

A SEMANTIC DIFFERENTIAL ATTITUDE COMPARISON OF
IOWA CAREER EDUCATION PROJECT PARTICIPANTS AND
NON PARTICIPANTS TOWARD CAREER EDUCATION

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ABSTRACT

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By

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Purpose of the Study

The purpose of the study was to measure the effect of a comprehensive, secondary level, Career Education Exemplary Project, as indicated by the meanings or attitudes held by school personnel (superintendents, principals, and teachers) toward certain career education concepts. The problem stated was: Do personnel in the Iowa Career Education Project (ICEP) have different attitudes toward certain career education concepts when compared with attitudes of school personnel in Non ICEP schools, and, what is the nature and extent of any attitudinal variation?

Procedure

Data was gathered by means of a semantic differential and follow-up personal interviews from superintendents, principals, and teachers in Iowa public schools. Two sub-populations were identified. One sub-population

was a random sample of personnel from eight schools identified as the pilot secondary schools of the ICEP. The other sub-population consisted of a random sample of personnel from eight schools that had not been involved in the ICEP. The Non ICEP schools were matched with the ICEP schools relative to rural, suburban, or metropolitan characteristics.

Participants in the study judged twelve career education concepts along ten bipolar scales. The concepts were: Career Exploration, Iowa Career Education Model, Career Information Center, Hands-On Experiences, Occupational Clusters, Career Awareness, Vocational Education, Career Integration, World of Work, Career Preparation, Career Accommodation, and Self Concept.

Responses were subjected to an analysis on the Statistical Package for the Social Sciences. The means, standard deviations, and t-ratios were computed by concepts, by scales, and by position of the respondent.

The same personnel from the equivalent of three randomly selected districts of the eight districts involved in the ICEP and Non ICEP subgroups responded to 11 questions in a personal interview to clarify why the subjects expressed the attitudes indicated by the mailed semantic differential. With the exception of the personal interviews, this study is parallel to a previous study done on the elementary level ICEP.

Results of the Study

Results derived from analysis of the data were:

1. School personnel in the ICEP schools differ in their attitudes toward career education from school personnel in Non ICEP schools. The group of administrators and teachers of the ICEP schools have a more positive attitude on all of the concepts judged.

2. Ninety-three percent of the time ICEP personnel have a higher mean for the concepts rated. A higher mean score on a concept rated indicates a more positive meaning or attitude held toward that concept. Thus the ICEP personnel have attitudes that are more positively polarized than the Non ICEP personnel.

3. The ICEP personnel have smaller standard deviations for the concepts being judged 80.6 percent of the time. A smaller standard deviation indicates less variation in the responses toward the concepts. Thus ICEP personnel were found to hold a more common core of meaning relative to the concepts judged.

4. In tests conducted to determine the t-ratios for the difference between the means of the two groups (ICEP and Non ICEP), it was found that 36.9 percent of the concepts had significant t-ratios at the .05 level of significance.

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CHAPTER I

INTRODUCTION

Former Commissioner Marland has stated: "Career Education, as indeed any educational reform, will succeed only to the degree that state and local officials and supporters of the schools accept its worth and press for its adoption."¹ Thus before any educational reform can succeed, the attitude of officials and supporters must be positive. In the case of implementation of educational reform through an exemplary project, the attitudes of personnel being asked to be the exemplifiers must be positive toward the concept being exemplified. Thus in any exemplary project it may be useful to assess the exemplifiers' attitudes toward the concept being exemplified, and thus to some extent, to determine the eventual success of the project in helping effect the desired educational reform.

In the past three years there has been an intensive effort to implement career education concepts in public schools. Often this effort has taken the form of an exemplary project designed to encourage and support the development of pilot and demonstration projects based

on sound research findings to improve educational practice. Career Education exemplary projects generally receive funding for a three-year period and are to serve as an example worth imitating.

In Iowa, three comprehensive exemplary projects have received funding through the State Department of Public Instruction. These projects are: The Iowa Project Models for Pre-Career Education in Iowa, the Des Moines Project--Comprehensive Career Curriculum, and the Pottawattamie County Project--Area Wide Project for Occupational Orientation, Exploration, Counseling, Job Training, and Placement for Elementary and Secondary Schools.² The largest of these three comprehensive projects is the Iowa Project (ICEP), both in terms of dollars allocated and school districts served. The ICEP received state funds while the other two comprehensive projects received federal funds.

The ICEP (Proposal for Exemplary Programs of Projects in Pre-Career Education), was transmitted for funding to the Iowa State Board of Public Instruction on February 2, 1971. The project is conducted under the direction of Iowa State University, through the Department of Agriculture Education. The nine elementary schools and eight secondary schools selected for the project represent rural, metropolitan and suburban communities in the state. Implementation of the elementary project began in March,

1971 with termination of the funding scheduled for February 28, 1974. The secondary project began July, 1972 with termination of funding scheduled for June 30, 1975.

Although it is generally surmised that an exemplary project such as the ICEP succeeds in bringing about a positive polarization of attitudes of school personnel involved, as a prerequisite for involvement, there is often inconclusive evidence. The issues, when stated as questions are: Is there indication of positive attitudes associated with selected career education concepts by school personnel in exemplary projects of ICEP pilot schools? Are the results of an intensive effort, such as the ICEP, reflected in positive attitudes of personnel involved in the effort? The answers to these questions and issues (at the secondary level--hereafter referred to as the secondary ICEP) form the basis for this study.

Statement of the Problem

Do school personnel in the secondary ICEP have different attitudes toward certain career education concepts when compared with attitudes of similar school personnel in non ICEP schools, if so, what is the nature and extent of such attitudinal variation?

The specific questions to be studied were:

1. Do superintendents, principals, and teachers of secondary ICEP schools differ in their attitudes toward

career education concepts from superintendents, principals, and teachers in non ICEP schools?

2. Do intensive efforts, such as the ICEP exemplary project, result in positive attitudes related to the concept being exemplified?

3. Does a relationship exist between direction of polarization in attitudes toward a concept and the fact that the program received impetus as an exemplary project?

4. Do school personnel, in the secondary ICEP exemplary project schools, agree regarding attitudes held toward selected career education concepts?

