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Date March 8, 1978

THE EFFECTS OF CAREER EDUCATION TEACHER IN-SERVICE TRAINING
ON THE CAREER KNOWLEDGE OF SIXTH GRADE STUDENTS

by

CHARLES RICHARD STRAND

A professional paper submitted in partial fulfillment
of the requirements for the degree

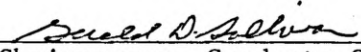
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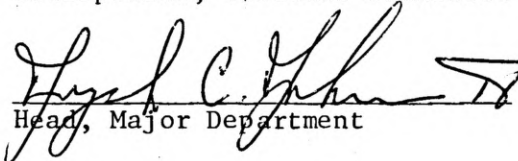
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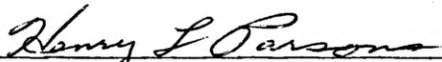
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TABLE OF CONTENTS

VITA	ii
ACKNOWLEDGMENTS.	iii
TABLE OF CONTENTS.	iv
LIST OF TABLES	vi
ABSTRACT	vii

Chapter	Page
1. INTRODUCTION	1
STATEMENT OF THE PROBLEM	2
NEED FOR THE STUDY	3
GENERAL QUESTIONS TO BE ANSWERED	4
GENERAL PROCEDURES OF THE STUDY.	5
LIMITATIONS.	6
DEFINITION OF TERMS.	7
SUMMARY.	8
2. REVIEW OF LITERATURE	10
CAREER EDUCATION - HOW IT DEVELOPED.	10
CAREER EDUCATION: DEFINED	12
CAREER EDUCATION: HOW TO DO IT	14
RELATED STUDIES.	16
SUMMARY.	17
3. PROCEDURES	20
Population Description	20
Treatments	21
Method of Collecting Data	23

Method of Organizing Data	24
Statistical Hypothesis.	24
Analysis of Data.	25
Precautions Taken for Accuracy	25
Summary	26
4. RESULTS OF THE STUDY.	28
SUMMARY	31
5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	32
CONCLUSIONS	36
RECOMMENDATIONS	37
REFERENCES.	39

LIST OF TABLES

1. Attainment of Career Education Concepts.	29
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ABSTRACT

The problem of this study was to compare the career knowledge of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. This study was done in Great Falls, Montana, in 1975, using the entire population of twelve intact student classes. The experimental group of classes had teachers who participated in career education in-service training and the control group of six classes had teachers who did not participate in career education in-service training.

The career education in-service training course focused upon the use of a variety of consultants, extensive readings, and the completion of one or more group projects.

The null hypothesis was: students of teachers who have successfully completed a career education in-service training course will not show a significantly greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

The statistic used to test the null hypothesis was a one tailed T-test comparing class means. The null hypothesis was tested at the .05 probability level.

Since the probability level on the post-test results was .236, and the null hypothesis was tested at the .05 probability level, the null hypothesis was accepted.

The following recommendations were made:

1. The results of this study lead to the acceptance of the null hypothesis, but, further investigations should be made with larger sample sizes.
2. The development of comprehensive career education programs in the public schools should be continued.
3. Each practitioner of career education must develop his or her own definition of career education to fit the needs of their program.
4. The career education in-service program in the Great Falls Public Schools should continue with the following modifications:
 - a. Develop more programs for administrators.
 - b. Concentrate on those teachers most likely to change.
 - c. Involve participants in the planning.
 - d. Present the program to more parent and business groups.

Chapter 1

INTRODUCTION

On January 21, 1971, the Commissioner for Education, Sidney P. Marland, introduced the term "career education" in an address before the National Association of Secondary School Principals.

What was the reason for Marland's introduction of this term?

President Lyndon Johnson gave a part of the reason:

Yet for all our progress we still face enormous problems in education--stubborn, lingering, unyielding problems. Our schools are turning out too many young men and women whose years in the classroom have not equipped them for useful work (Marland, 1974:5).

While there is no universal agreement of the definition of the term "career education," the general goal of career education should help to clarify an understanding of the term. Hoyt, Pinson, Laramore, and Mangum (1973:29) wrote:

A key component of career education consists of efforts of all classroom teachers, at all levels of education, to teach career implications of their subject matter.

