THE EFFECTS OF MOBILE ASSISTED CAREER EXPLORATION
ON THE CAREER DEVELOPMENT OF RURAL
NINTH GRADE STUDENTS

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree
of
DOCTOR OF PHILOSOPHY
in
Psychology

Approved:

UTAH STATE UNIVERSITY
Logan, Utah

1973
ACKNOWLEDGMENTS

The author wishes to express appreciation to the members of the faculty advisory committee: Professors Keith Checketts, David Stone, Elwin Nielson and Marvin Fifield, for their interest, contributions and support in the designing and writing of this study.

Sincere thanks to Dr. Michael Bertoch, Chairman, whose able assistance and direction were indispensable in the formulation and completion of the research.

A special commendation goes to John Stephens, Russell Whittaker and their associates in the Utah State Department of Education, without whose efforts Project MACE would not have existed.

The writer also extends warm gratitude to his wife, Linda, who unselfishly assisted in conducting the treatment program and whose companionship made the research task a pleasant one.

A final "thank you" is extended to each of the 18 schools which participated in and made Project MACE possible.

Robert Eldred Charlton
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ABSTRACT

The Effects of Mobile Assisted Career Exploration on the Career Development of Rural Ninth Grade Students

by

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Utah State University, 1973

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The Problem. This study investigated whether or not a structured career development program, using a mobile guidance unit and operating on a limited time schedule, could provide a feasible means for facilitating the career development of ninth grade students in the rural school setting.

Project MACE. MACE stands for "Mobile Assisted Career Exploration." Project MACE was a study developed by the research office of the Utah State Board of Education and conducted by Utah State University. The study used ninth grade students in sixteen selected rural Utah high schools and in two rural southeastern Idaho schools.

Design of Research. The specific objectives of the study were measured in the form of the following null hypotheses:

1. There is no significant difference between experimental and control groups in terms of career attitudes as measured by the Vocational Development Inventory Attitude Scale.
2. There is no significant difference between experimental and control groups in terms of career values as measured by the Occupational Values Inventory.

3. There is no significant difference between experimental and control groups pre- and post-test estimates of their aptitudes and interests as measured by the Self Ranking Inventory of Aptitudes and Interests.

Since this study is an evaluation of an educational program still in some state of development, it is a formative evaluation. The format for the study is a research and development model rather than a true experimental design.

**Population.** Project MACE selected those schools which were considered representative of rural Utah high schools. It was decided that project MACE could accommodate about one thousand students during the school year. Sixteen schools were selected for the study. In addition, two schools in Southeastern Idaho were chosen as a control population.

**Observational Design.** Three objective tests were given on a pre- and post-test basis to all of the students included in Project MACE. In addition, subjective data were gathered through student, parent and faculty questionnaires.

**Program.** The treatment program was designed to give each student an opportunity to evaluate and discuss his aptitudes and interests. The student was then assisted in relating this information to various occupations
and training possibilities. Each student learned how to use occupational information sources and was encouraged to investigate several occupations of his choice. All students were involved in group and individual counseling, including a joint session with their parents. The major focus of the counseling sessions was to assist students in making tentative career choices which were realistic and obtainable for them. To carry out the program, a counselor and occupational instructor were employed.

Conclusions. Hypotheses one and three were both rejected as the data revealed differences at a statistically significant level. Career attitudes and knowledge of aptitudes and interests were positively influenced by the experimental program. Hypothesis two, concerning career values, was accepted for the values of salary, security and demand, and rejected for the values of prestige, interest and satisfaction. Sex differences were noted on all the evaluation instruments.

Recommendations. The treatment program should be continued in schools needing the service on a continuous basis. Several possible avenues for future research were suggested. Among the more important were:

(1) a replication of this study using urban schools and comparing the treatment conducted in a mobile facility versus the same program in a classroom setting; (2) a study of the independent teaching variables to determine which are most effective; and (3) a study to determine the long range implications of the treatment.

(119 pages)
CHAPTER I
INTRODUCTION

Stimulated by the Exemplary Programs and Projects Section of the 1968 Amendments to the Vocational Education Act of 1963, a tremendous growth has taken place in public school career development activities throughout the nation. This open door to the extension of career development programs demonstrates the nation's conviction that education for life must include preparation for work.

In its progression from a simple to an exceedingly complex society, our nation has virtually eliminated the traditional means by which adolescents become working adults. Our nation's leaders are looking to career development programs to perpetuate habits of industry and attitudes of social responsibility which accompany mature citizenship.

Along with the increased opportunities provided by a complex society comes added responsibilities for the guidance counselor, especially those serving in rural areas. It is apparent that the choices available to the rural student will be much more numerous and flexible than they were in the past. This will require the school counselor to maintain new skills and programs to meet the needs of his students. In order to make the most rational career decision, a student must understand the nature and possible consequences of each choice; his own strengths and weaknesses; his likes and dislikes; and
the relationship of this information to choosing the most suitable alterna-
tive.

In the "Guide for the Development, Implementation and Administra-
tion of Exemplary Programs and Projects in Vocational Education," the
authors indicate that for large numbers of rural American youth, the public
school system represents meaningless activity leading nowhere. They re-
port that students fail to see any relationship between their current school
experiences and some identifiable next step beyond school (1969, p. 5).
Since the school is perhaps the single most appropriate agency for system-
atically preparing youth to enter the world of work, it becomes its responsi-
bility to help bridge what many youth see as a "credibility gap" between the
announced purposes and the actual outcomes of public education.

During the past decade an increasing number of people, professions
and organizations have been involved in studying career development as it
relates to the outcome of public education. Horner et al. (1967), with rela-
tion to the national scene, believe that the type of employment an individual
obtains is influenced by the motivation and direction provided by occupational
aspirations, expectations and interests of adolescence.

These phenomena are crucial for the occupational attain-
ment of rural youth, especially those who migrate into
urban areas . . . The importance attributed to the occupa-
tional orientation of youth as an explanatory variable
for subsequent status attainment is evidenced by the
extensive research literature on this subject and the
increasing amount of attention being currently given to
the study of these phenomena.
Shill (1968), in his study of occupational interests, aspirations and expectations of rural high school seniors in Mississippi, states: "Most rural high schools fall short of the desired degree of influence they exert upon students who are engaged in the occupational choice process." The question which naturally follows is whether or not Utah has been successful in meeting the career development needs of its students. In a study designed to ascertain the degree to which Utah high school students were being orientated to career goals, Adams (1968) found:

1. 27.3 percent of the students will not visit the counselor.
2. 31.6 percent only visited him once or twice during high school.
3. Less than half had tests interpreted for them.
4. Largest percent stated counselors had little or no influence on their post high school education. There was little indication that counselors influenced students in the direction of vocational, technical post high school training.
5. Over 60 percent said the counselor did not help them identify their interests and abilities.
6. The majority said they received little or no occupational information in classes.
7. The majority expressed a need for help in choosing a career.
8. 87.5 percent said this was the counselor's role.

Project V.I.E.W. (1968) found that:

1. H.S. students do not use available sources about Utah non-baccalaureate career opportunities. Upper middle
class, white collar value judgments are prominent. Others simply do not know the vast range of possible career opportunities.

2. Counselors are often unable to meet the needs of students because of lack of facilities, too many students, and inability to stay current in all areas of career education.

An earlier study by Mortimer (1965) showed that counselors have many duties which relate directly and properly to their work, but they also have many other duties which have little or no relationship to the counseling or guidance of students. In a survey of counselors in this study, 85 percent of them thought greater emphasis should be placed on career guidance. Only 12.5 percent of the school superintendents surveyed felt counselors were effective in helping students select a vocation.

A recent report (1968) by the Utah State Board of Education relating to federally assisted programs emphasizes the perplexing status of counselors in the state:

The efforts at development and upgrading of programs of guidance and counseling at the local level continue to work against the obstacles of an insufficient supply of counselors being prepared by the counselor education institutions of the State, the shift of a significant number of counselors into the field of administration and into other more lucrative positions outside the field of education, excessive pupil-counselor ratios and the seemingly endless struggle to achieve status and respectability for the profession in the educational family. (p. 3)

These reviews point out that Utah does have a problem in helping students experience adequate career development. This leads to the question, "What kinds of experiences will help our students in this area and how might
our local schools effect a program with this purpose?" Before seeking an answer to this question, a definition of career development seems appropriate. Tiedeman (1961) defines it as "... self development viewed in relation with choice, entry and progress in educational and vocational pursuits."

With regard to the kinds of experiences that will enhance the student's career development, the writer would first turn to Super (1963), who says that career development in its simplest terms is the development and implementation of the student's concept of himself. If this is so, it would appear necessary that the student have an accurate picture of himself; i.e., his aptitudes, interests, values, etc. Tiedeman (1961) concurs and sees the aim of career guidance as enhancing the operation of reason (which is related to accurate information about self) in the process of career development.

In addition to knowledge of self as an important part of career development, considerable evidence exists as to the importance of student knowledge concerning the world of work. Sineck et al. (1966), in reviewing research in this area, found evidence to cause them to recommend expanding the knowledge and interests of all students at an early age in order to reduce unrealistic occupational identification. Wixon (1963) found that the study of careers by ninth grade students influenced them to explore fields of work more in line with their abilities. Devault (1963) found that individual counseling sessions and exposure to occupations through a vocational planning unit
caused students to significantly improve in appropriateness of career choice as compared to those not receiving a similar experience. Super and Overstreet (1960), Norris (1963), and Hoppock (1963) report similar findings.

The above review of literature seems to at least partially answer the first part of the previously stated question concerning the kinds of experiences which facilitate a student’s career development. The second part of that question, concerning how our local schools might best effect such a program, presents a different problem. It appears obvious that funds for additional counselors or teachers to implement a revitalized career development program is not imminent. It is the belief of the writer that the ideal program would begin in the early grades and continue throughout high school. Again, the monetary problem seems to preclude such a program. As a universal answer for rural districts in the state, a beginning might be more feasible if the less financially capable school districts pooled their resources in a shared career development program.

**Statement of the Problem**

The specific purpose of the study was to determine if a mobile guidance unit operating on a limited time schedule could provide a feasible means for facilitating the career development of ninth grade students in the rural school setting. Specifically the study was based on the assumption that through the experiences provided by the program each ninth grade student should:
1. Know and understand his abilities and interests.

2. Know and understand many of the possible career and educational alternatives in which he might participate.

3. Understand the steps one should follow in making a realistic career decision; such as the intelligent matching of one's interests and abilities with job requirements, and to develop those skills necessary to research job information.

Objectives

The specific objective of this study was: To determine if project MACE (Mobile Assisted Career Exploration) had a facilitative effect on the career development of rural ninth grade students. This study will test the following hypotheses:

1. There will be no significant difference between experimental and control groups in terms of career attitudes as measured by the Vocational Development Inventory, Attitude Scale.

2. There will be no significant difference between experimental and control groups in terms of career values as measured by the Occupational Values Inventory.

3. There will be no significant difference between experimental and control groups pre- and post-test rank ordering of their aptitudes and interests as measured by the Self Ranking Inventory of Aptitudes and Interests.
Definitions

Project MACE: "MACE" is a set of initials which stand for Mobile Assisted Career Exploration. Project MACE as used in this study refers to a program developed by Utah State University, Department of Psychology in conjunction with the Research Office of the Utah Board of Education to evaluate the effectiveness of using a mobile unit and structured guidance program as a means of facilitating the career development of rural ninth grade students.

Rural Schools: Those schools located in areas which are geographically isolated from population centers of 8,000 inhabitants or more, the major industry is agricultural in nature, and the majority of the students must be bussed from areas outside of city limits.

Control School: A school chosen because of rural school characteristics whose ninth grade students were given a pre- and post instrument but no treatment. The students participated in the normal school procedure and no attempt was made to control existing counseling programs.

Mobile Facility: A fully carpeted trailer 12' x 44' divided into two rooms designed for use with small groups and containing specially equipped materials, personnel and study areas.
CHAPTER II

REVIEW OF THE LITERATURE

Since this study included not only the area of career education, but also the use of an innovative method to facilitate career development, it seemed most feasible that the search into related studies and other relevant literature be divided into segments representing the major emphasis of the study. The first section deals with the origins of the career education movement. The second section will deal with career attitudes and values and attempts at their facilitation. The third section will deal with the effectiveness of career guidance programs.

Origins of Career Education

It is of little doubt that career training is as old as other forms of schooling or learning. According to Robert (1965), vocational methods can be traced back to the Babylonians, Persians and Hebrews. Historians indicate that during the "dark ages" when education almost ceased, vocational education flourished with apprenticeships and guilds. Venn (1964) verified that records show that apprenticeship was practiced in England in the Thirteenth Century. Early immigrants to the Americas undoubtedly brought similar vocational ideas with them. For example, the Massachusetts Bay Colony in 1964 enacted a comprehensive apprenticeship law requiring
parents and masters of apprentices to teach each child a trade or calling (Lu, 1967).

The shift from the apprenticeship probably occurred about the same time as the Civil War. Since then modern machinery and methods have increased rapidly, thus creating new types of employment and training requirements. With this change came the advent of career guidance programs.