5. Do school personnel, in non ICEP exemplary school districts, agree regarding attitudes held toward selected career education concepts?

6. Does the level of responsibility of the personnel in the secondary ICEP or non ICEP schools influence the clustering of attitudes regarding selected career education concepts?

Statistical Hypotheses

From the preceding specific questions these statistical hypotheses were formulated:

1. Superintendents, principals, and teachers in secondary ICEP schools do not differ as a group in their attitudes toward selected career education concepts from

superintendents, principals, and teachers, as a group, in non ICEP schools.

2. Participation in the ICEP is not related to differences in direction of polarization of attitudes held by ICEP and non ICEP personnel toward the concept being exemplified.

3. Participation in the ICEP does not affect the degree of concentration of polarization of attitudes held by ICEP and non ICEP personnel toward the concept being exemplified.

4. Attitudes of school personnel in secondary ICEP schools regarding selected career education concepts are not polarized in any particular direction.

5. Attitudes of school personnel in secondary non ICEP schools regarding selected career education concepts are not polarized in any particular direction.

6. The level of responsibility is not related to polarization of attitudes expressed by personnel in the ICEP and non ICEP schools.

Purpose of the Study

The purpose of this study was to measure the effect of a comprehensive secondary Career Education exemplary project, as indicated by the meanings or attitudes held by school personnel (superintendents, principals, and teachers), toward certain career education concepts. Osgood, Suci, and Tannenbaum have stated:

Most social scientists would agree . . . that how a person behaves in a situation depends upon what that situation means or signifies to him. And most would also agree that one of the most important factors in social activity is meaning and change in meaning--whether it be termed 'attitude,' or 'value,' or something else again.³

The "attitude" or "value" in the situation for this study was determined for personnel who participated in the ICEP. The staffs of the eight selected schools, in the participating districts, were to develop a locally unique program. They were guided by a Model for Career Development (Appendix I), created as part of the ICEP by the central project consultants. This model, the basic ideas of career education, and references for the participants were disseminated at workshops and conferences that were held. This was to provide consistency in all phases of development and implementation. This study measures the effect of these efforts on the attitudes of the personnel involved.

Need for the Study

The exemplary project is an often employed procedure for the implementation of a new concept into a school district. The intent of the exemplary funding is to provide money to develop a model program that will continue after the funding ends. If continuation of a project is to occur once the funding ends, the attitudes of the school's personnel being asked to be the innovators must become positively polarized toward the

innovation. The secondary phase of the ICEP was terminated on June 30, 1975.⁴ The timing is ideal for an assessment of attitudes held by school personnel who are involved.

Evidence of the attitudes held by school personnel is needed to encourage federal and state legislators to continue funding. In the past funding for exemplary programs has been cut from the State of Iowa Department of Public Instruction and from the National Institute of Education budgets because, in part, legislators have not seen enough evidence to indicate that exemplary efforts accomplish attitudinal change.⁵ Without these sources of funding, future exemplary efforts will be limited.

Definition of Terms

The following terms are defined to make clear the the meaning and scope of key words and phrases that are to be used in the study.

Attitude.--". . . mental and neural state of readiness, organized through experience upon the individual's response to all objects and situations with which it is related."⁶

Bipolar Adjectives.--A set of paired adjectives which are opposite in meaning.⁷ One example of such a pair is "strong--weak."

Concept.--This term is applied to the generalized idea, having a "common cultural meaning," the form of the concept is generally dictated by the nature of the problem.

Career Education.--". . . is defined as the sequence of career development experiences, beginning in early childhood and continuing through adult life, that prepare individuals for present and future career opportunities. These experiences are offered through various programs, services, and activities which are designed and implemented to assist youth and adults to develop attitudes and occupational competencies which will lead to entry employment and advancement in employment."⁸

Semantic Differential.--". . . is a method of observing and measuring the psychological meaning of concepts. Although everyone sees things a bit differently, sometimes very differently, there must be some common core of meaning in all concepts."⁹ The instrument, as designed by Osgood, Suci, and Tannenbaum was used to measure attitudes of superintendents, principals, and teachers on certain career concepts.

Limitations of the Study

The study is limited to an assessment of data collected from: (1) secondary schools identified as pilot schools in the ICEP participating district, (2) secondary schools that were identified from districts not participating in the ICEP or the other comprehensive exemplary career education projects in Iowa (The Des Moines Project, the Pottawattamie County Project, Monticello Project and the Fort Dodge Project), and (3) superintendents, principals, and teachers from the two samples identified.

CHAPTER II

SURVEY OF RELATED LITERATURE

Introduction

This section contains a review of the literature and research that is related to this study.

Within the realm of social psychology in the past 25 years the concept of attitude has attracted much attention. This interest has been accompanied by a corresponding proliferation of writing and research.

This review of literature concerns selected studies related to the definition of attitude, congruity theory on attitude formation and change, the efficacy of the semantic differential to measure attitude and change, and the parallel study completed on the elementary ICEP.

Definition of Attitude

Attitude has been defined in a number of different ways. With the number of definitions proposed, there was some disagreement. This disagreement was often based upon a slightly different conception of what an attitude is or what emphasis is given within

the theory base of the concept on the different aspects of attitude.

In a 1967 review of the early literature, Spies noted: "Experimental psychologists came to identify attitudes with such things as cortical sets and brain fields and, therefore, consigned them to the mysterious realm of 'motivation' where they were content to leave them."¹⁰ Typical of this school of thought is the use of the term by Washburn who referred to attitude as: ". . . static movement systems within the body and the mind."¹¹

During this same time period social psychology was defined as the scientific study of attitudes and the term attitudes was used by Thomas and Znanieck to mean: ". . . mental processes which determine responses, as a 'state of mind.'"¹²

Sometime later, Thurstone and Chave used the term attitude to explain: "man's inclinations and feelings, prejudices or biases, preconceived notions, ideas, fears, threats, and emotions about any specific topic."¹³

The term "attitude" became fairly well established in the behavioral sciences during the 1930's. Allport observed that "all investigators, even the most orthodox came to admit attitudes as an indispensable part of their psychological armamentarium."¹⁴ His 1935

definition with an emphasis on behavior implications is still highly regarded.