President Nixon (1972) endorsed the idea of career education in his State of the Union Message of January, 1972. His administration urged more emphasis on career education through the development of model programs. These programs were to be implemented and tested in designated school districts.

The writer has found that in the implementation of any educational program such as career education, in-service training of

teachers is viewed as an integral and continuous effort. Effecting change in educational personnel is not an easy task. Curriculum instruction must be reviewed and altered. New teaching methods must be demonstrated and implemented. Teachers must be convinced of the validity and worth of a program before they will change their attitudes and priorities.

The writer has found that innovative educational programs are often undertaken with the assumption that increasing a teacher's knowledge about the educational innovation and providing appropriate instructional strategies will result in an increase of student knowledge.

It was the intent of this study to determine whether teacher in-service training in the curriculum area of career education did indeed increase student knowledge.

The research was done in the Great Falls Public School System, Great Falls, Montana. The researcher used students' scores from classes of selected teachers who participated in career education in-service training classes and students' scores from classes of selected teachers who did not participate in career education in-service training classes.

STATEMENT OF THE PROBLEM

The problem of this study was to compare the career knowledge

of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. One group of students was taught by teachers who participated in career education in-service training and one group of students was taught by teachers who did not participate in career education in-service training.

NEED FOR THE STUDY

By the mid 1970's, President Nixon's initial career education model program concept had expanded from five massive programs to hundreds of school district career education programs throughout the nation. The types of programs varied from comprehensive models which included grades kindergarten through twelve to the Experience Based Career Education (EBCE) model which involved only high school students. By 1977, many career education programs continued to have federal and state funding. Some programs had been absorbed into their local school budget for their continuation.

Once a career education program had been implemented within a school district, the next logical step was to train interested teachers in the use of career related instructional strategies. These included: career field trips; resource persons; career related films, filmstrips; books, and audio-visual materials; role playing; simulation games; worker interviews; decision-making activities; self-awareness activities; values clarification activities; hand-on activities with

tools, equipment, etc.; assembly-line production's writing of career briefs; on-the-job work explorations. Smith (1976:38) stated:

In order that career education make its full impact it is imperative that teachers and other instructional personnel become acquainted with the purposes, principles, conditions, practices, techniques, materials, of career education, and that they have some practice in adaptation of such information to their local conditions.

The purpose of this study, however, was not to rationalize the need for career education in-service training of teachers, but rather to provide definitive information about the effectiveness of training teachers in the use of career related instructional strategies when judged by student acquisition of career knowledge. It is hoped that this information will be useful in the continuing development of the Great Falls Public Schools Career Education Program. It should also prove useful to major funding agencies as they address problems associated with the most effective means to further career education throughout the United States.

GENERAL QUESTIONS TO BE ANSWERED

The general questions to be answered in this study are:

1. What are the causes which provoked national effort to provide career education programs in the public schools?
2. What are the "milestones" in the development and the implementation of career education in the United States?
3. What is a workable definition for career education?

4. What curricular elements should be included in in-service training programs to prepare teachers to teach career education in their classrooms?

5. What strategies should be considered before implementing innovative programs such as career education in public schools?

6. Is there a significant difference in the increase of knowledge of careers on the part of sixth grade students whose teachers participated in in-service training when compared with sixth grade students whose teachers did not participate?

GENERAL PROCEDURES OF THE STUDY

The general procedures followed in this study were:

1. Conduct a thorough review of literature concerning the history and implementation of career education.
2. Describe a program of teacher training in career education.
3. Conduct this program with volunteer teachers in the Great Falls Public Schools.
4. Establish a population for the study by selecting teachers that participated in the career education in-service training.
5. Establish a control group for the study by selecting teachers from the Great Falls Public Schools who did not participate in the career education in-service training program.

6. Select an appropriate instrument for the pre and post-testing.
7. Measure pre-program career knowledge on the part of sixth grade students utilizing the Career Education Cognitive Questionnaire.
8. Measure post-program career knowledge on the part of sixth grade students utilizing the Career Education Cognitive Questionnaire.
9. Compare the pre and post-test score results of the group of students that had teachers with career education in-service training with the group of students that do not have teachers with career education in-service training.
10. Draw conclusions from the accumulated data and make the appropriate recommendations.