One of the earliest attempts to establish a career guidance program occurred in 1895. George Merrill, Director of the California School of Manual Arts, involved each student in the exploration of every trade taught by the school. Besides the exploration experience, each student was also analyzed in an effort to determine his abilities, interests and needs. Individual counseling, job placement and follow-up were also facets of the program (Brewer, 1942, p. 49). The first regularly scheduled class of occupational information appears to have been taught in the Fairfield, Connecticut school system in 1908. Frank Parson, in the same year, organized the Vocational Bureau—an organization dedicated to assisting young people in making career choices based upon their occupational aptitudes and interests. Parson advocated the following principles:

1. It is better to choose a vocation than merely to hunt a job.
2. No one should choose a vocation without careful, thoroughly honest, self-analysis and guidance.
3. The youth should have a large survey of the field of vocations, and not simply drop into a convenient or accidental position.

4. Expert advice, or the advice of men who had made a careful study of men and vocations and of the conditions of success, must be better and safer for a young man than the absence of it.

5. Putting down on paper a self-analysis is of supreme importance. (Parsons, 1909, p. 11)

The Vocational Guidance Bureau in Boston incorporated many of Parson's ideas and helped the Boston school system develop a guidance program including activities at the elementary, intermediate and secondary levels by 1915. Other cities soon followed with organized vocational guidance programs of their own. Also, in 1915, the National Vocational Guidance Association was organized. This organization resulted in vocational guidance literature becoming increasingly available.

In 1938 a national committee of educators recommended federal aid for vocational education in order to provide occupational outlook information on a national, state and local level. An Occupational Information and Guidance Service was soon after established.

The National Defense Education Act by the Congress in 1958, and its renewal and expansion in subsequent years, has emphasized the place of guidance services in the national defense of the country. Title V, Parts A and B, of this act further elaborate specific federal assistance in providing more extensive counseling programs as well as educational opportunities to
improve the competency of counselors in recognizing talents and abilities and assisting in utilization of them in appropriate careers (Public Law 85-864, 1958).

The strong commitment of Congress to the career development of America's youth is further exemplified by the Vocational Education Act of 1963 and its 1968 Amendments. The Exemplary Programs and Projects Section of the Amendments states its purpose as: (1) to identify effective on-going programs which can serve as models for improving the career education of students at all levels, and (2) to stimulate interest in and provide the means for creating new, more efficient and effective methods for providing job preparation needs. The section also specifically mentions certain kinds of programs which would be considered especially appropriate. Those mentioned are programs designed to acquaint elementary and secondary school students with the broad range of occupations for which special skills are required and the requisites for careers in such occupations; and programs or projects for intensive occupational guidance or counseling during the last years of school and for initial job placement (Public Law 90-576, 1968).

The foregoing incidences and many others have contributed to the growth and present shape of career education. Guidance services and career guidance programs are an integral part of many public schools today.
The next section of this review of the literature will be concerned with studies that evaluate career attitudes, values and attempts at their facilitation.

**Career Attitudes and Values**

The most prominent emphasis in career psychology has been upon the developmental nature of how and why individuals choose and adjust to occupations as they do. Researchers such as Ginzberg, Super, Tiedemann and O'Hara have helped Vocational Development Theories gain widespread acceptance and application. The major behavioral dimensions along which career development has been suggested are: realism of vocational choice (Ginzberg et al., 1951); consistency of vocational choice; crystallization of vocational goals; maturity of attitudes toward vocational choice (Super, 1955); and, clarification of the vocational self-concept (O'Hara and Tiedemann, 1959). Within this framework career choice is not a single isolated act of an individual, but a comprehensive ongoing process encompassing many interrelated behaviors of the individual at various points in his life. Two of the behaviors affecting career development are attitudes and values.

**Career attitudes**

John Crites has conducted considerable research in the area of measurement of the maturity of vocational attitudes. His definitions of attitudes include: extent to which the individual is actively participating in
the process of making a choice; extent to which the individual is task or
pleasure oriented in his attitudes toward work and the values he places
upon work; extent to which the individual relies upon others in the choice
of an occupation; extent to which the individual bases his choice upon a
particular factor; and the extent to which the individual has accurate or
inaccurate conceptions about making an occupational choice (Crites, 1965,
p. 35).

These definitions form the variables upon which he bases his atti-
tude test of vocational development and cover the dimensions of: Involvement
in the choice process; Orientation toward work; Independence in decision
making; Preference for vocational choice factors; and Conceptions of the
choice process.

Crites states that individual differences in the maturity of vocational
attitudes can be objectively and reliably measured with the Attitude Scale of
the Vocational Development Inventory. He further says that the Attitude
Scale is useful as a measure of one aspect of vocational maturity—that is,
the dispositional response tendencies associated with career decision-making
(Crites, 1969, p. 70).

A large number of studies with the Attitude Scale have been conducted
to determine its correlation with measures of psychological variables on an
intellective and non-intellective basis. Research on the intellective classifi-
cation has centered around the relationship of intelligence or scholastic
aptitude tests to the maturity of vocational attitudes. For example, Asbury (1968) obtained an r of .28 between the Attitude Scale and the Otis Quick Scoring on a sample of 63 eighth grade disadvantaged males. Dutt (1968), also using the Otis but with ninth grade boys, reported an r of .42. In a group of high school senior males, Cover (1958) found an r of .45 with the SCAT. It would appear from these findings that career attitudes are related to intellective factors.

The non-intellective variables which have been related to the Attitude Scale are primarily personality characteristics. Bartlett (1968) compared 69 male and 81 female Manpower Development Trainees, ages 16-21, with High, Middle and Low Vocational Maturity scores on the various Adjective Check List scales. His analysis of variance indicated a positive relationship between the maturity of vocational attitudes and Self Confidence, Achievement, Autonomy, and Dominance; and an inverse relationship with Deference and Abasement. He states that persons who score high on the Attitude Scale are "... more assertive, persistent, goal oriented, forceful and independent" (Bartlett, 1968, p. 107). In another study with the Adjective Check List, Shalon (1965) correlated the Attitude Scale with just the Achievement and Aggression scales in a sample of 102 vocational-educational male clients and found an r of .31 with the vocational clients but a non-significant r of -.17 with the educational clients. Other variables found to be related to the Attitude Scale include: scholastic achievement r .34
(Asbury, 1968); persistence in College $P < .01$ (Harris, 1966); success in vocational training, nurses $r .30$, and mechanics $r .16$ (Malone, 1965); and job success $r .19$ (Cox, 1968).

There have been several studies related to attitude facilitation through applied programs. Crites (1969) reviewed these studies and found three counseling studies which produced positive findings and four studies which have shown that counseling had little effect on the maturity of vocational attitudes. In these counseling studies the focus was upon the individuals' attitudes and feelings about self, education and vocation.

Research is also available as to whether exposure to occupational psychological information would enhance the maturity of vocational attitudes. Goodson (1969), in a study using college freshmen, found positive significant gains between groups after a seven-week orientation program. Schmieding and Jensen (1968), on the other hand, assessed the effects of an eight-week, 22-hour occupations class on eleventh and twelfth graders and found no difference between groups. They concluded that short-term treatment has a limited influence on firmly established impressions and attitudes (Schmieding and Jensen, 1968, p. 122). Shirts (1966) also found no difference between sixth grade control and experimental groups using the Life Career Game as the independent variable.

Probably the best conclusion from the data, since it is both positive and negative, would be that further research is needed.
Career values

No study of career development would be complete without reference to the major role values play in determining career choice. It seems reasonable to suppose that personal values underlie occupational choice and attainment. A number of studies have examined the occupational values of junior high and high school students. Dipboye and Anderson (1959) administered a questionnaire concerning the plans and values of high school students in terms of security, prestige, salary, interest, advancement, working conditions, relations with others, independence and benefits. At the ninth grade level, girls highly valued matters such as prestige, interest in work, working conditions and relations with others. Ninth grade boys valued independence, salary and advancement opportunities. Twelfth grade results stayed similar with the exception that older girls stressed interesting work and older boys’ regard for advancement dropped. Interesting work and prospects for advancement seemed more important to twelfth graders than to ninth graders. The conclusion may be that younger boys and girls are less concerned with the need for interesting work than older students because work is not so imminent for them.

Anderson and Dipboye (1959) also report the results of a comparison between the occupational values of high school students who have expressed a vocational preference as opposed to those without a preference. No difference in the values of vocationally decided and undecided twelfth grade students
were found. At the ninth grade level, undecided students rated salary and advancement more highly than did the decided students. Results of the total sample of ninth and twelfth graders indicate those expressing a vocational preference value prestige more and salary and advancement less highly than the undecided students. In a similar study, Perrone (1965) administered a value orientation instrument to a sample of junior high school girls and found that intelligent and high achieving girls sought careers offering intrinsic satisfaction, whereas lower achieving, less intelligent girls sought educational objectives inconsistent with their abilities and talents.

Researchers have also been concerned with the values of people at different stages of development. Wagman (1966) compared the values of groups of high school and university students and found a number of differences. The high school students preferred jobs which offer security and independence while the college sample valued interesting work most highly. Gribbons and Lohnes (1965) also studied age changes in values. They elicited adolescent vocational values by means of interviews with a group of students starting in 1958, then again in 1961 and 1963. Satisfaction with and interest in work consistently headed the list of occupational values over the five-year period. Generally the correlations, ranging from a low of .46 between eighth and twelfth grade girls and a high of .95 for eighth and tenth grades, reflected considerable stability of values over the junior high and high school years.
In another longitudinal investigation, Thompson (1966) examined the change in values between ninth and tenth grades of a group of 1700 high school students. He also found a great deal of consistency from ninth grade to tenth grade. In summarizing his findings he stated that there was no significant difference between how the boys, as a group, responded as freshmen and as sophomores and the same was true for the girls.

Super (1953) has stressed the importance of occupational values in the career choice process. He stated that in order to understand the dynamics of an individual's choice it is important to know his values, interests and abilities. Impellitteri (1970) has conducted considerable research on the assessment of career values. He felt that a new inventory was needed in order to assess all "known dimensions of career values." This conclusion was reached after he reviewed eight available occupational inventories and found that no single inventory accounted for: (1) the measurement of the entire value domain; (2) the ipsative nature of values incorporated into the measurement scheme; and (3) the factor of value intensity. The Occupational Value Inventory was an outgrowth of this need. The Occupational Value Inventory consists of seven scales of which, according to a personal communication with Impellitteri, four scales appear to be independent. These scales are:

1. Interest and Satisfaction: One likes the work, enjoys it, is happy at it, fulfills oneself by doing it.
2. **Salary:** One perceives the financial return resulting from work, can make a good living at it, sees it as an opportunity for a steady income.

3. **Prestige:** One is impressed by the respectability attached to work, can earn recognition from it, desires the feeling of importance that goes with it.

4. **Security and Demand:** One can obtain employment in this work, perceives that workers are needed in it, there will always be openings in it.

Kapes reviewed the research literature in order to find studies which have explored these scale values to obtain some reasonable comparisons. He found three studies dealing with junior high school or high school youth and compared these studies with that of Impelliteri and Kapes (1970). His findings are reported under each of the scale categories.

**Interest and Satisfaction.** In the studies reported, girls scored significantly different than boys with the difference favoring girls. This was especially true of girls who aspired to go to college, those who had not chosen a vocational choice of study for tenth grade, and who scored higher on the "G" scale of the General Aptitude Test Battery (GATB).

**Salary.** In contrast to the interest and satisfaction value, those who placed a high value on salary were the boys, those who scored lower on the
GATB "G", the non-college aspirants, and those who had selected a vocational course of study.

**Prestige.** Those who placed a high value on prestige were the girls, those scoring lower on the GATB "G" and those who had not chosen a vocational course of study. No significant difference between college aspirants and non-college aspirants on this value were found.

**Security.** There was a lack of a significant correlation with sex for this value. Those who scored lower on GATB "G" and those who had chosen vocational courses of study tended to place a higher value on security.

As one can ascertain from the review of the literature, career values generally showed a relationship to sex, age, career orientation and occupational level. Part of the diagnostic picture in career counseling must be the exploration of career values. Counseling and occupational information programs designed to facilitate the decision-making process and clarify career values are reported in the next section.

**The Effectiveness of Career Guidance Courses**

Current vocational theory has indicated the aim of career guidance programs to be that of helping students make decisions based upon personal facts and knowledge of the world of work. The use of career guidance courses at the high school and junior high have been advocated and experimented with for many years. Since costs usually prohibit a full 12-year
program, guidance and career exploration activities are usually offered for one semester during the school year. The ninth grade has been a popular year for the introduction of this curriculum. Astin (1967) in a report based on project Talent data, stated:

Although a person makes career decisions throughout his life, it is possible to identify a number of critical choice points which relate to preparation for, entry into, or change in one's occupation, involve decisions that have long term affects on the person's subsequent development. Entry into the ninth grade can be one such critical point because it is usually then that the student must decide what type of high school curriculum to pursue. (Astin, 1967, p. 97)

It has been found that in the ninth grade many students can benefit by career exploration. Sinick, Gorman and Hoppock (1966), in their review of the research on vocational guidance courses, found evidence to support the idea that courses designed to expand the knowledge, interest and values of all students at an early age helped reduce unrealistic occupational identification. In another review, Wixom (1963) found that ninth graders who had a career guidance course tended to explore fields of work more in line with their abilities. There are many other studies which favorably appraise career guidance courses. Koos and Kefanner (1932) found that a career guidance and occupational information course reduced the position of graduating students who did not have career plans from 42.5 percent without plans and without the course to 13.8 percent after the course was initiated. Lincoln (1934) compared students who had had a course in occupations and
individual counseling to those who had neither. His results indicated that those who had both a course in occupations and individual counseling made more appropriate career choices than any other group. The next best group of students were those who had received counseling without the course.