An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related.¹⁵

In contrast, a predispositional definition was developed by Nelson: "An attitude may be considered a felt disposition arising from integration or experience and innate tendencies, which disposition modifies in a general way the responses to psychological objects."¹⁶

Eysenck viewed attitudes as a "generalized and pervasive disposition."¹⁷ This seemed to agree with Rokeach who defined attitude as: ". . . a relatively enduring organization of beliefs around an object or situation predisposing one to respond to some preferential manner."¹⁸

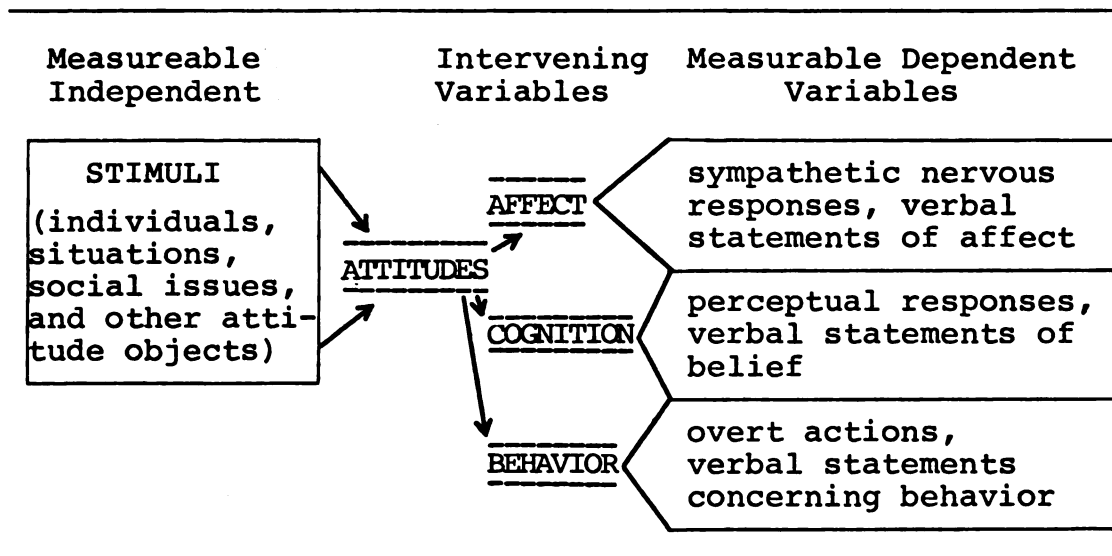
While Green considered an attitude as a latent psychological process which mediates between stimuli and observable response, attitude was latent in that it was not defined as directly observable and, therefore, must be inferred.

Attitude does not refer to any one specific act or response to an individual, but is an abstraction from a large number of related acts. . . . The latent variable is useful because it unifies a set of data namely, the observed responses.¹⁹

Secord and Backman²⁰ delineated attitude as consisting of three components: affective, cognitive,

and behavioral. A similar view was taken by Remmers²¹ who described two dimensions: verbal or symbolic and physical action. This emphasis on the components of attitude is popular with theorists. Rosenberg,²² who sees attitude as a complex response that serves the individual in adapting to his inner and outer worlds and Kerlinger who describes attitude as "a predisposition to behave towards persons or objects in one's environment, or a predisposition to perceive, feel, think, and behave toward something"²³ is an example of multiple component attitude conceptualization.

The widespread acceptance of the concept "attitude" consisting of components is represented in the following three facet model:²⁴



The model places the concept "attitude" within a theoretical framework that suggest that in any given situation an individual may select some of the available stimuli and neglect others. Once the stimuli has been selected it is processed by the individual who reacts affectively by exciting certain behavior tendencies which finally emerge as the observable behavior under the given conditions. The connection between the stimulus and the behavior is the intervening variable or mediating response here defined as attitude. The component (affect, cognition, and behavior) can be observed and measured from the dependent variables in the model.

An understanding of the schematic is important as Osgood, Suci, and Tannenbaum build on the model and define attitude as a learned process, potentially bipolar, with variable intensity which mediates between most stimulus and response patterns.

Most authorities are agreed that attitudes are learned and implicit. . . . Further they are predispositions to respond, but are distinguished from other such states of readiness in that they predispose toward an evaluative response . . . on a bipolar continuum with a neutral or zero reference point, implying that they have both direction and intensity providing a basis for the quantitative indexing of attitudes.²⁵

It became apparent that attitudes of people do not exist in a vacuum, but only in relation to some specific thing. Osgood, et al., suggest that "every concept that has meaning also has an evaluative

component, either positive, or negative, or neutral, and, therefore, every concept has an attitudinal component as part of its meaning."²⁶ The measurement of this attitudinal component is a key to understanding attitude formation and change.

Congruity Theory

Of the major approaches described in the literature related to attitude formation and change, cognitive consistency theory, specifically congruity theory, has been selected as the theory base for this study.

Congruity theory, proposed by Osgood and Tannenbaum,²⁷ contains a model that attempts to cover those variables believed to be the most significant with regard to direction of change to be predicted in any given situation. The variables are outlined in an assertion-message-cognition paradigm as (a) the existing attitude toward the source of a message, (b) the existing attitude toward the concept evaluated by the source, and (c) the nature of the evaluating assertion which relates source and concept in the message.²⁸ The predictions that are generated by the model identify both direction and degree of attitude change given measures of the sources and concepts under study.

Congruity theory can be understood as a special case of general balance theory which consists of a series

of theoretical assertions associated with Lewin, Heider, Abelson, Festinger, Brehm, Cohen, Newcomb, Cartwright, Harvey, Rosenberg, Osgood, and others. Congruity theory, like other balance theories, is concerned with predicting the effect of one person taking a position (positive or negative) toward another person or object. "That is, when person A says something good or bad about person (object) B, what effect does it have on someone else's attitude toward both A and B?"²⁹ This important concept, that attitudes tend to be evaluated on a good-bad dimension is often referred to a "maximum simplicity" or "maximum polarization."