LIMITATIONS

1. The search for literature was limited to sources at the Montana State University Library and ERIC materials listed under the "Career Education" category, and material found in the writer's personal library.
2. The study has been limited to six sixth grade teachers and their students in the Great Falls Public Schools.
3. For the purpose of this study, all classes whose teachers participated in the in-service training comprised the experimental group. The control group was comprised of an equal number of classrooms

whose teachers did not participate in the in-service training, but volunteered to allow their classes to be tested.

4. The evaluation instrument used for this study was the Career Education Cognitive Questionnaire.

DEFINITION OF TERMS

Career Education. Pertains to effort involved to get teachers to teach career implications in their subject matter areas.

In-service Training. In this study refers to the training of teachers in the use of career related instructional strategies.

Career Instructional Strategies. Include such things as: career field trips; resource persons; career related audio-visual materials; role playing; simulation games; worker interviews; decision-making activities; self-awareness and values clarification activities; hands-on activities; assembly line activities; writing of career briefs; and on the job work exploration.

Cognitive Career Knowledge. Refers to how much students know about: tolls and equipment of an occupation; educational training requirements; abilities and duties required; working conditions; social status; industrial employment trends; identification of jobs and job clusters; information sources; career planning; and worker satisfaction.

SUMMARY

The term "career education" was introduced by former commissioner of education, Sidney P. Marland, on January 21, 1971. President Nixon endorsed the idea and implemented model programs in designated school districts throughout the nation.

Career education programs extended from five massive programs to hundreds of individual applications of school districts throughout the nation. Implementation of such model programs involved affecting change in teacher attitudes and instructional strategies.

The role of career education was generally considered to be getting teachers to teach career implications in their subject matter areas. Of primary importance then, was the training of teachers to use career related instructional strategies.

The writer has found that innovative educational programs are often undertaken with the assumption that increasing a teacher's knowledge about the educational innovation and providing appropriate instructional strategies will result in an increase of student knowledge.

The purpose of this study was to compare the career knowledge of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. One group of students had teachers who participated in career education in-service training and one

group of students whose teachers did not participate in career education in-service training.

The next procedure in this study was to conduct a review of literature concerning career education. This is found in Chapter 2.

Chapter 2

REVIEW OF LITERATURE

The following review of literature pertaining to career education is organized in four major divisions. They are: Career Education - How It Developed; Career Education - Defined; Career Education - How To Do It; and Related Studies.

It was the intent of this review to show the evolution of career education, to give a better understanding of the term "career education," and to give insights into the implementation of a career education program.

CAREER EDUCATION - HOW IT DEVELOPED

Career education's development evolved because of the social unrest and the widespread criticism of our educational system. Hoyt (1975) notes that employers complained of the lack of basic skills, poor work habits and attitudes that young people have because they saw no relevancy between their school assignments and some future occupation. His contention was that the business-industry community and the home and family must have more input in educational process by providing students, teachers, and administrators with work experience and work observation opportunities. This criticism emphasized the need for the development of career education and its many definitions.

Hoyt, Evans, Mackin, Mangum noted that very few concepts

introduced into the educational environment have ever met with such instant acclaim as career education. Hoyt, Evans, Mackin, Mangum (1972:17) stated:

(a) Career education has emerged at a moment when dissatisfaction with educational practices and outcomes are at a peak, and (b) it promises to attack and improve some of the apparent sources of dissatisfaction.

Smith (1976) felt that this dissatisfaction stemmed from the fact that the public viewed the educational system as irrelevant to the world of work. Millions of high school and college graduates had not saleable skills. Smith (1976:3) noted,

There is a need for career education. The public supports it: a recent Gallup poll found 90% in favor of giving more emphasis to help students make an informed career choice.

In early 1971, Assistant Secretary for Education, Sidney P. Marland, Jr., (1974) called for "educational reform" to help solve the existent educational problems. This "educational reform" was in the form of career education.

On January 20, 1972, President Nixon, in his State of the Union Address, indicated that career education would become an area of emphasis under his administration. He pointed out that the academic curriculum offered little preparation for careers. Career education was intended to provide students with a broader exposure to and preparation for the world of work and that this emphasis would not slight academic preparation. This emphasis was to be accomplished by an intensified effort to develop "model programs" and test the best

ideas in the field of career education. These programs were to be supported by federal funds.