Stone (1948, p. 161) evaluated career orientation courses in general and reported that such courses appear to "down grade the aspirations of students to more realistic levels." Hoyt (1955) found that group sessions were as effective as individual counseling. He further found an increase in percentage of realistic career choices in terms of measured mental ability, aptitudes, and interest, certainty of vocational choice and satisfaction with it in both group and individually counseled students. Gribbons (1960) interviewed and tested eighth grade students prior to and after participation in a group career orientation course. It was found that students were able to make significantly more accurate appraisals of their abilities, values and interests after the course than before. It was also found that the students had significantly more information about educational and occupational opportunities and alternatives after the program than before it. Devault (1963) compared a group of students who participated in ten 25-minute career orientation lectures and one individual counseling session with a control group matched for age, sex and measured intelligence. Appropriateness of career choice was ascertained for both groups at the beginning and end of the course. The vocational appropriateness of the experimental group was
found to have improved significantly at the end of the course, while the control group did not improve.

Krumboltz and Hamilton (1965) experimented with an occupational orientation course in which students actually practiced on-the-job tasks performed by people in various occupations. It was found that students who had this type of experience engaged in more information seeking behavior than did students who had not had this experience. Roe (1956, p. 255) described a study using boys and girls in grades 3-12 in several Eastern schools, both urban and rural, from which she concluded that education to some extent broadened occupational and vocational horizons. This would indicate that boys and girls, through occupational orientation courses, can be made aware of a greater diversity of occupations. This was especially true at the lower ability levels.

Summary

This review of literature has been concerned with three main sections. In the first section a brief history of the origin of the career education movement was discussed. The earliest attempts at career education date back to the Babylonians, Persians and Hebrews. Career guidance programs seemed to have surfaced about 1893 and have continued to spread; partially due to the strong commitment of Congress exemplified by the funding of various acts and programs designed to help the career development of the country's youth.
The second section dealt with career attitudes and values, major factors affecting career development. It was found that career attitudes were correlated with intellective and non-intellective psychological variables, such as, scholastic aptitude tests, intelligence tests, adjective check list, scholastic achievement, persistence in college and job success. Positive and negative results in studies attempting to enhance the maturity of career attitudes indicate the need for further research.

Career values generally showed a relationship to sex, age, career orientation and occupational level. Some of the values explored included: security, prestige, interest, advancement, working conditions, relations with others, independence, and benefits. It was determined that values play an important role in determining career choice.

Finally, the last section explored the effectiveness of career guidance courses. The ninth grade appears to be a critical point for the introduction of career development activities. There is evidence that career guidance courses do have a positive effect on the career choices of students by reducing unrealistic occupational identification and expanding knowledge, interests and values.
Since time, distance and money were limiting factors in the study, it was decided to use those rural schools located in the southwest portion of the state. The superintendents and principals of the areas involved were invited to a planning session where the objectives of the study were presented. This meeting resulted in sixteen schools agreeing to participate during the 1969-70 school year. A list of participating schools is included in Appendix A. The experimental schools totaled approximately 1050 ninth grade students. All of the schools are either without full time counseling services or have a counselor-student ratio exceeding 400 to 1.

In addition, 130 ninth grade students from South Fremont Junior High in St. Anthony, Idaho, and 70 ninth grade students from Teton High School in Driggs, Idaho, participated as control groups. These numbers constituted the total ninth grade population at both schools. The control groups were given all the instruments on a pre-post basis with an interval of eight weeks between tests and the total population was evaluated.

To evaluate the effects of the career development program on attitudes and values, a stratified random sample of 300 students was chosen
from the experimental schools. The sample size of 300 was chosen due to limited financial resources. The stratification was based on size of school and number of males and females. A table of random numbers was used to identify the sample. The experimental group consisted of 300 ninth grade students and the control group consisted of 200 students. To evaluate the Self Ranking Inventory of Aptitudes and Interests, data from the entire experimental population were used and compared with the entire control sample. The reason the entire experimental population was used in the evaluation of the Self Ranking Inventory was that financial resources were not a problem since the data could be treated without needing extra funds.

**Design**

Basically, the study was designed to help the student acquire: (1) knowledge of self and the world of work and (2) practice in utilizing this knowledge in career decision making. In order to gain information concerning the world of work, each student interacted with the following materials which were located in the mobile facility as work-study areas or stations.

- **Station 1:** 1 Desk top Occupational File, 1 Chronicle Occupational Library, 2 Science Research Associates Files, and unbound career information materials.
- **Station 2:** Library books covering 93 occupational fields.
- **Station 3:** V.I.E.W. materials covering 123 non-college jobs in Utah.
Station 4: Materials from post high school technical institutions and business schools in Utah and materials concerning apprenticeship trades and on-the-job training opportunities.

Station 5: Materials from colleges and universities in Utah, College View Deck and the Admissions Search Kit.

Station 6: Unbound pamphlets and materials from various publishers.

(For a complete listing of materials found in the mobile unit, see Appendix B.)

In order to gain knowledge about himself, each student took the General Aptitude Test Battery (hereafter referred to as the GATB), and Kuder Preference Record, Form CH, which were used to indicate areas of aptitude and interest. While there are other tests which could have been chosen in these areas, the GATB appears particularly relevant because it has been related specifically to occupations (U.S. Dept. of Labor, 1966). The Kuder, while having limitations similar to all interest inventories, is recognized by Buros as adequate for this age group particularly in that it is related to occupational fields. In addition, information concerning achievement in school as it related to career choice was available from the student cumulative records. The student interacted with the counselor in individual and group sessions in order to integrate the information about himself and the world of work. The details of this phase of the program are found in Appendix C.
Another important aspect of the student's career development was the role of the parents. That parents play an important role in the child's vocational development has been established through the research of Norris (1963), Shill (1968), Caplow (1954), Miller and Form (1955). Roe (1956) has suggested that career interests expressed by students are founded in early childhood experiences and relationships to the parents.

Project MACE attempted to involve parents in the following ways:

1. Parent group orientation as to the objectives and purposes of MACE.

2. Individual parent-student conferences with the counselor at which time test information and student career exploration was discussed in detail.

At the orientation and conferences additional parent involvement was encouraged through such means as:

1. Encouraging parents to talk with their children about their own occupations.

2. Helping parents see the role they play in their child's career planning.

3. Encouraging parents to help children investigate and explore new or less familiar occupations as well as the familiar occupations.
To accomplish the entire study, a team consisting of a counselor and occupational instructor was employed. The counselor conducted group and individual conference sessions with students, orientation programs with faculty, students and parents, and consultation sessions with parents. The occupational instructor administered group tests where necessary, recorded student data, and taught students the use of career exploration materials.

In order that the reader might obtain a clearer picture of the study as it evolved in an actual school situation, a sequence schedule for a student population of twenty-four is outlined in Appendix D. Appendix E is supplemental and provides a student experience flow chart including purpose, method and instructional aids.

A frequent criticism of applied research is that the treatment is not reported in enough detail so that others could replicate the study (the details of the program are found in Appendixes B, C, D, E and J). Since the study does imply curriculum development, it was important not to vary the independent variables. To assure that the program remained as constant as possible, a daily log or diary was kept. Also, daily objectives were outlined and strictly followed. The only program deviation occurred when the visitation schedule was changed from two short visits to one longer in duration. Teachers and administrators objected to the greater interruption of classes caused by the two separate visits. Since the change was primarily scheduling and not program in nature, a new schedule was developed while
student involvement remained the same. The first schools visited also experienced the flaws of any new program: such as, equipment failure, lack of communication and confusion.

The format for this study is a research and development model for a new educational program rather than a true experimental design. The treatment was compared with no treatment, or, in essence, the study evaluated something against nothing. The author did not develop criterion referenced tests to measure student progress and there were none available from other sources. Therefore, objective tests were used for the program evaluation.

While research and development has played a major role in the growth of industrial products, it has not held an equal status in the development of educational products. Seldom are curriculum materials or classroom practices based on research findings. Research and development is concerned with identifying a need and then finding one system that meets the performance criteria corresponding to that need.

Since this study is an evaluation of an educational program still in some state of development, it is a formative evaluation. A formative evaluation is utilized during the construction of curriculum. Unfortunately, a systematic approach of this type is seldom used in the classroom or elsewhere for the development of educational programs. Borg (1971) stated that almost none of the curriculum materials and programs in use in
the public schools today have been developed utilizing the research and
development model.

Borg et al. (1970) identified four essential characteristics of the
process for developing a new product. These characteristics are:

1. The stating of specific performance objectives for
   the new product.
2. The use of available research knowledge as a source
   of concepts and materials to be incorporated in the
   new product.
3. The carrying out of rigorous evaluation research to
determine the product's effectiveness in the setting
where it eventually will be used.
4. The use of the results of this evaluation to improve
   the product.

The evaluation-revision cycle is repeated until the product
meets its performance objectives. (Borg, 1970, p. 9-10)

This study then is designed as the preliminary field testing of an
educational program. It is intended to provide a basis for evaluating
curriculum in the area of career development programs.

Data

In order to evaluate the hypotheses, it was necessary to obtain cer-
tain control over the student participation. First and foremost each school
was required to agree to allow the interruption in their schedules so that
each student would receive equal amounts of time and services from the
program (see Appendix D). Each student was required to report to the
mobile facility whenever his group was scheduled. Second, the school
agreed to any and all testing required by the program. Third, and most
difficult of all to obtain, the school agreed to free their counselor for practi-
cum experience in the unit.

To assure that the student experience would not vary from school to
school, the same personnel, i.e. itinerant counselor and instructor, pre-
sented the program. It was assumed that any teacher and counselor team
could be instructed in the details of the study and could repeat it obtaining
the same results.

To test the hypotheses, the data were grouped according to Table 1
in a pre-post-test design.

Table 1. Categories of schools.

<table>
<thead>
<tr>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milford H.S.</td>
<td>Beaver H.S.</td>
</tr>
<tr>
<td>Parowan H.S.</td>
<td>Cedar City Jr. High</td>
</tr>
<tr>
<td>Valley H.S.</td>
<td>Kanab H.S.</td>
</tr>
<tr>
<td>Hurricane H.S.</td>
<td>Woodward Jr. High</td>
</tr>
<tr>
<td>Enterprise H.S.</td>
<td>Wayne H.S.</td>
</tr>
<tr>
<td>Gunnison H.S.</td>
<td>Ephraim Jr. High</td>
</tr>
<tr>
<td>Escalante H.S.</td>
<td>Bryce Valley H.S.</td>
</tr>
<tr>
<td>Panguitch H.S.</td>
<td>Piute H.S.</td>
</tr>
<tr>
<td></td>
<td>South Fremont Jr. High</td>
</tr>
<tr>
<td></td>
<td>Teton High School</td>
</tr>
</tbody>
</table>

Administration

Approximately one week prior to the arrival of the mobile unit, school
personnel (counselor, teacher or principal) administered the pre-tests con-
sisting of three objective instruments. These instruments were the
Vocational Development Inventory Attitude Scale, Occupational Values Inventory and the Self Ranking Inventory of Aptitudes and Interests. After the program was completed, the unit personnel gave the same tests on a post evaluation basis. At each school the order of giving the instruments was rotated in order to eliminate any effects one test might have on the other. Approximate testing time was one hour. Time interval between pre- and post-testing varied according to the size of the school involved. Minimum interval was two weeks. Maximum interval was eight weeks.

When the testing was completed at each school, the data was compiled, coded and prepared for evaluation. Whenever possible, students who were absent from pre- and post-testing were given the opportunity to take the tests. Any test instruments not completed or improperly done were deleted from the total sample. In addition to objective test data, students, parents and teachers were asked to respond to a subjective questionnaire as to their feelings regarding the program. The results of these questionnaires are found in Appendix K and the reader is encouraged to read them, although this is not part of the study being presented in this dissertation.

Instrumentation

Self Ranking Inventory of Aptitudes and Interests

The Self Ranking Inventory of Aptitudes and Interests was used to assess the effects of the program on the student's ability to rank order his
aptitudes and interests. The instrument was comprised of the definitions explaining the aptitudes and interests measured by the Kuder Preference Record and the General Aptitude Test Battery. The student was instructed to estimate his interests and aptitudes by rank ordering them. A copy of the instrument is found in Appendix F. Each student, before the program, ranked the definitions as he thought best described his aptitudes and interests. After the program, when the Kuder and GATB test results had been explained to him, each student would again rank order his aptitudes and interests. The actual tested interests and aptitudes were then compared to determine if a difference existed between pre- and post-rank ordering.