A second assumption of congruity theory can be stated in the form: when two attitude objects (signs) of differing evaluation are linked with an assertion, there is a tendency for the evaluations of each object to shift toward a point of equilibrium or congruity. For example, Osgood, et al., state:

The general congruity principal may be stated as follows: Whenever two signs are related by an assertion, the mediating reaction characteristic of the other, the magnitude of the shift being proportional to intensities of the interacting reactions.³⁰

Third, congruity theory is closely tied to this study as the use of the semantic differential (SD) serves as the measurement instrument. Designed by Osgood, et al.,³¹ the SD is integrally involved with and was

developed from this or from any other theory of attitude formation and change.

It is assumed that before the principle of congruity can function, there has to be a link, by an assertion, between the two signs. These assertions can be associative or dissociative. The distinction between associative and dissociative assertions is not precisely drawn and no definition of an assertion is offered by the authors. To quote:

We realize that these examples do not provide a precise definition to 'assertion.' Although we are able to distinguish situations involving assertions (and hence dynamic interaction among sign-processes) from situations not involving assertions on an intuitive basis, so far we have not been able to make explicit the criteria on which we operate.³²

This apparent weakness is overshadowed by the strength of the congruity principle to predict direction of congruity theory is in the prediction of a communications effectiveness in producing attitude change."³³

On a seven-point scale (+3 to -3), the pressure toward congruity is ascertained as being equal to the difference in evaluative scale units between the two objects of judgments. The sign of this pressure (direction) is positive when the direction of congruence is negative.

"Using our principle, we may now define the location of congruence, p_c , for each sign as follows:

for associative assertions, $p_{c1} = p_2$ and

$$p_{c2} = p_1 ;$$

for dissociative assertion, $p_{c1} = -p_2$ and,

$$p_{c2} = -p_1 ,$$

where subscripts refer to sign 1 and 2 respectively."³⁴

the factor p_1 represents the p-larization of a value for a factor score on a given dimension.

The pressure of incongruity is symbolized by P:

$$P_1 = p_{c1} - p_1 \text{ and,}$$

$$P_2 = p_{c2} - p_2^{35}$$

Thus substituting for the original equations:

for associative assertions, $P_1 = p_2 - p_1$ and,

$$P_2 = p_1 - p_2 ;$$

for dissociative assertion, $P_1 = p_2 - p_1$ and,

$$P_2 = p_1 - p_2^{36}$$

Following the formulation of the theory further, Congruity theory posits that the shift is reaction toward congruity and is inversely proportional to the original intensities of the reactions to the sign. Osgood et al., offer the following to take this into account:

$$c_1 = \frac{P_2}{P_1 + P_2} P_1 \text{ and,}$$

$$c_2 = \frac{P_1}{P_1 + P_2} P_2$$

where C is the symbol of change.³⁷

Congruity theory has also built into its mathematical formulae a 'correction for incredulity' to explain the reduction in obtained change when the subject does not wholly accept that which is supposed to exist. This 'correction' is appropriate at times when the information is so unlikely that rather than change an attitude to restore consistency, the individual decides that the information is not believable. The formula for correction of incredulity is:

$$P_R + \frac{P_1}{P_1 + P_2} P_1 = \frac{P_2}{P_1 + P_2} P_2$$

where p_R is the degree of polarization, in one direction or the other at the point of resolution."³⁸

Kiesler³⁹ suggests that congruity theory suffers, as all theory in the field of social psychology apparently does, from the lack of power. He also is concerned with the vagueness of the definition of an "assertion" and by the fact that "prestige research," the

area of attitude research that congruity theory is most closely related to, is not all that clear.

On the other hand, Kiesler suggests that Osgood and Tannenbaum's congruity theory is the "best predictor" of the many consistency theories and pays the "most attention to the degree of inconsistency."⁴⁰ Suedfeld⁴¹ commends the theory for its use of seven-point scale, for the concept of the evaluation source being able to change along with the attitude toward the object of assertion, for the use of mathematical formulae, and because of the fact that any number of assertions can be included in the prediction formula.

Congruity theory states that the linking of a source with a concept will change the evaluation of the concept (doctrine of prestige) as well as the source. The numerical predictions as to the extent of the change have been supported by several experiments.

Osgood and Tannenbaum,⁴² in 1955, tested the theory of congruity with data from Tannenbaum's Ph.D. thesis. Using 100 college students, they had subjects rate sources and concepts on a Semantic Differential and demonstrated that obtained change, when compared with predicted change as corrected for incredulity, has a high degree of correspondence. This correlation between the obtained and predicted change was +.91. They also concluded that obtained change is typically less than

predicted change which they attributed to the "limited effect of a single message."

A 1956 study by Tannenbaum⁴³ with 405 college students using a Semantic Differential upheld the theory of congruity in regard to the susceptibility to change being inversely proportional to the intensity of the initial score.

A study involving two groups of 40 students by Kerrick,⁴⁴ demonstrated that congruity theory predicts significantly better for relevant than nonrelevant situations.

A later study by Kerrick,⁴⁵ 1959, that used two groups of 50 college students demonstrated further that the theory predicts a point of resolution or equilibrium somewhere between the associated objects of judgment and any obtained summation effect is directly contrary to the theory. In this study it was demonstrated that both positive and negative captions for pictures produced a significant change in the evaluation of the picture.

It was demonstrated that uninformed groups will change more in the advocated direction than will informed groups and that informed groups change more in the non-advocated direction than uninformed groups in a study using 44 college students by Kerrick and McMillan⁴⁶ in 1961.

Two studies, one by Tannenbaum and Gengel⁴⁷ in 1966 and the other by Tannenbaum in 1966,⁴⁸ documented that a change in attitudes toward a given concept will generalize so as to produce a change in attitude toward a given source which previously made an assertion about the concept and that a change in attitude toward a source which previously made an assertion about the concept as well as to an additional concept about which the source has not made an assertion; thus lending support to the notion of source diffusion across concepts in a consistent direction.

Related research that indicates that congruity theory prediction, with regard to perceived evaluation of complex stimuli, is not always as accurate as some competing formulae, but nevertheless "good predictors" are studies using "summation procedures."

The first such study, by Triandis and Fishbein⁴⁹ in 1963, using 25 college students from the University of Illinois and 25 students from the University of Athens discovered that a congruity model was not as accurate in predicting as was a summation formula developed earlier by Fishbein.