CAREER EDUCATION: DEFINED

Definitions of career education were numerous and no one was accepted as a universally accepted definition. Even the United States Office of Education had not adopted an official definition. Many of the leaders in career education had their own definition which they claimed to be the most functional one. Some of these career education leaders gathered for a national invitational conference conducted by the Center for Occupational Education, North Carolina University, and each participant was asked to submit a definition of "career education". The results were diverse. Hoyt, Pinson, Laramore and Magnum (1973:16) listed some of the participant responses.

1. 'Career education can be defined as that part of the total school curriculum which provides the student with the knowledge, exploratory experiences, and skills required for successful job entry, job adjustment, and job advancement. It can also be defined as an organized K-12 (kindergarten through twelfth grade) program to provide every student with an understanding of and preparation for the world of work.'

2. 'Career education may be described or defined as a comprehensive educational program which gives attention to preparing all people for satisfying and productive work in our society.'

3. 'Career education is that part of the total education process which focuses on the successful adaptation of the individual to the world of work.'

4. 'Career education is the systematic development of the natural powers of a person over his entire lifetime for his

life's work. It involves body, mind, and spirit and is commenced in the home where the child's will and intellect are nurtured through love and example by his parents and family members.'

5. 'Career education encompasses all education in that it is that part of a learning experience that assists one to discover, define, and refine his talents and use them in pursuit of a career.'

6. 'The purpose of career education should be to help people develop human resource competence along with a holistic understanding of the world of work or wage-employment system; i.e., the socioeconomic institution of working for pay in modern industrial society--to become competent as workers and comprehending as men and women.'

Some observers (Hoyt, 1972) expressed an optimism as to the future of career education in spite of the fact that career education had been lacking a simple, precise definition. Bailey and Stadt (1973) pointed out that career education has been defined as a program, a concept, and a process.

Goldhammer and Taylor (1972:6) stated:

Career education is a systematic attempt to increase the career options available to individuals and to facilitate more rational and valid career planning and preparation.

Sidney Marland feels career education can be defined as a concept. Marland (1971:25) wrote:

What the term 'career education' means to me is basically a point of view, a concept -- a concept that says three things: First, that career education will be part of the curriculum for all students, not just some. Second, that it will continue throughout a youngster's stay in school, from the first grade through senior high and beyond, if he so elects. And third, that every student leaving school will possess the skills necessary to give him a start making a livelihood for himself and his family, even if he leaves before completing high school.

Career education as a process is defined by Evans, Hoyt, and Mangum (1973:13-14) as five components that students will traverse in their educational experience. These components are:

1. The classroom in which all possible learnings are articulated in terms of the career applications for both understanding and motivation.
2. The ultimate acquiring of vocational job skills, whether they are learned on the job, in a structured classroom situation, or from general life experiences.
3. Career development programs for exposure to occupational alternatives and for derivation of a work ethic and a set of work values, allowing the individual to visualize himself or herself in various work settings and to make career decisions which appear to promise the preferred life-style.
4. Interaction among the training institutions, employing institutions, and labor organizations to provide more fertile learning environments than the schoolroom.
5. The home and family from which the individual develops initial attitudes and concepts.

Because of the many and varied definitions of career education, each practitioner must develop his or her own definition to fit the need of their program. This writer feels that a basic definition would be: "A process by which all classroom teachers would begin to teach career relevancy in their subject matter."

CAREER EDUCATION: HOW TO DO IT

One of the most important procedures in implementing any educational program, concept, or process is the in-service training of teachers. Smith (1976:38) concluded:

In order that career education make its full impact it is imperative that teachers and other instructional personnel become acquainted with the purposes, principles, conditions, practices, techniques, materials of career education, and that they have some practice in adaptation of such information to their local conditions.

"Adaptation of such information to their local conditions" is the key phrase in the organization and implementation of a career education in-service training program. This information, in the form of instructional objectives for the in-service training, would be to insure that each teacher would:

1. Become aware of the concept of career education;
2. Demonstrate his or her understanding of career education;
3. Become acquainted with career education programs in Montana;
4. Develop a philosophy of career education and relate this philosophy to the class; and
5. Be able to list and explain the component parts of a career education program, i.e., awareness, exploration, application and some specialization.

The teacher who successfully completes these instructional objectives will become very responsible for getting any career education program off the ground and turned into an effective working model.