The Vocational Development Inventory Attitude Scale

The Vocational Development Inventory Attitude Scale (VDI) is a recent objective measure of vocational maturity developed by John O. Crites at the University of Iowa. The attitude scale consists of fifty statements such as, "I really can't find any occupation that has much appeal to me," and "There is only one occupation for each person." All statements are related to involvement in the process of selecting a future career, independence in decision making and general orientation to the world of work (Crites, 1965). The instructions asked the student to answer each statement according to whether he agrees or disagrees. A copy of the test is found in Appendix G. The scoring key was constructed empirically by differentiating the responses of fifth through twelfth grades. The scale yields a total vocational maturity
score, which correlates .385 with age and .463 with grade. Studies of the Vocational Maturity Attitude Scale indicate that its internal consistency is in the .60's and .70's and its test-retest stability over a one-year period is .71 (Crites, 1963). At present, over fifty investigations with the Attitude Scale have been completed and about the same number are currently in progress, including project MACE. The VDI is still considered in the research stages and is used for research purposes only. After reviewing the many completed investigations, Crites concluded: (1) that the Attitude Scale is a widely applicable, reliable and "valid" measure of the dispositional factor in the construct of vocational maturity, and (2) that it defines a concept which is empirically significant. Holland (1969) supports him, stating that the VDI provides a simple, practical measure of vocational maturity.

**Occupational Values Inventory**

The Occupational Values Inventory (OVI) is a research instrument designed by J. T. Impellitteri and J. T. Kapes to meet the need for a highly valid and reliable instrument to measure occupational values (Impellitteri and Kapes, 1970). The seven values scales of which it is composed are: (1) Interest and Satisfaction, (2) Advancement, (3) Salary, (4) Prestige, (5) Personal Goal, (6) Preparation and Ability, and (7) Demand and Security.

The instrument was developed by examining eight available occupational values inventories and noting the most common occupational values included within them.
In a personal communication with the writer, the authors advised that research to be published indicates that only values 1, 3, 4, and 7 are mutually independent and have predictive validity. For that reason only values 1, 3, 4, and 7 were used in the study. The OVI yields a numerical score on each value and since the values are not ipsative the scores are considered independently. The inventory consists of thirty-five triads with each value being placed with a unique pair of other values fifteen times. The individual is asked to select the one phrase or statement that would be most important to him in choosing a job, and the statement he would consider least important. The third statement or phrase would be left blank. A copy of the test is found in Appendix H. Impellitteri and Kapes (1970) report the range of reliabilities over the seven scales to be quite narrow, the lowest being .72 and the highest .89. Stability was reported as .62 for boys and .53 for girls. Validity studies are being planned but no data were reported. Sex differences were noted in several studies reported by the authors.

**Statistical Analysis**

The following statistical analyses were used:

1. The data gathered from the Self Ranking Inventory of Aptitudes and Interests were totaled and checked for significance using the "Sign Test," a non-parametric statistic which is used when quantitative measurement is impossible or infeasible.
but in which it is possible to rank with respect to each other
the two members of each pair (Siegel, 1956).

2. The Vocational Development Inventory and the Occupational
Values Inventory data were analyzed using analysis of co-
variance. To adjust for group differences, the pretest
results were used as the covariate.

The basic hypothesis for the study assumed that any change would be
in one direction and therefore a one-tailed design was used. Rejection of the
null hypotheses occurred at the .05 level of significance. The cell numbers
were not equal and it is one reason for using the pre-test as a covariate.
The experimental subjects total 300; whereas, the control subjects total 200.
Because of the disproportionate numbers adjusted means were not obtainable.
The computer program used for the analysis of covariance was the General
Least Squares Program, Covariate Method. The direction of significance
and interaction effects were found through inference using the solution matrix
since adjusted means were not obtainable.

Limitations

The following are seen as limitations in interpreting the results of
this study:

1. Since this was the only study of this nature operating within
the state, there was no way to control for the effect of
personality characteristics of the counselor and instructor.
2. The control group and the experimental group were obtained from different geographical locations. The experimental group came from students in Southern Utah and the control group students from Southeastern Idaho. There is no way of knowing if there are systematic differences between these two groups as a result of geography. In order to control for this limitation to the greatest extent possible, the two schools chosen to participate in the control group were matched with Southern Utah schools for size of town, size of student body, economic resources, major industries in the communities and nearness to college resources and other population centers.

3. Generalizability of results will be limited to rural areas containing schools of similar characteristics as the experimental schools and applicable only to ninth grade.

4. The experimental group schools were not tested nor exposed to the experimental program at the same time.

5. The experimental group was chosen from a stratified random sample of the total population of ninth grade students participating in the program. The control group was the total population of ninth grade students at the control schools.

6. The size of the experimental and control group was different.
7. The VDI and OVI tests may not measure the results of the program--criterion testing may have been more effective.

8. No attempt was made to control existing counseling programs.
CHAPTER IV

RESULTS

The results of this study are reported here in terms of the specific hypotheses. Since three evaluation instruments were used, this section is divided into three parts to correspond with the instruments.

The Vocational Development Inventory

Hypothesis 1 was tested using VDI data. Table 2 is a summary of the data.

**Hypothesis 1.** There is no significant difference between experimental and control groups in terms of career attitudes as measured by the VDI Attitude Scale.

For purposes of testing the hypothesis, the following items were found:

1. On the post test the experimental group scored significantly higher (.001) than the control group.

2. On the post test females had significantly higher scores (.05) than males indicating sex differences on the instrument.

3. There was not a significant interaction.
Table 2. Analysis of VDI data. Analysis of covariance between experimental and control group scores on the VDI Attitude Scale.

<table>
<thead>
<tr>
<th></th>
<th>DF</th>
<th>Mean Sq</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental vs Control</td>
<td>1</td>
<td>728.1</td>
<td>44.4</td>
<td>.001</td>
</tr>
<tr>
<td>Males vs Females</td>
<td>1</td>
<td>90.1</td>
<td>5.49</td>
<td>.05</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>16.0</td>
<td>.98</td>
<td>NS*</td>
</tr>
<tr>
<td>Error</td>
<td>497</td>
<td>16.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NS indicates no significance found in the comparison.

The Occupational Values Inventory

Hypothesis 2 was tested using OVI data. Table 3 is a summary of each comparison. Since each value on the OVI is to be considered independently, the hypothesis will be tested using each value separately.

Hypothesis 2. There is no significant difference between experimental and control groups in terms of career values as measured by the Occupational Values Inventory.

For purposes of testing the hypothesis the following items were found:

Value I: Interest and Satisfaction

1. On the post test the experimental group scored significantly higher (.001) than the control group.

2. On the post test there was no significant difference between males and females.
3. There was no significant interaction.

Value 3: Salary

1. On the post test there was no significant difference between the groups.
2. On the post test males scored significantly higher than females (.01).
3. There was no interaction effect.

Value 4: Prestige

1. On the post test the control group scored significantly higher (.001) than the experimental group.
2. On the post test males scored significantly higher (.05) than females.
3. On the post test there was no interaction effect.

Value 7: Security and Demand

1. On the post test there was no significant difference between the groups.
2. On the post test females scored significantly higher (.05) than males.
3. On the post test there was a significant (.025) interaction effect. The interaction probably resulted from the males scoring lower than the females with the experimental males scoring lowest.
Table 3. Analysis of OVI data. Analysis of covariance between experimental and control group scores on the Occupational Values Inventory, Values scales 1, 3, 4, and 7.

<table>
<thead>
<tr>
<th>Value</th>
<th>DF</th>
<th>Mean Sq</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value 1: Interest and Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental vs Control</td>
<td>1</td>
<td>266.3</td>
<td>37.04</td>
<td>.001</td>
</tr>
<tr>
<td>Male vs Female</td>
<td>1</td>
<td>24.86</td>
<td>3.46</td>
<td>NS*</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>2.02</td>
<td>.281</td>
<td>NS*</td>
</tr>
<tr>
<td>Error</td>
<td>497</td>
<td>7.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value 3: Salary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental vs Control</td>
<td>1</td>
<td>4.058</td>
<td>.29</td>
<td>NS*</td>
</tr>
<tr>
<td>Male vs Female</td>
<td>1</td>
<td>100.18</td>
<td>7.12</td>
<td>.01</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>40.021</td>
<td>2.84</td>
<td>NS*</td>
</tr>
<tr>
<td>Error</td>
<td>497</td>
<td>14.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value 4: Prestige</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Experimental vs Control</td>
<td>1</td>
<td>159.47</td>
<td>19.05</td>
<td>.001</td>
</tr>
<tr>
<td>Male vs Female</td>
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<td>33.40</td>
<td>3.99</td>
<td>.05</td>
</tr>
<tr>
<td>Interaction</td>
<td>1</td>
<td>14.95</td>
<td>1.79</td>
<td>NS*</td>
</tr>
<tr>
<td>Error</td>
<td>497</td>
<td>8.37</td>
<td></td>
<td></td>
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<tr>
<td>Value 7: Security and Demand</td>
<td></td>
<td></td>
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<td>Experimental vs Control</td>
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<td>6.147</td>
<td>.5802</td>
<td>NS*</td>
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<td>Male vs Female</td>
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<td>46.24</td>
<td>4.60</td>
<td>.05</td>
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<td>Interaction</td>
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<td>65.94</td>
<td>6.55</td>
<td>.025</td>
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<td>Error</td>
<td>497</td>
<td>10.06</td>
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</tbody>
</table>

*NS indicates no significance found in the comparison.
The Self Ranking Inventory of Aptitudes and Interests

Hypothesis 3 was tested using this instrument. Table 4 is a complete listing of the comparison results between the matched pairs using each subject as its own control. The pre-test rank order was compared with the actual tested order and a difference computed. The post-test rank order was also compared with the actual tested order and a difference computed. The two differences were then compared. If the larger difference were found on the post test, a negative sign (−) was given the observation. If a smaller difference were found, a positive sign (+) was given. The data are shown as totals and male-female comparison with (z) scores computed for significance. (See Appendix I for a total breakdown by schools.)

Hypothesis 3. There is no difference between the experimental group and control group pre- and post-test estimates of aptitudes and interests as measured by the Self Ranking Inventory of Aptitudes and Interests.

For purposes of testing the hypothesis, the following statistically significant items were found:

1. The total experimental sample pre- post-test differences for both interests and aptitudes were statistically significant beyond the .01 level (see Table 4).

2. A comparison of the (z) scores indicates that the experimental students could estimate their interests (z = 11.39) with
greater accuracy than their estimates of aptitudes

\( z = 9.95 \).

3. The total control sample pre- and post-test differences for both interests and aptitudes were not significantly different.

4. A comparison of \( z \) scores indicates that the students in the control group were also better in estimating their interests than their aptitudes even though significance was not reached.

Table 4. Totals for the Self Ranking Inventory of Aptitudes and Interests.

<table>
<thead>
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<th>Interests</th>
<th>Aptitudes</th>
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<td><strong>Experimental Group</strong></td>
<td></td>
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<tr>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>373</td>
<td>120</td>
</tr>
<tr>
<td>( z = 11.39^* )</td>
<td>( z = 9.95^* )</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
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<tr>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>63</td>
<td>51</td>
</tr>
<tr>
<td>( z = 1.03 )</td>
<td>( z = 0.11 )</td>
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</tbody>
</table>

*Significant beyond the .01 level.
Male and female performance on estimating aptitudes and interests yields the following results (see Table 5):

1. Experimental girls were apparently more able to estimate their actual tested interests and aptitudes than were experimental boys (comparison of z scores)

2. Control group male and female differences were very small.

3. Experimental girls were able to estimate their actual tested interests better than they were their tested aptitudes.

Table 5. Totals for male and female performance on the Self Ranking Inventory of Aptitudes and Interests.

<table>
<thead>
<tr>
<th>Experimental Group</th>
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<td>Boys</td>
<td>Girls</td>
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<td>Aptitudes</td>
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</tr>
<tr>
<td>+ - + -</td>
<td>+ -</td>
</tr>
<tr>
<td>166 82 230 79</td>
<td>17 21</td>
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<td>z = 5.33*</td>
<td>z = .49</td>
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<tr>
<td>+ - + -</td>
<td>+ -</td>
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<tr>
<td>136 59 237 61</td>
<td>26 20</td>
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<td>z = 5.51*</td>
<td>z = 10.19*</td>
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*Significant beyond .01 level.
CHAPTER V
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Since the last section was devoted to an observation of the data, this section purports to summarize and draw implications and conclusions. To facilitate reading, the conclusions will be divided into the categories represented by the hypotheses.

Summary Statements about the Hypotheses

Hypothesis 1. There is no difference between experimental and control groups in terms of career attitudes as measured by the Vocational Development Inventory, Attitude Scale.

The hypothesis is rejected for the following reasons:
1. Statistically, the experimental group was significantly different (.001) from the control group.
2. Females had significantly higher scores (.05) than males.

The experimental program apparently was successful in helping the experimental students achieve a greater degree of maturity of attitudes than those expressed by the control group. This would indicate that one could expect the students in the experimental group to be more mature (as measured by the attitude scale) in their feelings about making career decisions, in work values, in independence, in decision making, in mature preference
for career choice factors, and in conception of the choice process. This finding is in accord with the research reported in the review of literature in that the acquisition and development of mature career attitudes can be facilitated with adequate designs and treatment conditions which project MACE apparently met. The sex differences found between the groups does not follow that which was reported by Crites (1969). His data indicated small and not significant sex differences on the variable of career attitudes. In this study females had higher scores than males in both control and experimental groups. Why females in this study scored higher than males is a question which remains unanswered.

**Hypothesis 2.** There will be no significant difference between experimental and control groups in terms of career values as measured by the Occupational Values Inventory.

Whether the hypothesis is accepted or rejected is found under the results for the four values which follow.