Fishbein and Hunter⁵⁰ in a 1964 study using four groups of 40 subjects supported the summation variation when predicting the effect of increasing amounts of information upon the evaluation of the stimulus person.

Further demonstration of the summation effect was offered by Anderson and Fishbein⁵¹ in a 1965 study using five groups of 20 students to compare the summation concept and the congruity concept. They demonstrated that the summation effect has a better prediction record when subjects are treated to different degrees of positively evaluated information.

The area of disagreement, the power of the summation effect to predict versus the congruity theory's ability to predict, was further investigated by Anderson⁵² in 1965 with 49 male college students. He documented that congruity theory and its averaging concept is more applicable to judgments of single objects while Fishbein's summation effect is more applicable to judgments of collections of objects.

Summary

While there is not complete agreement among the social psychologists regarding the definition of attitude, Suefeld stated the issue as being that of: "To many workers, the concept has three components: cognitive, affect, and behavior. Some writers restrict the term to the first two dimensions, and view behavior as independent dimension that may be, but does not have to be a function of attitude. Still others use 'attitude' to mean only emotional reactions, and refer to cognitive response as believe."⁵³ Despite this weakness of common

agreement on a definition of attitude, it remains a concept capable of explaining more broadly than any other the behavior of the individual. Hollaran states: "In short, despite its limitations, it is a step in the right direction of reducing the complex to the simple, it helps to make sense and give meaning to individual behavior and in all probability it is the best basis for prediction yet devised."⁵⁴ It can be concluded that regardless of which definition is applied, attitude refers to the complex concept that incorporates meaning and evaluation of an object or concept. The meaning and evaluation may vary in quality and intensity from negative to positive to neutral. Disregarding the lack of precise terminology with which to differentiate the various components, the value of the concept, if determined by its use, is indispensable. Even without common agreement as to its precise definition, the concept "attitude" best explains the evaluation activities of man and provides a construct with which to attribute behavioral variations.

Congruity theory, as a measure of attitude, has shown to be reliable as a predictor in situations where the more prestigious the source of an assertion or message, the greater the change in attitude toward the object of the assertion. It has also been demonstrated

in the research that the averaging concept of congruity theory is best suited for judgments of single objects.

Congruity theory has not been without its critics. Brown⁵⁵ and others have found reason to cite its limits. Nevertheless there is significant support for the model: "The theory nonetheless is a vast improvement over the old verbally stated doctrine of prestige suggestions."⁵⁶ "Except for problems involving the amount of change and the relevance of the source and concept, the attitude change studies give an encouraging degree of support to the congruity principle."⁵⁷

Abstract of Parallel Study on Elementary ICEP

Cronin conducted a study on the elementary ICEP during the conclusion of the elementary ICEP (February 28, 1974). The study detailed herein is parallel to the Cronin study. The purpose of the study was to measure the effect of a comprehensive Career Education Exemplary Project, as indicated by the meanings or attitudes held by school personnel (superintendents, principals, and teachers), toward certain career education concepts. The problem stated was: Do selected personnel in the elementary Iowa Career Education Project (ICEP) have different attitudes toward certain career education concepts when compared with attitudes of corresponding school personnel in non-ICEP schools and,

what is the nature and extent of such attitudinal variation?

Data was gathered by means of a semantic differential from superintendents, principals and teachers in Iowa public schools. Two sub-populations were identified. One sub-population was a random sample of personnel from nine schools identified as the pilot elementary schools of the ICEP. The other sub-population consisted of a random sample of personnel from nine elementary schools that had not been involved in the elementary ICEP. The non-ICEP schools were matched with the elementary ICEP schools relative to rural, suburban, or metropolitan characteristics.

Participants in the study judged twelve career education concepts along ten bipolar scales. The concepts were: Career Explorations, Iowa Career Education Model, Career Information Center, Hands-On Experiences, Occupational Clusters, Career Awareness, Vocational Education, Career Integration, World of Work, Career Preparation, Career Accommodation and Self Concept.

Responses were subjected to an analysis with the Statistical Package for the Social Sciences. The means, standard deviations, and t-ratios were computed across concepts, by scales. Results derived from analysis follow:

1. School personnel in the ICEP schools differ in their attitudes toward career education from school personnel in non-ICEP schools. Administrators and teachers of the ICEP schools have a more positive attitude on all but two of the concepts judged;
2. The ICEP personnel have a higher mean score for the concepts judged 86.8 percent of the time. A higher mean score on a concept rated indicates a more positive meaning or attitude held toward that concept. Thus the ICEP personnel have attitudes that are more positively polarized than the non-ICEP personnel;
3. The ICEP personnel have found to hold a more common core of meaning relative to the concepts judged;
4. In tests conducted to determine the t-ratios for the difference between the means of the two groups (ICEP and non-ICEP) it was found that 56.9 percent of the concepts had significant t-ratios at the .05 level of significance;
5. The non-ICEP personnel exhibited a lower mean score and larger standard deviation for the concepts being judged. This indicated that the non-ICEP personnel had less positive attitudes toward the concepts being judged. The non-ICEP personnel showed a tendency toward a neutral position on the seven point rating scale used.
6. The level of responsibility (administrator or teacher) had little significant bearing on the meaning held by the ICEP or non-ICEP personnel.⁵⁸

Cronin concluded that the elementary ICEP personnel hold more positive attitudes toward career education than personnel from non-ICEP schools; that the ICEP was successful in cultivating a positive polarization of attitudes held by elementary ICEP personnel towards the concepts. The concepts judged most positively by elementary ICEP personnel disclosed a definite

relationship to the Model For Career Development created as part of the ICEP.

Summary of Similar Studies

The following is a summary of a survey of recent and similar educational research using the semantic differential as an instrument to measure attitudes.

A study by Jensen in 1971 of 836 students (two groups) found that students in a flexible scheduled school had more positive attitudes toward concepts such as "the work we do in school," "the things we can do outside of class in school," and "the way this school is arranged" than did students in a traditionally scheduled school.

A 1971 study by Pegram of 81 nursing students supported the idea that meaning is related to behavior. Specifically, he found that the meaning of nursing and other related concepts, as measured on a semantic differential, was related to academic achievement in a nursing education program.