Keller (1972:Forward) wrote:

A comprehensive in-service training program based on career

education may well be the theme that can revitalize the total educational system.

RELATED STUDIES

Kerr (1972) conducted a study to determine the change in career maturity and job recognition of sixth, seventh, and eighth grade students whose teachers participated in career in-service training classes. The Career Maturity Inventory was used as the testing instrument.

A significant difference was found by grade in the mean scores with the sixth grade gaining the most, followed by the eighth and seventh grades, respectively. On the pre-test the mean career maturity scores increased with an increase in grade.

It was concluded that there was a significant relationship between the career education classes and the increase in career maturity by those students whose teachers attended the career in-service classes.

Clapsaddle (1973) conducted a study to determine the relationship between career education teacher in-service preparation and the vocational development of sixth grade students.

The Vocational Development Inventory was administered both as a pre-test and post-test.

The hypothesis that there will be no significant difference between the vocational development of a group of sixth grade school

children who received instruction from teachers who participated in career education in-service preparation and a similar group of children whose teachers did not participate in career education teacher in-service preparation was rejected. It was concluded that there was a significant relationship between career education teacher in-service preparation and the vocational development of the sixth grade school children who received instruction from teachers who participated in the preparation.

Clapsaddle (1973) reaffirmed the feeling that in the development of a "model" career education program, one of the basic components is a comprehensive in-service training program for teachers.

SUMMARY

This examination of the literature on career education was organized into four divisions. They are: Career Education - How It Developed; Career Education - Defined; Career Education - How To Do It; and Related Studies.

Career education's development stems from the general public's dissatisfaction with public school's educational system. Employers complained that students lacked in basic skills, poor work habits and attitudes because they saw little relevancy between school assignments and a future occupation. The early 1970's brought the introduction of career education and the federal government's "model programs"

concept.

Career education's lack of an official definition has resulted in each practitioner developing their own definition to suit their own needs. Career education has been defined as a concept, a process, and a program. This writer feels that a basic definition would be: "A process by which all classroom teachers would begin to teach career relevancy in their subject matter."

Like any educational program, the in-service training of teachers becomes an important procedure in the implementation of a successful career education program. The in-service training would include instructional objectives to insure that each teacher would:

1. Become aware of the concept of career education;
2. Demonstrate his or her understanding of career education;
3. Become acquainted with career education programs in Montana;
4. Develop a philosophy of career education and relate this philosophy to the class; and
5. Be able to list and explain the component parts of a career education program, i.e., awareness, exploration, application and specialization.

Two related studies were cited with both reporting significant relationships between teacher in-service in career education and student acquisition of vocational development and career maturity.

Chapter 3 deals with procedures and the formulation of an in-service teacher training model for career education.

Chapter 3

PROCEDURES

The problem of this study was to compare the career knowledge of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. One group of students had teachers who participated in career education in-service training and one group of students had teachers who did not participate in career education in-service training.

The purpose of this chapter is to describe the procedures used in gathering and interpreting the data. Included in the chapter will be a description of the population, a description of the treatments, a description of the methods used in gathering and organizing the data, the statistical hypothesis, and the methods used in the analysis of the data.

Population Description

The population for the study consisted of grade six elementary teachers employed by the Great Falls Public Schools. The entire population of teachers was dichotomized on the basis of their having completed or not completed the career education in-service training program conducted by the Great Falls Public Schools career education staff.

The entire population of grade six teachers who completed the career education in-service program was used as the experimental group.

That population was six teachers. Six other sixth grade teachers were selected on a voluntary basis to be used as the control group.

Student groups used in the study were the intact classes of those teachers who did and did not participate in the career education in-service training program.

Treatments

The treatment for the experimental group of teachers was a career education in-service training program offered as a college extension course through Montana State University, Bozeman, Montana. The course was held in Great Falls, Montana, in the Spring Quarter of 1974.

The instructional strategy employed in the course generally focused upon the use of a variety of consultants, extensive readings, and the completion of one or more group projects.