**Value 1: Interest and Satisfaction.**

The hypothesis for this value must be rejected. The experimental group scored significantly higher (.001) than the control group, indicating that the experimental students felt that one should enjoy work, be happy at it and fulfill oneself by doing it to a greater degree than the control students.

That there were no significant sex differences for this value does vary from the research reported by Impellitteri and Kapes (1970). They
found that girls tend to score higher on this value than do boys. Since there was no interaction effect, it would appear that this value exists in relatively the same degree in both sexes, at least for the students involved in this study.

Value 3: Salary

The hypothesis for this value must be accepted. Both groups apparently felt that salary was or was not important to the same degree. The experimental program did not make a difference in terms of this value. There was a sex difference for the value, this favoring the males, who scored significantly (.01) higher than the females. This result is supported by the research cited by Impellitteri and Kapes (1970), who also found that the boys score higher than girls on the salary value.

Value 4: Prestige

The hypothesis for this value is rejected. The control group scored significantly higher (.001) than the experimental group. Prestige indicates that one is impressed by the respectability attached to the work, can earn recognition from it, and desires the feeling of importance that goes with it. The experimental group apparently did not feel that this value was as important as did the control group. Since prestige may have a negative connotation in career counseling, this may be a positive result of the program.

There was also a sex difference noted in the analysis. Males scored significantly higher (.05) than females on the value. This is also not in accord with the studies reviewed by Impellitteri and Kapes who found that
girls tend to score higher on prestige. Perhaps this is a cultural factor; at any rate, the reason for the difference remains unanswered.

Value 7: Security and Demand

The hypothesis for this value is accepted. There was no significant difference between experimental and control groups. According to Impellitteri's definition, security and demand imply that one can obtain employment in the work, workers are needed, and there will always be openings in it. This value had similar meaning for the groups as a whole; however, there were sex differences and an interaction effect which tend to confound the results. Females scored significantly higher than males, with the experimental males scoring lowest of all. The interaction effect apparently occurred because the experimental males scored significantly different from the other groups and at the same moment, females scored higher than males, making the difference even greater. Impellitteri and Kapes found no sex differences being reported for this value, a finding not supported by the results of this study. Apparently experimental males did not feel that this value was as important as did the other male-female groups. Impellitteri and Kapes (1970) do report that college aspiring students placed significantly less value upon security than those who were not. Perhaps the experimental male group was made up of a considerable number of such students, thereby creating the difference.
Hypothesis 3. There is no difference between the experimental group and control group pre- and post-test estimates of aptitudes and interests as measured by the Self Ranking Inventory of Aptitudes and Interests.

The hypothesis is rejected for the following reasons:

1. The experimental group pre- and post-test differences for both interests and aptitudes were statistically significant (.01).

2. The control group pre- and post-test differences for both interests and aptitudes were not significantly different.

It would appear from the results that the program was definitely successful in helping the experimental students become more aware of their tested aptitudes and interests. While a control group was unnecessary, since each student was in essence his own control, it is still noteworthy to indicate that no significance was obtained when the control students ranked their interest and aptitudes on a pre- and post-test basis. In comparing z scores for the experimental group, it appears that the experimental students could estimate their interests with greater accuracy than their estimates of aptitudes. O'Hara (1959) in a correlation study of self estimate and test estimate, found similar results and concluded that aptitude is relatively poorly perceived throughout grades 9-12. The MACE data also indicate that interests are better understood and therefore easier to estimate than aptitudes. There were also sex differences in the analysis. Experimental girls were more
able to estimate their actual tested interests and aptitudes than were experimental boys. The girls were also more able to estimate their tested interests than they were their tested aptitudes. This seems to indicate that females profited more from the experimental program than did the males relative to the variable.

Conclusions

The following conclusions were drawn from data generated during the evaluation of the study.

1. The data indicate that the study apparently did facilitate career attitude development in the ninth grade students involved in the project.

2. The data in this study indicate that the treatment did facilitate student awareness of his aptitudes and interests.

3. The treatment apparently influenced students to choose interest and satisfaction as career values.

4. The treatment influenced many students to reject prestige as a career value. The writer feels that in terms of career counseling this finding may have a positive meaning. There are other values in career choice which have much more relevance to job success than prestige does.

5. The treatment had no apparent effect on the career values of salary, security and demand.

6. The data reflected that experimental females made greater gains in understanding aptitudes and interests than did experimental males.
7. Apparently all groups could more accurately estimate their interests than they could their aptitudes. One might conclude that interests are better understood and related to oneself than are aptitudes.

8. Sex differences were found on the VDI instrument, the OVI scales and on the Self Ranking Inventory of Aptitudes and Interests.

9. Subjectively, the comments collected from various schools indicate several situations where the treatment was instrumental in affecting a change. One specific instance concerned a potential dropout who, after treatment, indicated formulation of new goals and indicated a desire to complete high school training. Change was attributed to finding out about specific aptitudes and how they relate to job success. A tentative conclusion might be that the study was of great personal use to certain select individuals.

10. The subjective comments collected from students, faculty and parents indicate that the study generated positive opinions and an expressed desire for continuation of the program. It is recommended that each reader take time to read through the subjective questionnaires located in Appendix K.

Recommendations

The following recommendations are geared directly toward the continuance of the study and are reported simply for consideration.
1. The program should be continued in schools needing the service on a continuous basis since its value has been demonstrated.

2. Attention should be given to choosing control and experimental samples from the same school on a random basis.

3. A replication of this study using urban schools seems worthwhile, especially a study comparing the treatment conducted in the mobile facility versus the same program in a classroom setting.

4. A need exists to vary independent teaching variables to determine which are most effective.

5. Since this study dealt primarily with the immediate results of the treatment, the long range implications remain only a speculation; however, a study is presently being planned as a follow up to this program which should lend some information as to the long range effects.
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Cox, S. G. 1968. "A study of relationships between student scores on various predictor measures and vocational success of students who were followed up one and five years following training in selected private trade, technical, and business schools." Unpublished doctoral dissertation, University of Iowa.


Mortimer, William E. 1965. "Programs of guidance and counseling as they relate to young people and their preparation for work." Department of Industrial and Technical Education, Engineering Experiment Station, Utah State University, Logan, Utah.


Appendix A

List of Participating Experimental and Control Schools

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<tr>
<th>Experimental Schools</th>
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<td>Beaver High School</td>
<td>50</td>
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<td>Parowan High School</td>
<td>95</td>
</tr>
<tr>
<td>Cedar City Junior High School</td>
<td>216</td>
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<td>Valley High School</td>
<td>20</td>
</tr>
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<td>Kanab High School</td>
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<td>Hurricane High School</td>
<td>72</td>
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<td>Woodward Junior High School</td>
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<td>Gunnison High School</td>
<td>60</td>
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<td>25</td>
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<td>18</td>
</tr>
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<td>Panguitch High School</td>
<td>36</td>
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<td>Piute High School</td>
<td>26</td>
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<table>
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<td>130</td>
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<td>Teton High School</td>
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Appendix B

Educational Materials for Project MACE

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</tr>
<tr>
<td></td>
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<td>Catalogs from the Utah Technical</td>
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<td>College at Provo</td>
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<tr>
<td>&quot;United Business Schools Association 1969 Directory of Business Schools&quot;</td>
<td>United Business Schools Assoc.&lt;br&gt;1101 Seventeen Street N.W.&lt;br&gt;Washington, D.C. 20036</td>
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<td></td>
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<td>Pamphlets: &quot;Careers for Women in Busi...&quot;</td>
<td>Stevens Heneger</td>
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<td>Leaflets: The Nancy Taylor Fashion Merchandising Course</td>
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<td></td>
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<tr>
<td>Booklet: &quot;Vocational Scholarship&quot;</td>
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<tr>
<td>Dr. Harvey Hirschi</td>
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### Appendix B (Cont.)

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<td>Private Career Training Facilities in Utah, Russ Whitaker</td>
<td>Russell Whitaker University Club Building SLC, Utah</td>
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<td>Weber State School of Technology 3750 Harrison Avenue Ogden, Utah 84403</td>
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<td>2 BYU Catalogs</td>
<td>Registrar, BYU, Provo, Ut. 84601</td>
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<tr>
<td>2 BYU Bulletins</td>
<td>Registrar, BYU, Provo, Ut. 84601</td>
</tr>
<tr>
<td>4 College of Southern Utah</td>
<td>Cedar City, Utah 84720</td>
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<tr>
<td>2 College of Eastern Utah</td>
<td>Registrar, Price, Utah</td>
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<td>2 Westminster College</td>
<td>1840 S. 13th, Westminster, SLC, Ut.</td>
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<td>2 Utah State University</td>
<td>Registrar, USU, Logan, Ut. 84321</td>
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<td>2 University of Utah</td>
<td>U. of U., SLC, Utah</td>
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<td>2 Dixie College</td>
<td>St. George, Utah</td>
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<tr>
<td>2 Weber State College</td>
<td>3750 Harrison Blvd., Ogden, Utah</td>
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Appendix C

Student Counseling Experience

Group Counseling

Objective: To explain objectives of the program and interpret GATB and Kuder scores to students.

Method: Each student was given a handout on which the results of the Kuder and GATB were prerecorded. Also information explaining the Kuder and the occupational aptitude patterns coinciding with their GATB scores was given. The counselor then explained how the test information and the handouts could assist the students in learning to make realistic career decisions.

Individual Counseling

Objective: To assist students in understanding the career decision making process.

Method: During career exploration hours three, four and five, each student was contacted by the counselor. The counselor and student jointly discussed the jobs the student was researching in terms of the student's aptitudes, interests and achievement. The aptitudes needed for success, according to the employment office, were plotted on a graph. By doing this the student was made aware of his strengths and weaknesses (aptitude wise) and, in case of large differences, alternative decisions were discussed.
Appendix C (Cont.)

Parent Conferences

Objective: To relate information about the student's test results and participation in program to parents.

Method: After student participation was completed an invitation was extended to each student's parents to visit with the counselor. At these meetings test results were interpreted and related to the student's job exploration. The student was also present at this session.
### Appendix D

**Project MACE Schedule for a Student Population of Twenty-Four or Two Groups of Twelve**

<table>
<thead>
<tr>
<th>Time</th>
<th>Counselor</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1st Day)</td>
<td>Arrangements for faculty orientation</td>
<td>Prepares trailer for Student Use</td>
</tr>
<tr>
<td></td>
<td>Physical arrangements for trailer</td>
<td>Sets out occupational materials</td>
</tr>
<tr>
<td></td>
<td>Room arrangements for orientation and testing</td>
<td>Prepares projectors</td>
</tr>
<tr>
<td></td>
<td>Arrangements for parent orientation</td>
<td>Prepares handouts</td>
</tr>
<tr>
<td>1st period</td>
<td>Make-up Kuder Tests</td>
<td>Picks up profile sheets</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>Prepares list of students who have not had testing (GATB &amp; Kuder)</td>
</tr>
<tr>
<td>2nd &amp; 3rd periods</td>
<td></td>
<td>Schedules appts. for testing</td>
</tr>
<tr>
<td></td>
<td>Faculty orientation</td>
<td>Coordinates scheduling for student groups</td>
</tr>
<tr>
<td>4th period</td>
<td>Conducts student orientation</td>
<td>Lunch</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>Prepares materials for Group Career Exploration</td>
</tr>
<tr>
<td>5th period</td>
<td>Test interpretation 1st group (GATB &amp; Kuder)</td>
<td>Supervises Career Exploration</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>1st group 1st hour</td>
</tr>
<tr>
<td>6th period</td>
<td>Test evaluation and interpretation</td>
<td>Faculty orientation</td>
</tr>
<tr>
<td></td>
<td>2nd group (GATB &amp; Kuder)</td>
<td>Parent orientation</td>
</tr>
<tr>
<td>Before school or After school</td>
<td>Faculty orientation</td>
<td>Parent orientation</td>
</tr>
<tr>
<td>Evening</td>
<td>Parent orientation</td>
<td>Scheduling parent conferences</td>
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## Appendix D (Cont.)

<table>
<thead>
<tr>
<th>Time</th>
<th>Counselor</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2nd Day)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st period</td>
<td>Individual counseling</td>
<td>Career exploration</td>
</tr>
<tr>
<td>2nd period</td>
<td>Individual counseling</td>
<td>1st group 2nd hour</td>
</tr>
<tr>
<td>3rd period</td>
<td>Individual counseling</td>
<td>Career exploration</td>
</tr>
<tr>
<td>4th period</td>
<td>Individual counseling</td>
<td>2nd group 1st hour</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>2nd group 2nd hour</td>
</tr>
<tr>
<td>5th period</td>
<td>Individual counseling</td>
<td>Career exploration</td>
</tr>
<tr>
<td>6th period</td>
<td>Individual counseling</td>
<td>1st group 3rd hour</td>
</tr>
<tr>
<td>(3rd day)</td>
<td></td>
<td></td>
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<tr>
<td>1st period</td>
<td>Individual counseling</td>
<td>Career exploration</td>
</tr>
<tr>
<td>2nd period</td>
<td>Individual counseling</td>
<td>2nd group 4th hour</td>
</tr>
<tr>
<td>3rd period</td>
<td>Individual counseling</td>
<td>Career exploration</td>
</tr>
<tr>
<td>4th period</td>
<td>Individual counseling</td>
<td>1st group 5th hour</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>2nd group 5th hour</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Further supervision of individual student career exploration. Students will sign up for additional use as desired.</td>
</tr>
<tr>
<td>5th period</td>
<td>Begin Parent Conferences</td>
<td>Individual career exploration - optional</td>
</tr>
<tr>
<td>6th period</td>
<td>Parent Conferences</td>
<td>Individual career exploration - optional</td>
</tr>
<tr>
<td>Evening</td>
<td>Parent Conferences</td>
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### Appendix D (Cont.)