Leary's 1972 study of 247 teachers to determine the effects of a program of drug abuse education on the post-training attitudes of individuals who had undergone a series of workshop training sessions found significant difference between the trained and untrained and no statistically significant correlation between the "learning and post-workshop attitudes in the treatment group."

In a 1973 study of 240 teachers, Zelenak found that teachers who perceive evaluation as an administrative function hold less favorable attitudes toward the concept than teachers who view evaluation as an instructional function.

In a 1974 study to determine differences between 85 innovative and 87 traditional elementary school teachers in their perceptions of semantic differential concepts reflecting receptivity to change, Frear concluded "the basic hypothesis . . . that innovative teachers . . . would be more receptive to change was not supported."⁵⁹

Somerick's 1974 study was designed to find whether the selected Ohio legislature liaisons of six state-supported universities could assess the attitudes of the legislators and of their own university presidents. She concludes that "liaisons were more accurate in assessing the attitudes of the majority of the state legislators than . . . of their own presidents."⁶⁰

Vaughan's 1974 study compared attitudes of 100 deans of colleges of education, 100 curriculum directors in public schools, and 100 public school teachers toward educational technology. He found that attitudes toward educational technology were related to the subjects' levels of responsibility and formal education of the teacher.⁶¹

In 1973 Ahron examined 328 male and female counselors' and 153 academic women's perceptions of women's career roles. "The most significant finding is the difference in perceptions about male and female roles, which suggests that the traditional views of women's roles . . . create barriers to constructive vocational counseling and vocational development of women."⁶²

Smith's 1974 study measured the correlation of attitude changes with participation in the implementation of career education instructional units. Analysis of two samples of 100 teachers indicated that teachers' involvement in career education activities resulted in more positive attitudes on all three scales of (1) factorial composition, (2) relevance, and (3) semantic stability; that "male subjects viewed career education and industrial arts more positively than female subjects," and "intermediate teachers viewed industrial arts more favorably than primary teachers."⁶³

CHAPTER III

METHODS AND PROCEDURES

Introduction

This chapter includes a restatement of the problem and specific questions of the study, the statistical hypotheses, a discussion of the instrument used to gather data, its reliability and validity, a description of the sampling procedure used, analysis of comparison devices used to analyze the data, and the personal interviews.

Statement of the Problem

Do school personnel in the ICEP have a different common core of meaning or attitude toward certain career education concepts when compared with the common core of meaning or attitude of school personnel in non-ICEP schools? If so, what is the nature and extent of such attitudinal variation?

The specific questions studied were:

1. Do superintendents, principals, and teachers of ICEP schools differ in their attitudes toward career education from superintendents, principals, and teachers in non-ICEP schools?

2. Do intensive efforts, such as the ICEP exemplary project, result in positive attitudes related to the concept being exemplified?

3. Does a relationship exist between direction of polarization in attitudes toward a concept and the fact that the program received impetus as an exemplary project?

4. Do school personnel, in the ICEP exemplary project schools agree regarding attitudes held toward selected career education concepts?

5. Do school personnel, in the non ICEP exemplary school districts, agree regarding attitudes held toward selected career education concepts?

6. Does the level of responsibility of the personnel in the ICEP or non ICEP schools influence the clustering of attitudes regarding selected career education concepts?

The Semantic Differential

The instrument to be used to collect the data on attitudes for this study is the semantic differential (SD) as developed by Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum.⁶⁴ "The semantic differential is a method for measuring the meaning of concepts. In practice, it has had application as an attitude scale." The semantic differential was designed to be a general

measurement instrument that could be used in a wide variety of research problems.⁶⁵

Isaac and Michael describe the semantic differential as containing three elements. The first element is the concept to be evaluated in terms of semantic or attitudinal properties. The second element deals with a pair of polar adjectives, opposite in meaning, that anchor the scale and the third element is a series of undefined scaled positions which can be five to nine steps, with seven steps considered optimal.⁶⁶

Sax made these observations of the appraising and evaluating characteristics of the semantic differential:

1. The semantic differential is not an entirely new procedure, but a combination of the usual type of rating scale with factor analysis.
2. The technique is extremely flexible and is simple to construct, administer and score.
3. The semantic differential is subject to all the limitations which seem to be present in rating scales, namely, the possibilities of faking responses of acquiescing, and of having to mark a concept on a rather meaningless scale.
4. A number of studies have demonstrated validity for the semantic differential.
5. The semantic differential has found its widest application in the study of personality development and in the evaluation of psychotherapy. Its use in education has not been widespread, although it appears to be a rather promising tool.⁶⁷

This lack of application for the semantic differential in education is referred to by Kerlinger:

One of the difficulties in communicating about education is the different interpretation put upon education ideas. 'Take progressive education,' the '3 R's,' 'discipline,' and so on. It is likely that different kinds of people have quite different connotative meaning structure of these words. It is likely, for example, that exponents of progressive education have sharply different semantic spaces surrounding these concepts than exponents of more traditional viewpoints. Investigating such structures and their correlates should enrich psychological theory pertinent to education. The SD can aid such research.⁶⁸

The semantic differential yields a large amount of data. It can be administered easily and the scale used can easily be converted to numerical qualities for treatment statistically. Because the scores can be analyzed for a difference between concepts, between scales, between subject, or any combination thereof, use of the semantic differential is a desirable tool for answering the questions asked by educational researchers.

Although not all researchers accept the SD without reservation, there appears to be overwhelming support for the use of the Semantic differential, Kerlinger states: "We have here a useful and perhaps sensitive tool to help in the exploration of an extremely important area of psychological and educational concern: connotative meaning."⁶⁹

Semantic Differential Validity

According to Osgood, et al.: "An instrument is said to be valid when it measures what it is supposed to measure."⁷⁰ The semantic differential is an instrument used to measure meaning. Therefore, SD scores should be correlated with some independent criteria of meaning but there is no commonly accepted quantitative criterion for meaning. In line with such criterion, Osgood, et al. have fallen back on what is usually called "face validity." Thus, the semantic differential instrument is valid to the degree it corresponds with observations made without the aid of the instrument.