The in-service course outline was as follows:

- I. What is career education?
 - a. Definitions
 - b. Role in total education programs
 - c. Purposes and objectives
 - d. Career education models
- II. Career education at the elementary level. (awareness)
 - a. Purposes and objectives
 - b. Cluster identification and exposure

- c. Programs and activities
- d. Role of education personnel
- e. Role of community
- f. Relationship to other components

III. Career education at the junior high school. (orientation)

- a. Purposes and objectives
- b. Cluster identification and orientation
- c. Programs and activities
- d. Role of education personnel
- e. Role of community
- f. Relationship to other components

IV. Career education at the senior high school. (application)

- a. Purposes and objectives
- b. Cluster experiences
- c. College bound/non-college bound considerations
- d. Programs and activities
- e. Role of education personnel
- f. Role of community
- g. Relationship to other components

V. Career education at the post-secondary level. (specialization)

- a. Purposes and objectives
- b. Occupation/profession specialization

- c. Programs and activities
 - d. Vo-tech, community college and university considerations
 - e. Role of education personnel
 - f. Role of community
 - g. Relationship to other component parts
- VI. Trends and implications
- a. Directions in career education
 - b. Opportunities in career education
 - c. Implications for new and experienced educators
- VII. Summary and conclusions
- a. Need for a system approach in career education
 - b. Need for improved articulation
 - c. Need for improved communication

Method of Collecting Data

The criterion instrument used in gathering data for this study was the Career Education Cognitive Questionnaire. This questionnaire was published by the Minnesota Research Coordinating Unit for Vocational Education at the University of Minnesota. The test-retest reliability obtained for the questionnaire consisted of a Pearson Product Moment correlation. The test-retest coefficient was .906. The instrument manual also reported reliability coefficients which ranged from .863 to .906 (University of Minnesota, 1973). The indices showed that the tests approved to be reliable over time.

Face and content validity were attested to by a sample of in-service teachers chosen by the Minnesota Research Coordinating Unit at the University of Minnesota, who reviewed each of the tests. During the analysis of face validity, teachers responded to questions relating to importance of each question to Career Education. During content validity analysis, teachers classified each question into the content areas for which the tests were developed. The majority of teachers believed that all questions utilized in the test represented career education concepts. Teachers also tended to agree with test developers on the content areas depicted by each question.

The Career Education Cognitive Questionnaire was administered by the classroom teachers in the experimental and control groups with a pre-test in September and a post-test in late May.

Each questionnaire was hand scored by the classroom teachers.

Method of Organizing Data

All data was collected in the form of raw scores with the highest possible score being fifty-four. The raw scores were arranged by classrooms. The classroom data were arranged into experimental group and control group. Tabular description appears in Table 1.

Statistical Hypothesis

The hypothesis formulated in this study was: Students of teachers who have successfully completed a career education in-service

training course will show a significantly greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

The hypothesis, stated in the null form, is: Students of teachers who successfully completed a career education in-service training course will not show a significantly greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

Analysis of Data

The unit of analysis was the intact classes of the teachers included in the study. The statistic used to test the null hypothesis was a one tailed T-test comparing class means.

The null hypothesis was tested at the .05 level of significance. Here the chances are five in one hundred or less, that a difference does occur when the statistic applied shows there is no difference.

The data will be presented in a table summarizing pre and post test means and standard deviations with the T-test results.

Precautions Taken for Accuracy

All statistical calculations were done on the computer at Montana State University. Scores were recorded and verified by a

second party to insure their accuracy.

Summary

The problem of this study was to compare the career knowledge of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. The experimental group was comprised of students in classes taught by teachers who had successfully completed a career education in-service training program. The control group was comprised of students in classes taught by teachers who volunteered to participate in this study but who did not complete a career education in-service training program.

The treatment for the experimental group was a career education in-service training program. The instructional strategy employed in the course generally focused upon the use of a variety of consultants, extensive readings and the completion of one or more group projects. General topics dealt with in the course were: What is career education; Career education at the elementary level; Career education at the junior high school; Career education at the high school; and Trends and Implications.

The criterion instrument used was the Career Education Cognitive Questionnaire which had a reported reliability coefficient of .906. Face and content were also reported as very high.

All data were collected in the form of raw scores by classrooms and arranged into experimental and control groups.

The null hypothesis was: Students of teachers who have successfully completed a career education in-service training course will not show a significantly greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

The statistic used to test the null hypothesis was a one-tailed T-test comparing class means. The null hypothesis was tested at the .05 level of significance.

All calculations were done on the computer at Montana State University. Chapter 4 will report the results of these calculations.