<table>
<thead>
<tr>
<th>Time</th>
<th>Counselor</th>
<th>Instructor</th>
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<tr>
<td>(4th day)</td>
<td></td>
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<tr>
<td>1st period</td>
<td>Parent Conferences</td>
<td>Receptionist for visiting parents - Final filing of student data</td>
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<tr>
<td>2nd period</td>
<td>Parent Conferences</td>
<td>Same</td>
</tr>
<tr>
<td>3rd period</td>
<td>Parent Conferences</td>
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</tr>
<tr>
<td>4th period</td>
<td>Parent Conferences</td>
<td>Same</td>
</tr>
<tr>
<td>5th &amp; 6th periods</td>
<td>Parent Conferences</td>
<td>Prepares trailer for moving to next location</td>
</tr>
</tbody>
</table>

This schedule can easily be adjusted for seven-period school days and larger student populations. The student career exploration experience is outlined below.

**CAREER EXPLORATION 1st Hour**

**Objective:** Acquaint students with the materials on the mobile van and orient them with the procedure used in career exploration.

**Method:** To begin, the filmstrip "The World of Work" was shown.

The instructor then conducted a guided tour of the mobile van and gave the students (12 in a group) a practical demonstration of the use and application of the available materials. Remaining time was spent using task worksheets. In doing the worksheets the students were divided into work groups of 2 or 3. The completed worksheets were given points and the winning group rewarded.
Appendix D (Cont.)

with a prize. The worksheet questions were based on the stations located in the unit. (See Design section of study. Also see Appendix J for samples of worksheets.)

CAREER EXPLORATION 2nd Hour

**Objective:** Practical experience with career exploration materials.

**Method:** The students continued working with the first hour worksheets until every work group had visited each station. Those groups finishing early were given additional tasks such as listing jobs related to their three highest Kuder interest areas or answering questions contained in a student career worksheet.

CAREER EXPLORATION 2nd Hour

**Objective:** To allow each student the opportunity to explore occupations in which he is interested.

**Method:** The students were given a worksheet (see Appendix J) upon which they listed two occupations in which they were interested. The remainder of the period was spent moving from one station to another answering general and specific questions pertaining to the occupations they listed.

CAREER EXPLORATION 4th Hour

**Objective:** To allow each student the opportunity to explore the occupations in which he is interested.
Appendix D (Cont.)

**Method:** The students continued working on the Tentative Career Choice Questionnaire. All students were encouraged to investigate more jobs than the required two. Those finishing early were asked to complete the questions in the student vocational evaluation worksheet.

**CAREER EXPLORATION 5th Hour (Not mandatory)**

**Objective:** To provide interested students additional time for unstructured career exploration.

**Method:** Any student desiring additional time for Career Exploration was permitted to sign up for an extra hour or period. This time was under the supervision of the Instructor who provided help if needed.
Appendix E

MACE Student Experience Flow Chart

Step I

Purpose: To motivate the student

Method:
1. Large group orientation
2. Verbal introduction of program to large group

Instructional Aids:
1. Film: "Where the Action Is" (See Appendix B.)

Step II - Hour 1: Group Counseling

Purpose: To begin helping the student understand himself as he related to the World of Work

Method:
1. Group interpretation of Kuder and GATB

Instructional Aids:
1. Profile Sheet
2. Employment Service handout on Occupational Aptitude Patterns
3. Charts on Kuder and GATB

Step III - Hour 1: Career Exploration

Purpose: Remotivation and developing career seeking skills

Method:
1. Filmstrip: "The World of Work" (See Appendix B.)
2. Lecture and station tasks

Instructional Aids:
1. "An Introduction to Vocations: The World of Work" (See Appendix B.)
2. Station task prints

Step IV - Hour 2: Career Exploration

Purpose:
1. Developing information seeking skills
2. Self learning as related to goals

Method:
1. Continuing station tasks
2. Individual counseling

Instructional Aids:
1. Station task prints
2. Profile sheets and Employment Service OAP handouts

Step V - Hours 3, 4 and 5: Career Exploration

Purpose:
1. Practice in tentative career decision making
2. Self learning continued with those individuals not yet seen in individual counseling

Method:
1. Seeking career information related to personal desire
2. Individual counseling

Instructional Aids:
1. Career Study Sheet
2. Profile sheet and Employment Service OAP handouts
Step VI - Parent Conferences

Purpose: To relate information about students' test results and participation in program to parents

Method: Individual family conferences

Instructional Aids:

1. Profile sheets and Employment Service OAP handouts
2. Student worksheets
Appendix F

Self Ranking Inventory of Aptitudes and Interests

Below are listed different types of abilities followed by a definition. Place the number "1" in the blank to the left of the ability you feel is your best ability, 2 by the ability you feel is your next best ability and continue in the same manner until you have rated each of the abilities as they relate to you. Thus the ability you feel is your best will be marked 1; the ability which you feel you least have will be marked 6; the second best 2, the second least 5, etc.

V - VERBAL APTITUDE. Ability to comprehend language and to use words effectively.

N - NUMERICAL. Ability to perform arithmetic operations quickly and accurately.

S - SPATIAL APTITUDE. Ability to visualize a constructed, three-dimensional object from a flat, two-dimensional pattern.

P - FORM PERCEPTION. Ability to make visual comparisons and discriminations and to see slight differences in shapes and shadings of figures and widths and lengths of lines.

Q - CLERICAL PERCEPTION. Ability to perceive pertinent detail in verbal or tabular material, to observe differences in copy, and to proofread words and numbers.

K - MOTOR COORDINATION. Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed.
Appendix F (Cont.)

Below are listed different types of interests followed by a definition. Place the number 1 in the blank to the left by the interest which most coincides with your greatest interest, 2 by the interest that is second highest for you and so on until you have all of the interests in terms of the greatest to the least interest for you. Thus your greatest interest will be marked 1, the least 9, the second best 2, the second least 8, etc.

____ MECHANICAL interest means you like to work with machines and tools. Jobs in this area include automobile repairmen, watchmakers, drill press operators, and engineers.

____ COMPUTATIONAL interest means you like to work with numbers. A high score in this area suggests that you might like such jobs as bookkeeper, accountant, or bank teller.

____ SCIENTIFIC interest means that you like to discover new facts and solve problems. Doctors, chemists, nurses, engineers, radio repairmen, aviators, and dietitians usually have high scientific interests.

____ PERSUASIVE interest means that you like to meet and deal with people and to promote projects or things to sell. Most actors, politicians, radio announcers, authors, salesmen, and store clerks have high persuasive interests.

____ ARTISTIC interest means you like to do creative work with your hands. It is usually work that has "eye appeal" involving attractive design, color, and materials. Painters, sculptors, architects, dress designers, hair-dressers, and interior decorators all do "artistic" work.

____ LITERARY interest shows that you like to read and write. Literary jobs include novelists, historians, teacher, actor, news reporter, editor, drama critic, librarian, and book reviewer.

____ MUSICAL interest shows you like going to concerts, playing instruments, singing, or reading about music and musicians.

____ SOCIAL SERVICE interest indicates a preference for helping people. Nurses, Boy or Girl Scout leaders, vocational counselors, tutors, ministers, personnel workers, social workers, and hospital attendants spend much of their time helping other people.

____ CLERICAL interest means you like office work that requires precision and accuracy. Jobs such as bookkeeper, accountant, file clerk, salesclerk, secretary, statistician, and traffic manager fall in this area.
Appendix G

Vocational Development Inventory Attitude Scale

John O. Crites, Ph.D.
The University of Utah

DIRECTIONS:

There are a number of statements about occupational choice and work listed in this booklet. Occupational choice means the kind of job or work that you think you will probably be doing when you finish all of your schooling.

If you agree or mostly agree with the statement, use your pencil to blacken the circle in the column headed T on the separate answer sheet. If you disagree or mostly disagree with the statement, blacken the circle in the column headed F on the answer sheet. Be sure your marks are heavy and black. Erase completely any answer you wish to change.

Form IV: For Research Purposes Only
Appendix G (Cont.)

PART I

1. Once you choose a job, you can't choose another one.
2. In order to choose a job, you need to know what kind of person you are.
3. I plan to follow the line of work my parents suggest.
4. I guess everybody has to go to work sooner or later, but I don't look forward to it.
5. A person can do any kind of work he wants as long as he tries hard.
6. I'm not going to worry about choosing an occupation until I'm out of school.
7. Your job is important because it determines how much you can earn.
8. Work is worthwhile mainly because it lets you buy the things you want.
9. The greatest appeal of a job to me is the opportunity it provides for getting ahead.
10. I often daydream about what I want to be, but I really haven't chosen a line of work yet.
11. Knowing what you are good at is more important than knowing what you like in choosing an occupation.
12. Your parents probably know better than anybody which occupation you should enter.
13. If I can just help others in my work, I'll be happy.
14. Work is dull and unpleasant.
15. Everyone seems to tell me something different, until now I don't know which kind of work to choose.
16. I don't know how to go about getting into the kind of work I want to do.
17. Why try to decide upon a job when the future is so uncertain.
18. I spend a lot of time wishing I could do work that I know I cannot ever possibly do.
19. I don't know what courses I should take in school.
20. It's probably just as easy to be successful in one occupation as it is in another.
Appendix G (Cont.)

21. By the time you are 15, you should have your mind pretty well made up about the occupation you intend to enter.

22. There are so many things to consider in choosing an occupation, it is hard to make a decision.

23. I seldom think about the job I want to enter.

24. It doesn't matter which job you choose as long as it pays well.

25. You can't go very far wrong by following your parents' advice about which job to choose.

26. Working is much like going to school.

27. I am having difficulty in preparing myself for the work I want to do.

28. I know very little about the requirements of jobs.

29. The job I choose has to give me plenty of freedom to do what I want.

30. The best thing to do is to try out several jobs, and then choose the one you like best.

31. There is only one occupation for each person.

32. Whether you are interested in a particular kind of work is not as important as whether you can do it.

33. I can't understand how some people can be so set about what they want to do.

34. As long as I can remember I've known what kind of work I want to do.

35. I want to really accomplish something in my work--to make a great discovery or earn lots of money or help a great number of people.

36. You get into an occupation mostly by chance.

37. It's who you know, not what you know, that's important in a job.

38. When it comes to choosing a job, I'll make up my own mind.

39. Choose an occupation which gives you a chance to help others.

40. When I am trying to study, I often find myself daydreaming about what it will be like when I start working.

41. I have little or no idea of what working will be like.

42. Choose an occupation, then plan how to enter it.

43. I really can't find any work that has much appeal to me.
Appendix G (Cont.)

44. Choose a job in which you can someday become famous.

45. If you have some doubts about what you want to do, ask your parents or friends for advice and suggestions.

46. Choose a job which allows you to do what you believe in.

47. The most important part of work is the pleasure which comes from doing it.

48. I keep changing my occupational choice.

49. As far as choosing an occupation is concerned, something will come along sooner or later.

50. Why worry about choosing a job when you don't have anything to say about it anyway.
Appendix H

Occupational Values Inventory
The Pennsylvania State University
Department of Vocational Education

Directions: In each group of three statements mark one most important and one least important. Leave one statement blank.

MOST IMPORTANT = MI     LEAST IMPORTANT = LI

AT THIS TIME I WOULD CHOOSE A JOB BECAUSE:

1. I can lose myself in this kind of work.
   There is a good possibility of elevation to top jobs.
   I can make a lot of money in this work.

2. This work is what I've planned for.
   I have the educational preparation for the job.
   There is a labor shortage in this field.

3. I like the possible earnings from the job.
   People in this work are held in high regard.
   It has been my lifelong intention to get into this field.

4. There are many possibilities for promotions.
   I have the technical know-how to do the work.
   There will always be a demand in this area of work.

5. There is an opportunity to do the things I've always wanted to do.
   I like working in a job environment that is attractive.
   The "size of the paycheck" interests me most.
Appendix H (Cont.)

6. There is honor associated with the work.
   I can be sure of a job even in hard times.
   I like the opportunities for advancement.

7. I have the potential ability for doing this work.
   I can make a good living.
   This job gives me a purpose in life.

8. There is a lack of good people in this field.
   I can move upward quickly in this job.
   There is personal satisfaction for me in doing this work.

9. It's a position of power and superiority.
   The job is a personal objective for me.
   I have the proper skills for this job.

10. The work is stimulating to me.
    I can become financially well-off.
    Workers are wanted for this job.

11. There are higher positions which can be attained later.
    The job gives me a chance to be somebody.
    I am able to meet the requirements.

12. There is a shortage of workers in this field.
    I have an interest in the work.
    The job is my own choice.

13. There is considerable income I can receive from the job.
    I can rise in rank within this field.
    I want the feeling of importance that goes with the job.
Appendix H (Cont.)

14. It's an opportunity to use my training and background.  
   It's the one job I'm looking forward to.  
   The work is pleasant for me.