Osgood, Suci and Tannenbaum go to great lengths to test the validity of the semantic differential. As a result of their work they conclude: "Throughout our work with the semantic differential, we have found no reasons to question the validity of the instrument on the basis of its correspondence with the results to be expected from common sense."⁷¹

Semantic Differential Reliability

According to Osgood, et al., "The reliability of an instrument is usually said to be the degree to which the same scores can be reproduced when the same objects are measured repeatedly."⁷² Osgood, Suci and Tannenbaum investigated reliability in three categories:

item reliability which refers to the reproducibility of the basic scores, factor-score reliability which refers to the reducibility of the values under retest conditions and concept-meaning reliability which deals with the reproducibility of points in the semantic space and repetition of the measurement operation.

In their efforts to evaluate and refine the semantic differential as a measuring technique, Osgood, et al., amassed a considerable amount of data on reliability. They conclude:

The evidence shows that for individual subjects, a shift of more than two scale units probably represents a significant change or difference in measuring, and a shift of more than 1.00 to 1.40 scale units in factor score (depending on the particular factor) is probably significant. For group data ('cultural meanings'), changes or differences in measured meaning as small as one-half of a scale unit are significant at the 5 percent level. These levels of reliability should be satisfactory for most applications of the instrument.⁷³

The Population

The population of interest in this study was superintendents, principals, and teachers of the public schools in Iowa in 1974-75. One sub-population group was the personnel from the eight secondary ICEP schools and the other sub-population group was corresponding school personnel from eight non ICEP schools. Excluded from each of these sub-populations are school personnel involved in the other comprehensive career education

exemplary projects in Iowa (The Des Moines Project, and the Pottawattamie County Project, the Monticello Project and the Fort Dodge Project).

The Sample

The two samples for this study were generated in the following manner:

Sample One: Participating ICEP Schools

There are eight participating secondary schools in the ICEP which were selected as pilot secondary schools when the project began. The superintendents of the eight ICEP schools were selected as were the principals of the eight secondary pilot schools. One teacher from each of three subject matter areas (humanities, math and sciences, vocational-technical) was selected by the principal. Selection of a teacher was accomplished by selecting the teacher from each of the three respective subject matter areas with the beginning letter of the last name closest to the letter "A."

Sample Two: Nonparticipating ICEP Schools

Eight Non Iowa Career Education Project school districts in Iowa were selected from all other districts in the state with the exception of these districts involved in the Pottawattamie County Project and the Des Moines Project, the Monticello Project and Storm Lake

Project. This sample was selected to match the non-participating schools with the ICEP schools, relative to the rural, suburban, or metropolitan characteristics. School districts selected with more than one secondary school required further random selection of one secondary school for the study. The completed sample included: the eight superintendents from the schools selected, the principals of the secondary schools selected, and one teacher from each of the three subject matter areas of the schools selected. The selection of one teacher from each of the three areas was accomplished by selecting the teacher from each area with a beginning letter of the last name closest to the letter "A."

Construction of the Semantic Differential

The semantic differential consists of a number of scales, each of which contain bipolar adjectives, chosen from a large number of possible scales together with the concepts to be rated with the scales. Osgood, et al., states: "The scales or bipolar adjectives, are usually seven point rating scales, the underlying nature of which has been determined empirically."⁷⁴ Each scale may measure one or two of the factors that Osgood and colleagues found to be behind the scales. The factors are referred to as evaluation, potency and activity.

Selection of Concepts

Regarding the selection of concepts, Kerlinger recommends: "In using the SD in research, the first step is to choose the concepts or other stimuli that will be rated with the bipolar adjectives. This is the most important part of the job."⁷⁵ The concepts selected must be relevant to the research problems and must meet certain requirements for selection: (1) concepts must elicit varied responses from different persons--they must produce large variation, and (2) concepts should cover semantic space.

The following concepts were selected for this study and are identical to those used by Cronin:⁷⁶

Career Accommodation--That stage in the sequence of career development where the individual interrelated the factors inherent in the self concept and the world of work.

Career Awareness--The process by which an individual becomes cognizant of personal attributes and attitudes and develops understandings of and appreciations for self, the worker, and the world of work.

Career Information Center--A center in which all materials for use in a career development program are gathered so that they are available to both students and teachers.

Career Exploration--The level where students broaden their knowledge of self, the world of work, and the occupational clusters and investigate in more depth selected occupational areas of interest to them.

Hands-on Experiences--Contrived educational experiences designed to cause students to explore in more depth self interest activities and an occupational area. Such experiences may include observations as well as manipulative tasks.

Career Integration--Fitting career development concepts and learning activities into the existing curriculum and instructional goals, teaching objectives and classroom learning activities of the school.

Occupational Cluster--A cluster of occupations composed or recognized job titles which are logically related because they include identical or similar teachable skills and knowledge requirements.

Career Preparation--The development of genuine job entry level skills.

Iowa Career Education Model--A model that reflects the Iowa Department of Public Instruction definition of Career Education and shows two central themes: the self and the world of work.

Self-concept--Involves understanding one's self--physically, mentally, socially, emotionally--and his relationships with other people in the environment.

Vocational Education--An educational program with three basic objectives to meet the manpower and economic needs of the nations, to increase the options available to students and to increase the intelligibility of both general and occupational education.

World of Work--A framework where people live, work, produce, learn and create in the communities that they have established.

Selection of Scales

Osgood, Suci and Tannenbaum list three criteria to be used in the selection of scales. These criteria result from the absence of a specific scale that is perfectly aligned with factors and perfectly reliable. The first criterion for selection is factorial composition to provide the subject with a balanced space which he may actually use as he sees fit. The second criterion for selection is relevance to the concepts being judged

which is determined by the investigation depending on the purpose of the research. The third criterion governing the selection of scales is their semantic stability for the concept and subjects of the particular study.⁷⁷

Another important consideration in selection of scales is the possibility that the three standard scales; evaluative, potency, and activity, do not exhaust the total number of possibilities and dimensions highly significant for a particular study and might be lost if one sticks only to these scales. Osgood, et al. states: "Although there are, we believe, standard factors of judgment the particular scales which may, in any given research problem, best represent these factors, are variable and must be carefully selected by the experimenter to suit his purposes."⁷⁸ Cronin states that he ". . . selected ten scales that were relative to the concepts being measured and that were all loaded to some degree on the evaluation dimension. The resulting ten scales contained four with evaluative loading, three with potency loading and three with activity loading."⁷⁹ Cronin field tested the instrument by administering it to two groups of 15 persons each. One group consisted of Iowa public school personnel doing evaluative research on Iowa career education projects through the University of Iowa. The other group consisted of Iowa public school personnel with no formal involvement with career education.⁸⁰

Administering the Instrument

The data for this study was acquired through mailings to superintendents, principals, and teachers of ICEP schools and randomly selected non ICEP schools. A phone call was then made to superintendents requesting permission to conduct the study. When permission was granted, a letter of explanation with directions and the SD instrument was then sent to the superintendents, principals, and teachers (Appendices B, C, and D). Follow-up on nonrespondents was by phone.

