8. The students will participate in a field trip to the feeder senior high school and be introduced to the administrative personnel at the school.
9. The students will draft a rough copy of their ninth grade registration.
10. The students will draft a rough copy of their four-year plan for high school

V. Developing a Tentative Four-Year Plan for Accomplishment of High School Goals

General Objective: Each student through an in-depth study of the course offerings, intense counseling sessions, and visitations by senior high students and teachers, will

prepare a tentative four-year plan with emphasis for 9th grade registration.

Specific Objectives:

1. Read, understand, and interpret the Student Curriculum Guide (9-12) and utilize it as a tool in development of a Four-Year Plan.
2. Use a decision-making process in the establishment of goals as expressed by the Four-Year Plan. (Use results of Kuder profile of interests and study of jobs from their investigation.)
3. Complete a tentative four-year plan for high school graduation from Plano, with emphasis on 9th grade registration.
4. Evaluate, review, and revise his/her four-year plan with needed help from the appropriate counselors.
5. Calculate the number of credits they project by semester, and determine if they have the proper required credits to graduate, enroll in the college of their choice, or qualify for further technical study.

VI. Social Security

General Objective: The student will become aware of social security, its purposes, benefits, advantages, and disadvantages.

Specific Objectives:

1. Understand the brief history of social security.
2. Develop an understanding of how social security works.
3. Explain the benefits of social security.
4. Fill out an application for a social security card.
5. Apply for social security card with parent's permission.

VII. Choices and Opportunities

General Objective: The students will become aware of sources of job opportunities, guidelines for completing applications for employment, formats for resume writing, and techniques for interviewing.

Specific Objectives:

1. Recall several jobs that are related to each of their top three interests indicated by the Kuder Survey.
2. Recall jobs that are related to their hobbies.
3. Identify sources where they can find jobs.
4. Develop personal information sheet to carry with them to assist in applying for jobs.
5. Understand the importance of filling out application and the relation of getting the job because of the application.
6. Fill out several applications, with attention to legibility, good spelling, and accurate information.

7. Write the resume.
8. Understand the importance of selling yourself in the interview.

VIII. You, Your Employer, and Co-Workers

General Objective: The student will become more aware of what to expect in the areas of interpersonal relations, work, benefits, pay, and deductions.

Specific Objectives:

1. Understand the importance of interpersonal relations with co-workers as well as employer.
2. Explain the idea of a day's work for a day's pay.
3. Understand the deductions in relation to the paycheck.
4. Understand that all benefits have corresponding costs.

IX. Using and Paying the Government Services

General Objective: The students will understand that taxation is the means by which government provides services to its people and will study and work with an income tax return in a simulation.

Specific Objectives:

1. Understand that local, state, and national governments get their money by taxing.
2. Give examples of type of tax to pay for the services that governments provide. (Income tax,

property tax, sales tax, excise tax, import tax, export tax.)

3. Give examples of some of the services that governments provide with tax money. (Armed Forces, roads, education, garbage.)
4. Have an elementary understanding of filling out income tax forms.

X. Managing Money

General Objective: The students will be taught the importance of wise use of their money through the use of a simulation.

Specific Objectives:

1. Develop a spending plan.
2. Understand the need for a spending plan which includes the future as well as the present.
3. Use a simulation of a job from the newspaper related to one of their interest categories or a part time job they now have in developing a realistic spending plan. (May use the same one from tax unit.)
4. Maintain a record of the money they spend for one week.
5. Plan a simulated budget based upon a job they would like to have from one of their interest categories.

XI. Using Bank Services

General Objective: The students will become familiar with banking institutions and services which they might want to use.

Specific Objectives:

1. List five services that a bank provides for its customers.
2. Explain the process in opening a checking account at a bank.
3. Write checks in order to pay for simulated purchases.
4. Balance bank check stubs after making these simulated purchases.
5. Make out deposit slips.
6. Explain the value of a savings account and list advantages.
7. Explain how the bank uses money in savings account.
8. Explain advantages and disadvantages of credit.