15. I can go to greater heights in this career.  
   Employers are requesting workers to enter this field.  
   The salary allows me to buy many of the things I've always wanted.

16. People on this job are admired by others.  
   I am happy doing this work.  
   The job is within my reach.

17. The job fits into my plan of life.  
   There is a short supply of workers for this job.  
   This career offers openings for better jobs in the future.

18. The pay rate for the workers in this job is high.  
   I have experience with this work.  
   The job gives me a position of respect.

19. "I like the work."  
   The work would be a challenge to me.  
   I can progress within the career.

20. Employers want workers with training in this kind of work.  
   It's an impressive and respected job.  
   The job has steady raises in pay.

21. My capabilities are in this field.  
   There are opportunities to get ahead in this field.  
   I prefer doing this kind of work.
Appendix H (Cont.)

22. It provides a way of life that is right for me.
   I appreciate the money I can make from the job.
   There are many job openings in this field.

23. The job has a reputation of importance.
   The work is exciting.
   I can reach higher levels in this field.

24. I like the financial rewards of the job.
   There is a demand for workers in this field.
   I am naturally suited to the work.

25. It's what I'd like to do as my life's work.
   This job can lead to better jobs.
   The work gives me a feeling of importance.

26. The work agrees with me.
   I am prepared for it and have the right training.
   The wages paid are good.

27. Workers are needed in this field.
   People in this career are looked up to.
   I can fulfill my ambitions in this work.

28. There is potential for growth within this career.
   I will have more money doing this work.
   I can qualify for the job.

29. This work is personally satisfying.
   It's what I've been shooting for.
   This job commands the respect of others.
30. I am "good at" this kind of work.
   Employers are looking for workers for this job.
   There is contentment for me in doing this work.

31. I like the pay scale for the job.
   This job provides opportunities to improve myself.
   It is a job I've always wanted to do.

32. This type of work is well thought of by others.
   I have the ability to do the work.
   There are not enough available workers for this job.

33. It's a job that I can give much attention to.
   There is a good beginning salary offered.
   I like the high regard which the job carries with it.

34. I can advance to positions of leadership in this career.
   It's my ideal for a life's career.
   My talents lie in this area.

35. There is a necessity for workers in this area.
   The work brings with it a lot of prestige.
   I enjoy doing this kind of work.
Appendix H (Cont.)

PLEASE RANK THE FOLLOWING SEVEN FACTORS BASED UPON THEIR IMPORTANCE TO YOU IN SELECTING A JOB. BLACKEN IN THE SPACE MARKED 1 FOR THE MOST IMPORTANT FACTOR, THE SPACE MARKED 2 FOR THE NEXT MOST IMPORTANT FACTOR AND SO ON.

INTEREST AND SATISFACTION
ADVANCEMENT
SALARY
PRESTIGE
PERSONAL GOAL
PREPARATION AND ABILITY
DEMAND
### Appendix I

**Self Ranking Inventory of Aptitudes and Interests**

**EXPERIMENTAL SCHOOLS**

**ESTIMATE RESULTS BY SCHOOL**

<table>
<thead>
<tr>
<th>School</th>
<th>Boys Kuder</th>
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Appendix J

Worksheets for Career Exploration

Second Hour

Choose one of the listed occupations and answer the following questions about it. The answers will be found at the different areas you will visit as designated.

1. Electronic Technician
2. Nurse
3. Secretary
4. Teacher
5. Doctor
6. Automobile Mechanic
7. Carpenter
8. Engineer

Questions to be answered in Area 1:

1. What are the different kinds of work open to students who have specialized in this area?

2. Does the job require college training? If so, how much?

3. Would you work mostly indoors or outdoors?

4. What would your yearly income be at the beginning of your career?

5. Does the occupation require licensing or certification of some sort?

Questions to be answered in Area 2:

1. Would you work alone or with others?

2. What would your yearly income be at the beginning of your career?

3. How many hours a week would you work in this job? Would you also work nights?
Appendix J (Cont.)

Questions to be answered in Area 3:
1. List a few colleges or training institutions outside of Utah which offer training in the occupational area.
2. Do you need a bachelor's degree? Will an advanced degree be an asset to your career?
3. How much will it cost to attend a year of school?
4. Are there special scholarships for students who wish to study for this career?

Questions to be answered in Area 4:
1. Does the job involve a lot of thinking and planning?
2. What are the approximate number of workers in the field currently?
3. What is the outlook for this type of work in the state of Utah?

Questions to be answered in Area 5:
1. Are training institutions available in the state of Utah? List several of them.
2. What is the major course of study you would pursue?
3. Do you need a bachelor's degree? Will an advanced degree be an asset to your career?
4. How much will it cost to attend a year of school?
5. Are there special scholarships for students who wish to study for this career?

Questions to be answered in Area 6:
1. Do you need to be able to work well with your hands?
2. What would your yearly income be at the beginning of your career?
3. Does the occupation require licensing or certification of some sort?
4. What are some of the disadvantages with this job? (Such as health hazards, poor hours, disappointment, repetitive tedious work, etc.)
5. Will there still be plenty of jobs in this field when you are ready to go to work, or is it a job that is becoming obsolete because of automation or other factors?
Appendix J (Cont.)

Third and fourth hours

I. Career Exploration Questions

A. List two occupations in which you are interested.
   1.
   2.

B. As you move through the various stations in the mobile van, use the available materials to answer the following questions concerning your two occupational choices.
   1. What are the principle duties in which you would be involved?
      Choice 1.
      Choice 2.
   2. Are opportunities available for advancement and what must you do to qualify?
      Choice 1.
      Choice 2.
   3. How many people are employed nationally in these professions?
      Choice 1.
      Choice 2.
   4. How many people are employed locally in these professions?
      Choice 1.
      Choice 2.
   5. What is the outlook nationally for future employment in these professions?
      Choice 1.
      Choice 2.
   6. What is the outlook locally for future employment in these professions?
      Choice 1.
      Choice 2.
Appendix J (Cont.)

7. What would your earnings be?
   Choice 1.
   Choice 2.

8. What would your hours be?
   Choice 1.
   Choice 2.

9. Check the boxes of the following chart that apply to your choices.

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10. What are some of the special abilities you need to possess? (Such as academic, mechanical, artistic, etc.)

11. Do your choices or one of your choices require college education? If so do the colleges in your area have the necessary programs? List the colleges and universities which have the program and the tuition costs for one year.
   Choice 1.
   Choice 2.

12. Do your choices (or one of your choices) require a trade or technical education? Are such schools available in the state? List them and the cost of attending for one year.
   Choice 1.
   Choice 2.

13. Are there scholarships or loans available for students who wish to study for this career?
   Choice 1.
   Choice 2.
14. Is special licensing or certification required? What about joining a union or association?
   Choice 1.
   Choice 2.

15. What are some of the disadvantages connected with this job?
   Choice 1.
   Choice 2.

16. Will there still be plenty of jobs in these fields when you are ready to go to work, or are they jobs that are becoming obsolete because of automation or other factors?
   Choice 1.
   Choice 2.

II. Comparison with Student Profile Sheet

A. By utilizing your student profile sheets in conjunction with the occupational information you possess answer the following questions:

1. List the aptitudes in which you scored highest on the GATB. List the aptitudes which your occupational choices require. Compare the three lists. Do your aptitudes match those which the job requires?

   GATB        Choice 1        Choice 2

2. List the occupational areas in which your interests and preferences most closely matched those of people in the profession (Kuder). Do your occupational choices fall into these same areas?

   Kuder        Choice 1

   _______        Choice 2
   _______
Appendix J (Cont.)

3. Using the above information rate yourself on the following scale. Circle the number which best describes your occupational choices in relation to your aptitudes and interests.

1. In most areas my choices match my interests and aptitudes.
2. One of my choices matches my aptitudes and interests.
3. In some areas both my choices match my aptitudes and interests.
4. In some areas one of my choices matches my aptitudes and interests.
5. None of my choices matches my aptitudes and interests.

4. List some of the reasons why you feel that you did or did not make good occupational choices.
Appendix K

Subjective Data

During the course of the program all participants i.e. students, parents and faculty, were asked to respond to subjective questions concerning their feelings about the program. Since questionnaire data is subject to all sorts of response bias and very little control was exerted in obtaining the data, the results were not reported in the body of the paper. However, such data is helpful within its limitations in gaining feedback about the program. Rather than try to explain each questionnaire the results have been tallied and the totals appear next to the question. In many instances the subjects were asked to comment on the question. Whenever possible the comments are reported in full.

PROJECT MACE RESULTS:

Subjective Questionnaire

I. Parent Questionnaire

A. Do you think that this has been a worthwhile program for your child?

1. Number Responding 351
2. YES 99%
3. NO 1%
4. Representative Comments:

"It has shown him that he is capable to succeed in any area if he tries."

"It gives my daughter 3 years to plan to prepare for the job of her choice and ability."

"Has helped the child know himself better."
"Helped him toward a future career. School should show a real purpose for the future in the lives of each student. This testing should help to do this."

"Of course a lot of this depends on the child's interests and attitude also."

"I wish this program could have been extended to other grades."

"It has taught her to think about the world around her and not just this area."

"If it is continued throughout her school years."

"I believe she is more aware that her present classes in school are important to her, in helping to prepare her life's work."

"This is absolutely the most wonderful student program yet to help rural area children."

"Very worthwhile. It helps a youngster to understand what is available to him in the job market."

"Not enough information."

"It has made him aware of his ability and also his chance of success."

"Will help him more later."

"She has become more interested in occupations."

"Especially since our high school does not have the services of full time counselor to make such programs available."

"Made her think what she'd like to be."

"Outstanding."

"It has helped my child become more aware of employment opportunities."

B. As a result of this program, do you feel that your child has become more interested in jobs?

1. Number Responding __345__
2. YES __97%__
3. NO __3%__
4. Representative Comments:

"Probably, at least more aware of a variety of job opportunities."

"Yes, especially in technical education."
"I believe it's made them think more of what the future holds for them and know that a good education along the lines for the job best suited for them is necessary."

"She has become more interested in reading about the different areas."

"This is a good age to develop an interest in careers."

"I think she has found there are many more fields to choose from than what she had thought about."

"Has showed a more active interest lately in small part-time jobs."

"It really built his ego to learn he had high potential in music."

"Not yet."

"I'm glad to see the assortment of materials have given her larger variety."

"She thinks that she wants something that doesn't require much training. This might help her to see other possibilities."

"Up until now, I don't think she gave much thought to what she would like to do. Now she is interested in the future and she discusses it often with me."

"It has made her think. It has proven to her that she must prepare herself for a final decision."

"She found out much needed information on her choice of a vocation."

"At least it will start them to thinking of what they would like to do after high school."

"Helped the child know what he could do best through the tests that were taken."

C. Has this program helped your child to become more aware of job opportunities?

1. Number Responding 347
2. YES 98%
3. NO 2%
4. Representative Comments:

"She wants to start working after school now."

"She still needs opportunities for seeing how her skills can apply to the working world."
"Has helped realize the existence of a great many areas of interesting opportunities of which he was not previously aware."

"Living in our rural area, there isn't many if any job opportunities for younger students so it is important that they realize that they need special training and knowledge for better jobs later."

"Yes, he has been thinking about the salary part of a career."

"It has brought out the fact that perhaps a job might entail leaving the state in a training period as well as eventually making a home away from Utah."

"I believe she understands the "world of work" much better. Also the importance of education to prepare her for life."

"Our community does not offer too many opportunities for young people. This program for them provides information that might have otherwise never been available to them."

"Yes, a great deal more." "He immediately decided he needed to have something to do after school."

"More so in looking to the future, not necessarily at this time and locality."

"To which we are thankful."

"The small town schools are handicapped in learning of job opportunities."

"Helps her see why advanced school is important."

D. Do you think your child has a better understanding of his own aptitudes, interests, and values as they relate to job choice?

1. Number Responding 344
2. YES 99%
3. NO 1%
4. Representative Comments:

"Some. I think this needs to be followed through and enlarged upon."

"Wants to become what is best for him."

"Not sure--she says, 'I am so mixed up—even more now!' "

"Has helped motivate her to try harder in school to reach a higher goal in life."

"Because of limited class opportunities in a small high school, we feel that this has been very worthwhile."
"The tests gave her an idea of what she was best suited for."

"Yes, because the results are in writing or on charts."

"I think the child is given a valuable opportunity for self-evaluation under trained personnel and in many instances will more readily accept the results and accept the guidance in pursuing his goals further."

"I feel that the counseling given to our student while she was with us and the counselor would mean more to her than if we told her the same thing."

"We felt that he had abilities in the field he scored best in, but we had no way of knowing for sure until these tests."

"The tests were very worthwhile to her, as well as enjoyable."

"But they don't always agree especially if they have something definite that they want to do, and also different things such as being afraid or upset will affect the test results."

"First chance at this type of scoring."

"These tests point out the child's weakness."

E. Has this program helped you as parents to better understand your child and his characteristics as they relate to eventual career choice?

1. Number Responding 323
2. YES 97%
3. NO 3%
4. Representative Comments:

"I've always felt like I wanted our boy to go at least 1 year to college. I don't believe now that this is necessary."

"This program hasn't changed my child's mind as to what she wants to do later and as I don't agree with her decision, I don't feel like this program has helped me to better understand her. In fact I am disappointed with the results of her test and wish she could understand the fact that she could do much better if she really cared enough. Maybe as she gets a little older these important things will sink in and she will realize and try to do better (I hope)."