Chapter 4

RESULTS OF THE STUDY

The purpose of this chapter will be to report the results of the study on whether students of teachers who have participated in a career education in-service training course will show a greater knowledge of career education concepts than students of teachers who have not completed a career education in-service course as measured by the Career Education Cognitive Questionnaire.

All data was collected in the form of raw scores with the highest possible score being fifty-four. The raw scores were arranged by classrooms. The classroom data were arranged into an experimental group and a control group. The unit of analysis was the intact classes of the teachers included in the study. The null hypothesis was tested with a one tailed T-test comparing class means. The analysis of data is presented in the following table summarizing pre and post test means and standard deviations with the T-test results.

Table 1

Attainment of Career Education Concepts

	Pre-Test	Post-Test
Experimental Group	Mean = 39.699 SD = 1.689 N = 6	Mean = 40.015 SD = 1.375 N = 6
Control Group	Mean = 39.622 SD = 1.689 N = 6	Mean = 39.652 SD = .654 N = 6
t - value	.7484	.5846
Probability (1-Tail)	.471	.236

The experimental group and the control group were both tested in a pre-test and a post-test design.

The pre-test results for the experimental group were: mean, 39.699; standard deviation, 1.689; and N, 6. The pre-test results for the control group were: mean, 39.622; standard deviation, 1.928 and N, 6. The post-test results for the experimental group were: mean, 40.015; standard deviation, 1.375 and N, 6. The post-test results for the control group were: mean, 39.652; standard deviation, .654 and N, 6.

The t-value of the experimental group and the control group for the pre-test was .7484 with a probability (1-tail) of .471. The

t-value of the experimental group and the control group for the post-test was .5846 with the probability (1-tail) of .236.

Both the pre-test means of the experimental group and the control group were 39.6. This shows that student performance was consistent between the experimental group and the control group during the pre-test. The mean score for the experimental group on the post-test was 40.015 which shows a mean score gain from pre-test to post-test of .316, while the mean score gain for the control group from pre-test to post-test was .03.

The null hypothesis was: Students of teachers who have successfully completed a career education in-service training course will not show a greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire. The null hypothesis was tested at the .05 probability level. Since the probability of a difference as large or larger than the one found between the post-test means (.236) exceeded .05, the null hypothesis was retained.

The research hypothesis is therefore rejected. The research hypothesis was: Students of teachers who have successfully completed a career education in-service training course will show a greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course

as measured by the Career Education Cognitive Questionnaire.

SUMMARY

There was no significant difference found between the acquisition of career knowledge students of teachers who successfully completed a career education in-service training course and students of teachers who did not complete a career education in-service training course.

Since the probability level on the post-test results was .236, and the null hypothesis was tested at the .05 probability level, the null hypothesis was tested at the .05 probability level, the null hypothesis is accepted. The null hypothesis was: Students of teachers who have successfully completed a career education in-service training course will not show a greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The term "career education" was introduced by former Commissioner of Education, Sidney P. Marland, on January 21, 1971. President Nixon endorsed the idea of career education and implemented model programs in designated school districts throughout the nation.

Career education programs extended from five massive programs to hundreds of individual applications of school districts throughout the nation. Implementation of such model programs involved affecting change in teacher attitudes and instructional strategies.

The role of career education was generally considered to be getting teachers to teach career implications in their subject matter areas. Of primary importance then, was the training of teachers to use career related instructional strategies.

The writer found that innovative educational programs were often undertaken with the assumption that increasing a teacher's knowledge about the educational innovation and providing appropriate instructional strategies resulted in an increase of student knowledge.

The purpose of this study was to compare the career knowledge of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. One group of students had teachers who participated in career education in-service training and one group of students whose teachers did not participate in career education

in-service training.

The examination of the literature on career education was organized into four divisions. They are: Career Education - How It Developed; Career Education - Defined; Career Education - How To Do It; and Related Studies.

Career education's development stemmed from the general public's dissatisfaction with public school's educational system. Employers complained that students lacked in basic skills, poor work habits and attitudes because they saw little relevance between school assignments and a future occupation. The early 1970's brought the introduction of career education and the federal government's "model programs" concept.

Career education's lack of an official definition resulted in each practitioner developing his own definition to suit his own needs. Career education has been defined as a concept, a process and a program. This writer feels that a basic definition would be: "A process by which all classroom teachers would begin to teach career relevancy in their subject matter."