XII. Our Free Enterprise System

General Objective: Each student will gain an understanding and appreciation of the free enterprise system.

Specific Objectives:

1. Discuss wants, needs, goods, and services in a manner indicating an understanding of the concepts.
2. Explain the theory of economic competition.

3. Explain price in terms of supply and demand.
4. Demonstrate the relationship between cost and price.
5. Explain the impact of government control on both cost and price.
6. Explain the meanings of price inflation.
7. Explain the flow of money, goods, and services.

XIII. Voting and Voter's Registration

General Objective: The student will be given the process of registration and the importance of voting in city county, state, and national elections.

Specific Objectives:

1. Complete a voter registration application.
2. State the importance of being an active voting citizen at all levels of government.
3. Discuss voter pattern.

BIBLIOGRAPHY

Books

- Campbell, D. T., & Stanley, J. C. Experimental and quasi-experimental designs for research. Chicago: Rand-McNally and Company, 1963.
- Crites, J. O. Theory and research handbook: Career maturity inventory. Monterey, California: McGraw-Hill, 1978.
(a)
- Crites, J. O. Administration and use manual: Career Maturity inventory. Monterey, California: McGraw-Hill, 1978. (b)
- Crites, J. O. Vocational psychology: The study of vocational behavior and development. New York: McGraw-Hill, 1969.
- Ginsburg, E. Career guidance: Who needs it, who provides it, who can improve it. New York: McGraw-Hill, 1971.
- Hoyt, K. B. et al. Career education: What it is and how to do it. Salt Lake City, Utah: Olympus Publishing Company, 1974.
- Marland, S. P. Career education. New York: McGraw-Hill, 1974.
- Super, D. E. Measuring vocational maturity for counseling and evaluation. Washington, D.C.: American Personnel and Guidance Association, 1974.
- Super, D. E., & Overstreet, P. L. The vocational maturity of ninth grade boys. New York: Teachers College, Columbia University, 1960.
- Super, D. E. et al. Vocational development: A framework for research. New York: Teachers College, Columbia University, 1957.

Articles

- Crites, J. O., & Semler, I. J. Adjustment, educational achievement and vocational maturity as dimensions of development in adolescence. Journal of Counseling Psychology, 1967, 14, 489-496.

- Frey, W. P. How to keep those new programs alive and well. Educational Leadership, 1979, 37, 208-210.
- Gallup, G. H. Gallup poll of the public's attitudes toward the public schools. Kappan, 1980, 62, 33-46.
- Gallup, G. H. Gallup poll of the public's attitudes toward the public schools. Kappan, 1979, 61, 33-45.
- Gallup, G. H. Gallup poll of the public's attitudes toward the public schools. Kappan, 1973, 55, 38-42.
- Gambino, T. W. Junior high: The exploratory years. American Vocational Journal, 1972, 47, 56-57.
- Goodman, L. V. Marland on career education. American Education, 1971, 9, 25-28.
- Jones, W. L. A redirected education for Texas. ACTIVE News, 1972, 3, 1-3.
- Mathany, K. B. The role of the middle school in career development. American Vocational Journal, 1969, 44, 18-21.
- Meehan, M. L. Career exploration in middle/junior high schools. Man/Society/Technology, 1975, 34, 44-116.
- Omwig, C. P., & Thomas, E. G. Relationship between career education, sex, and career maturity of sixth and eighty grade pupils. Journal of Vocational Behavior, 1977, 11, 322-331.
- Patterson, L. P., & Czajkowski, T. J. Implementation: Neglected phase in curriculum change. Educational Leadership, 1979, 37, 204-206.
- Westbrook, B. W. Content analysis of six career development tests. Measurement and Evaluation in Guidance, 1974, 7, 172-180.