"As a parent I appreciate this knowledge very much so I may help my child more."

"It is very interesting to see him, now, as he really is and not just as we want him to be."
"It is great to understand one's own child, thank you."

"It helps to know what line of interest she has and is interested to a point I can encourage her if she decides on one."

"It has simply made us aware of her abilities. I just hope that we can now direct her in the right direction."

"We had no idea potentials were in these areas."

"More parent-student consultations would be helpful. As parents we too are unaware of some of the choices our children will be exposed to as the advancement in the working world differed from year to year."

"Not necessarily. We knew these attributes of Rowe's before hand."

"Really can't say."

"Wished for opportunity to discuss child's aptitudes, interests, and abilities with counselor or someone."

"Perhaps some. It has done more to acquaint me with possible career choices open to people today."

F. Other Comments:

"I hope there is some followthrough into Junior and Senior years of High School. Also it has helped parents to see opportunities for their children." (7)

"Very good." (2)

"Being educated in a small town where opportunities and careers are limited, believe anything from the 'outside,' like the mobile unit, was worth the time and effort, in making any student more aware of what is going on, and that it is expected that they will be a part of this 'going on' in the very near future."

"I feel this is one of the best programs I have ever heard of. A parent may feel that his child is not working to the best of his abilities, but he still doesn't know how to motivate him. It would seem to me, that this program makes the student more aware of his potential. What fields would be best for him and what eventually would lead him to a full and happy life, are answered by this program. Perhaps if we had had this program when we were in school, we wouldn't still (after 30 years) wonder what we would have been most happy at. Goals are what most people miss. To know where one is going or what one wants is essential. Surely this program can help a student with this. I heartily endorse the program. Thank you so much for coming."
"I'm pleased that we have had this opportunity of MACE. It's to an advantage to prove that she has many potentials and if she wants can explore several if she pleases."

"Could you work out something that would show the child that good grades do count, that those with the best grades get the scholarships and the opportunities. If you could get them thinking about their career perhaps they would be impressed."

"Students of this age are not ready for choosing a career. They are mixed up by growing up, then you push a career that is something for the rest of their life. Maybe some students know what they want to do, but most college students aren't sure. Maybe by the time they are 17 or 18 they would be ready to think about a career."

"I feel this to be most important in educational advancement. Too often students think their interests are in fields they are entirely unsuited for. Consequently, much of their time is lost or could have been used much more advantageously had proper counseling been used. More power to this Program."

"We feel the children ought to be trained to be self-sufficient."

"Class would work out better if given in 2 hr. blocks."

"I highly endorse this program and I am grateful my son had the opportunity to take advantage of it."

"Before she didn't mention working, now she does."

"We think this has been a very good thing. We appreciate your interest shown in the students."

"The program showed that if a student is more interested in a field where he could get training in vocational school there would be no need in going to college."

II. Faculty Questionnaire

A. Do you think this has been a worthwhile program for the students?

1. Number Responding 66
2. YES 100%
3. NO 0%
4. Representative Comments:
Appendix K (Cont.)

"I don't know enough about it. There hasn't been enough time since the program has been administered for me to make a valid evaluation or to make any recommendations."

"I believe it gives the student an idea of his strong points and concrete future opportunities that he will have. It also helps him to realize some weak spot in his education with time to correct them while in high school."

"Not enough communication between unit and teachers. We don't know what is going on."

"Very, if the students had been alerted or conditioned beforehand--and a follow up in the class time could be instituted."

"The girls have talked about careers in the future."

"Wouldn't we have to agree on some specific objective and measure against this for this answer?"

"I heard many good comments for the program from the students."

"For most, however, some used it as a chance to mess around."

"Should have more structure and involve all students each day of the week."

"This is a very good program."

B. Do you feel this program would be more appropriate at another grade level?

1. Number Responding 61
2. YES 65%
3. NO 35%
4. Representative Comments:

"Yes, this should be integrated into the curriculum."

"Should be a follow-up program."

"Higher grades would be better."

"No, I think students need to think about an occupation when the high school classes become selective."

"I feel a counselor can do this more adequately and the money spent elsewhere."

"Ninth grade is too young."
"9-12 grades."

"11 and 12 graders would profit more."

"Interesting to see comparison made of these 9th graders when they reach 12th grade."

"Expand number of grades served."

"In one way, yes, because students of this age are not thinking seriously of occupations yet. But in another way, no, because they need to plan their high school courses to meet their job interest needs."

C. Have your students tried to relate your class material, etc., to the world of work more than they have in the past?

1. Number Responding ___
2. YES ___
3. NO ___

4. Representative Comments:

"There hasn't been sufficient time to tell to any degree. Perhaps next fall as they sign up for classes this will become evident."

"Not yet that is visible, but we'll work on it."

"It's a very good program, should include all grade levels. A little late in the year for students to relate world of work with class materials other than the materials that are important and appropriate."

"Too immature."

"Not so you can tell yet."

"What do we measure against and if the unit has achieved full purpose wouldn't the opposite effect be in evidence of teachers organizing their program to relate more to the world of work."

"Yes, they enjoyed asking and talking about the related fields."

"Too soon to tell."

III. Student Questionnaire

Number Responding ___

1. Was the information in the mobile unit easy or difficult to understand?

   Easy ___
   Difficult ___
Appendix K (Cont.)

2. Do you feel that the information about the occupations was too general or too detailed?
   Too General 56%  Too Detailed 44%

3. Do you feel that there was enough information about each of the various occupations?
   Yes 89%  No 11%

4. Do you feel that this information was and will be of use to you?
   Yes 98%  No 2%

5. What is your opinion as to the information itself?
   Interesting 97%  Dull 3%

6. Did the program as a whole encourage you to explore occupations on your own?
   Yes 97%  No 3%

7. Do you think that the counselor helped you to relate your knowledge about yourself to the characteristics of the various occupations?
   Yes 96%  No 4%

8. As a result of the program, are you considering more or fewer possible occupational choices than before?
   More 82%  Fewer 18%

9. Which source of information was most helpful?
   Occ. Files 48%  H.S. Planning 5%
   College Info 8%  Films 4%
   View Machine 32%  Tech School Info 4%
   App. Tran. 4%

10. Which source of information was least helpful?
    View Machine 10%  Films 22%
    High School Planning 5%  College Catalogs 17%
    Occ. Exploration Kit 4%  Technical School Catalogs 13%
    Information about apprenticeship training 22%
Appendix K (Cont.)

11. Which experience with counseling was most helpful in helping you understand your own aptitudes, interests and values in making plans for the future?

Group Counseling 28%  Individual Counseling 59%  Parent-Student 13%

12. Which experience with counseling was least helpful?

Group Counseling 61%  Individual Counseling 17%  Parent-Student Counseling 22%

13. In view of what you have learned in this program, how do you feel about the effort you put into it?

Satisfied 95%  Dissatisfied 5%

14. Do you feel that you had adequate time to think about the information as it was presented during your sessions?

Yes 78%  No 22%

15. Check any of the following phrases which you think apply to your experience with the occupational information materials.

3% Confusing to Operate  36% Easy to Operate
4% Too Little Information  4% Too Much Information
39% Too Little Time with It  2% Too Much Time with It
12% (YOUR OWN COMMENT)  3% Not Very Active for Me

16. Check any of the following phrases which you think apply to the interviews with the counselor.

2% Confusing  31% Good Interviews
10% Too Short  2% Too Long
2% Useless Information  52% Helpful Information
4% (YOUR OWN COMMENT)

A. What aspect of the program was most enjoyable for you?

Response  Number making same or similar response

Occupational Information Files (Occupational Exploration Kit, Career Information Kit, Desk-top Career Kit, Chronicle File)  294

V.I.E.W. Machine  186
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<td>Getting out of class</td>
<td>8</td>
</tr>
<tr>
<td>Group counseling</td>
<td>3</td>
</tr>
<tr>
<td>High school planning</td>
<td>1</td>
</tr>
<tr>
<td>Gained confidence in ability</td>
<td>1</td>
</tr>
</tbody>
</table>

**B. What part of the program do you think will help you the most in making a future occupational choice?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number making same or similar response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Information Files (Occupational Exploration Kit, Career Information Kit, Desk-top Career Kit, Chronicle File)</td>
<td>321</td>
</tr>
<tr>
<td>V.I.E.W. Machine</td>
<td>136</td>
</tr>
<tr>
<td>Individual Counseling</td>
<td>72</td>
</tr>
<tr>
<td>College Information</td>
<td>71</td>
</tr>
<tr>
<td>Counseling</td>
<td>70</td>
</tr>
<tr>
<td>Career Study Worksheets</td>
<td>58</td>
</tr>
<tr>
<td>GATB and Kuder test results and interpretation</td>
<td>54</td>
</tr>
<tr>
<td>Library books</td>
<td>51</td>
</tr>
<tr>
<td>Technical Education Information</td>
<td>17</td>
</tr>
</tbody>
</table>
**Appendix K (Cont.)**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number making same or similar response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studying and working individually</td>
<td>15</td>
</tr>
<tr>
<td>Films</td>
<td>9</td>
</tr>
<tr>
<td>College View Deck</td>
<td>7</td>
</tr>
<tr>
<td>Group counseling</td>
<td>5</td>
</tr>
<tr>
<td>High school planning</td>
<td>4</td>
</tr>
<tr>
<td>Parent counseling</td>
<td>4</td>
</tr>
<tr>
<td>Discussions</td>
<td>1</td>
</tr>
<tr>
<td>Know how as well as what job to get in to</td>
<td>1</td>
</tr>
</tbody>
</table>

C. What part of the program do you think will help you the least in making a future occupational choice?

<table>
<thead>
<tr>
<th>Response</th>
<th>Number making same or similar response</th>
</tr>
</thead>
<tbody>
<tr>
<td>None; enjoyed all of it</td>
<td>211</td>
</tr>
<tr>
<td>Films</td>
<td>85</td>
</tr>
<tr>
<td>Technical Education Information</td>
<td>74</td>
</tr>
<tr>
<td>College information</td>
<td>67</td>
</tr>
<tr>
<td>Library books</td>
<td>66</td>
</tr>
<tr>
<td>V.I.E.W. Machine</td>
<td>53</td>
</tr>
<tr>
<td>Occupational Files</td>
<td>33</td>
</tr>
<tr>
<td>Worksheets</td>
<td>28</td>
</tr>
<tr>
<td>Group counseling</td>
<td>23</td>
</tr>
<tr>
<td>College View Deck</td>
<td>21</td>
</tr>
<tr>
<td>GATB and Kuder test results and interpretation</td>
<td>14</td>
</tr>
<tr>
<td>Counseling</td>
<td>13</td>
</tr>
<tr>
<td>Individual counseling</td>
<td>6</td>
</tr>
<tr>
<td>High school planning</td>
<td>6</td>
</tr>
</tbody>
</table>
### Appendix K (Cont.)

<table>
<thead>
<tr>
<th>Response</th>
<th>Number making same or similar response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent counseling</td>
<td>2</td>
</tr>
<tr>
<td>Program mixed me up a little</td>
<td>1</td>
</tr>
<tr>
<td>This sheet</td>
<td>1</td>
</tr>
</tbody>
</table>

D. List any comments, suggestions, or recommendations which you might have to improve the usefulness of the mobile assisted occupational information system.

<table>
<thead>
<tr>
<th>Response</th>
<th>Number making same or similar response</th>
</tr>
</thead>
<tbody>
<tr>
<td>All good, no changes</td>
<td>171</td>
</tr>
<tr>
<td>Needed more time with the program</td>
<td>150</td>
</tr>
<tr>
<td>More information about specific jobs (High school teaching, P.E., F.B.I., Military, were specifically mentioned)</td>
<td>30</td>
</tr>
<tr>
<td>Continue program</td>
<td>27</td>
</tr>
<tr>
<td>More counseling</td>
<td>18</td>
</tr>
<tr>
<td>More machines and microfilm cards representing greater variety of jobs</td>
<td>18</td>
</tr>
<tr>
<td>More free time</td>
<td>8</td>
</tr>
<tr>
<td>Larger facilities or smaller groups</td>
<td>7</td>
</tr>
<tr>
<td>More technical education information</td>
<td>6</td>
</tr>
<tr>
<td>More films</td>
<td>4</td>
</tr>
<tr>
<td>Fewer films</td>
<td>4</td>
</tr>
<tr>
<td>More information about colleges and scholarships</td>
<td>2</td>
</tr>
<tr>
<td>Have information about jobs at school permanently</td>
<td>1</td>
</tr>
</tbody>
</table>
VITA

Robert Eldred Charlton

Candidate for the Degree of

Doctor of Philosophy

Dissertation: The Effects of Mobile Assisted Career Exploration on the Career Development of Rural Ninth Grade Students

Major Field: Psychology

Biographical Information:

Personal Data: Born at Ogden, Utah, September 16, 1943, son of T. Eldred and Lucille Hoffman Charlton. Married to Linda Pitts, one child, Heather.

Education: Attended elementary school in Ogden, Utah; graduated from Ben Lomond High School in 1961; received Bachelor of Arts degree from Utah State University, with a major in psychology and a minor in German, in 1968; received Master of Arts degree, specializing in counseling, at Utah State University in 1969; completed requirements for Doctor of Philosophy in 1973.