Like any educational program, the in-service training of teachers become an important procedure in the implementation of a successful career education program. The in-service training included instructional objectives to insure that each teacher would:

1. Become aware of the concept of career education;

2. Demonstrate his or her understanding of career education;
3. Become acquainted with career education programs in Montana;
4. Develop a philosophy of career education and relate this philosophy to the class; and
5. Be able to list and explain the component parts of a career education program, i.e., awareness, exploration, application and specialization.

Two related studies were cited with both reporting significant relationships between teacher in-service in career education and student acquisition of vocational development and career maturity.

The problem of this study was to compare the career knowledge of two groups of sixth grade students as measured by the Career Education Cognitive Questionnaire. The experimental group was classes taught by teachers who have successfully completed a career education in-service training program. The control group was classes taught by teachers who volunteered to participate in this study but who did not complete a career education in-service training program.

The treatment for the experimental group was a career education in-service training program. The instructional strategy employed in the course generally focused upon the use of a variety of consultants, extensive readings and the completion of one or more group projects. The in-service course dealt with: What is career education;

Career Education at the elementary level; Career education at the junior high school; Career Education at the senior high school; Career education at the post-secondary level; Trends and implications.

The criterion instrument used was the Career Education Cognitive Questionnaire which reported a reliability of .906. Face and content were also reported as very high.

All data was collected in the form of raw scores by classrooms and classrooms were arranged into experimental and control groups.

The null hypothesis was: Students of teachers who have successfully completed a career education in-service training course will not show a greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

The statistic used to test the null hypothesis was a one tailed T-test comparing class means. The null hypothesis was tested at the .05 probability level.

There was no significant difference found between the acquisition of career knowledge students of teachers who successfully completed a career education in-service training course and students of teachers who did not complete a career education in-service training course.

Since the probability level on the post-test results was .236,

and the null hypothesis was tested at the .05 probability level, the null hypothesis was tested at the .05 probability level, the null hypothesis is accepted. The null hypothesis was: Students of teachers who have successfully completed a career education in-service training course will not show a greater knowledge of career education concepts than students of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

CONCLUSIONS

Conclusions established from this study were:

1. Career education's development evolved because of the social unrest and the widespread criticism of our educational system.
2. In early 1971, Assistant Secretary for Education, Sidney P. Marland, Jr., called for educational reform in the form of career education. In 1972, President Nixon, in his State of the Union Address, called for an intensified effort to develop "model career education programs" to test the best ideas in the field of career education.
3. Definitions of career education are numerous and no one definition has been accepted as a universally accepted definition. Because of the many and varied definitions, each practitioner must develop his or her own definition to fit the needs of their

program.

4. A key element in the organization and implementation of a career education program is the in-service training of teachers.

Instructional objectives would include:

To insure that each teacher would:

- a. Become aware of the concept of career education;
- b. Demonstrate his/her understanding of career education;
- c. Become acquainted with career education programs in Montana;
- d. Develop a philosophy of career education;
- e. Be able to list and explain the component parts of a career education program, i.e., awareness, exploration, application and specialization.

5. There was no significant difference found in the increase of career knowledge on the part of sixth grade students whose teachers participated in in-service training when compared with sixth grade students whose teachers did not participate.

RECOMMENDATIONS

The following recommendations are made:

1. The results of this study lead to the acceptance of the null hypothesis which was: Students of teachers who have successfully completed a career education in-service training course will not show a greater knowledge of career education concepts than students

of teachers who have not completed a career education in-service training course as measured by the Career Education Cognitive Questionnaire.

The writer feels, however, that further investigations should be made with larger sample sizes.

2. The development of comprehensive career education programs in the public schools should be continued. The public favors such direction as seen in the Montana Educational Assessment Study done in 1975, in which, careers and the teaching of career information, was listed among the top priorities of the citizens of Montana.

3. Each practitioner of career education must develop his or her own definition of career education to fit the needs of their program.

4. The career education in-service program in the Great Falls Public Schools should continue with the following modifications:

- a. Develop more programs for administrators.
- b. Concentrate on those teachers most likely to change.
- c. Involve participants in the planning.
- d. Present the program to more parent and business groups.

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