Reports

- Bhaerman, R. D. Career education and basic academic achievement--A descriptive analysis of the research. Washington, D.C.: United States Office of Education, 1977.
- Center for Vocational and Technical Education. The comprehensive career education model: Progress report. Columbus, Ohio: The Center for Vocational and Technical Education, 1972.

Kershner, K., & Blair, M. Summative evaluation of the RBS career education program. Philadelphia, Pennsylvania: Research for Better Schools, 1975.

McBain, S. L., & Majure, W. C. Project discovery. Red Oak. Iowa: Southwest Iowa Learning Resources Center, 1979.

National Advisory Council on Vocational Education. Vocational education: The bridge between man and his work. Washington, D.C.: United States Department of Health, Education, and Welfare, 1968.

Texas Education Agency. Career education: A statewide assessment in Texas. Austin, Texas: Texas Education Agency, 1979.

Public Documents

Texas Education Agency. A tentative framework for developing K-12 career education. Austin, Texas: Texas Education Agency, 1972.

United States Department of Health, Education, and Welfare. Career education. Washington, D.C.: United States Department of Health, Education, and Welfare, 1971.

Speeches

Bell, T. H. The status of career education. Speech before the National Conference for State Coordinators of Career Education, Ohio State University, October 31, 1974.

Marland, S. P. Career education now. Speech before the Convention of the National Association of Secondary School Principals, Houston, Texas, January 23, 1971

Unpublished Materials

Alexander, R. The effects of career education curriculum on the vocational maturity of inner city adolescent boys. Unpublished doctoral dissertation, Southern Illinois University at Carbondale, 1979.

Bryant, R. S. An experimental study of the effect of a career education program on academic achievement and attitudes of fifth grade students. Unpublished dissertation, North Texas State University, 1975.

- Callahan, J. P. A factorial study of career education correlates in selected Montana schools. Unpublished doctoral dissertation, University of Montana, 1979.
- Gibbs, F. P. The nature, status, and scope of career education programs in the school districts of the state of Michigan. Unpublished doctoral dissertation, University of Michigan, 1977.
- Grant, L. T. A comparative study of attitudes of students, parents, educators, and business leaders toward selected concepts of career education. Unpublished doctoral dissertation, University of Houston, 1979.
- Hunt, M. A study of teachers' perceptions regarding implementation of career education in the classroom. Unpublished doctoral dissertation, University of Montana, 1979.
- Laskin, S. The effects of a decision making program on the career maturity of high school students. Unpublished doctoral dissertation, Lehigh University, 1979.
- Magill, C. L. The effects of an occupational investigation program upon the career maturity of students at a career academy within the magnet school concept. Unpublished doctoral dissertation, East Texas State University, 1979.
- Magruder, A. W. A study of the stability of career choices, school plans, and interests of students during the secondary school years. Unpublished doctoral dissertation, St. Louis University, 1970.
- Montemurro, L. Two approaches to the development of career maturity in economically and educationally disadvantaged adolescents. Unpublished doctoral dissertation, University of Pittsburg, 1979.
- Nembhard, J. M. Influence of integrated career components on tenth grade students attitudes toward English. Unpublished doctoral dissertation, University of Maryland, 1979.
- Sharpe, H. Personal communication, June 9, 1981.
- Shields, H. C. The effects of selected career experiences on the career maturity of gifted students. Unpublished doctoral dissertation, Georgia State University, 1979.

- Silliker, S. The evaluation of secondary school career education strategies using the career maturity inventory. Unpublished doctoral dissertation, Boston College, 1979.
- Wampler, E. The effect of career education on career attitude maturity of thirteen year olds. Unpublished doctoral dissertation, University of Indiana, 1979.
- Zum Brunnen, C. Relationships between perceptions of career education activities, self concept, and academic achievement of fifth, eighth, and eleventh graders. Unpublished doctoral dissertation, Ohio State University, 1979.