The Semantic Differential Scoring Techniques

Each respondent was asked to place a check in one of the seven spaces for each bipolar adjective pair for each concept. There were 12 concepts and 10 scales, thus each respondent marked 120 spaces. Demographic data was also acquired from each respondent so the level of responsibility could be determined.

Using a scheme suggested by Isaac and Michael,⁸¹ numerical values of seven (the most positive end of the scale) and one (the most negative end of the scale) were assigned to each response. By using this pattern, the data could be easily treated statistically and a higher "numerical" value would indicate a more positive value.

Data Analysis

Isaac and Michael⁸² and Kerlinger⁸³ suggested the use of a t-test of the significance of the difference between means. A computer program, Statistical Package for the Social Sciences,⁸⁴ was used to compute mean scores, standard deviations, and t-ratios for responses across all concepts, by all scales, by factors and position.

Tables displaying means, standard deviations, and t-ratios were employed to determine tendencies for the respondents over the twelve concepts.

The Personal Interviews

Administration of the semantic differential career education mailed questionnaire indicated how the subjects felt about selected career education concepts on a scale of one to seven bipolar adjectives. The questionnaire did not indicate why the subjects felt as they indicated. To further clarify the reason(s) why subjects felt as they did, personal interviews (see Appendix 4, Personal Interview Questions) were conducted by the investigator with randomly selected subjects. The subjects interviewed represented the ICEP, non ICEP, teachers, principals, and superintendents shown in the chart below. Teachers interviewed were equally distributed among the three areas in the initial selection of subjects: Math and/or science, humanities, vocational-technical.

	Teachers	Principals	Superin- tendents	Total
ICEP	9	3	3	15
Non ICEP	9	3	3	15
TOTAL	18	6	6	30

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

The purpose of this study was to measure the effect of a secondary level comprehensive career education exemplary project, the Iowa Career Education Project (ICEP), as indicated by the meanings or attitudes held by school personnel (superintendents, principals, and teachers) toward certain career education concepts. The technique used to collect the data to accomplish this purpose was the semantic differential, developed by Osgood, Suci, and Tannenbaum,⁸⁵ and personal interviews following the completion of the questionnaire.

A total of 80 copies of the semantic differential were distributed to school personnel in the two subpopulations of the example. Seventy-six useable forms were returned, which constituted a return rate of approximately 95 percent (see Appendix G).

The responses to the twelve concepts being judged along the ten bipolar scales were processed by using the Statistical Package for the Social Sciences,

SSPSS H-version 5.01,⁸⁶ which was last updated January 29, 1974.

Use was also made of the sub-program "Breakdown" which computed the means, standard deviations, and t-ratios.⁸⁷

This chapter consists of four parts. Part one is a written and tabular description of the responses across all concepts and by all scales. A composite table from which overall inferences were made precedes tables that break down each test conducted into factors. The three factors used in this study, after Osgood et al., were identified as evaluative, potency, and activity. The evaluative factor consisted of the scales: meaningful-meaningless, good-bad, positive-negative, and successful-unsuccessful. The potency factor consisted of the scales: Progressive-traditional, expanding, limiting, and strong-weak. The activity factor consisted of the scales: interesting-boring, important-unimportant, and new-old. The final written and tabular description in part one is broken down by factor and position. Position refers to administrators, superintendents, and principals, and teachers from three subject areas: math/science, humanities, and vocational-technical.

Part two of this chapter presents a summary of the standard deviations, means, and t-ratios for each of the concepts, across the scales, broken down by factor

and position. Part three is an examination of the specific questions under consideration in this study. Part four is a thematic analysis of the data obtained from the personal interviews.

ICEP with Non ICEP

An analysis of the means, standard deviations, and t-test of significance for the difference between means, was conducted to consider the difference of responses for the respective groups (ICEP and Non ICEP) across all concepts and by all scales. Table I presents an analysis of this data. The table discloses that ICEP personnel have higher mean scores on all twelve of the concepts rated and smaller standard deviations on eleven of the twelve concepts rated. The difference between means for eight concepts--Iowa Career Education Model, Career Information Center, Hands-on Experiences, Career Awareness, Vocational Education, Career Integration, Career Accommodation, and Self Concept--is significant at the .05 level.

Further analysis for the two groups across concepts, by scales, was achieved by breaking down the concepts into the three factors that have been defined. Table II represents a breakdown on the evaluative factor and exhibits higher mean scores on all twelve concepts for the ICEP personnel and smaller standard deviations on nine of twelve concepts for this same group. Seven

TABLE I.--ICEP with Non ICEP: All Factors.

Concepts	ICEP N=36	Non ICEP N=40	t	p(2-tail)
Career Exploration	5.58 ^a 0.76 ^b	5.34 0.90	1.25	0.22
Iowa Career Education Model	5.42 0.91	4.92 0.98	2.28	0.03 ^c
Career Information	5.59 0.78	5.16 0.13	2.21	0.03 ^c
Hands-On Experiences	5.76 0.73	5.34 1.00	2.10	0.04 ^c
Occupational Clusters	5.32 0.82	5.14 0.88	0.96	0.34
Career Awareness	5.76 0.72	5.30 1.00	2.24	0.03 ^c
Vocational Education	5.59 0.76	4.93 1.14	2.93	0.00 ^c
Career Integration	5.51 0.77	5.06 0.78	2.53	0.01 ^c
World of Work	5.36 1.09	5.23 1.01	0.51	0.61
Career Preparation	5.58 0.78	5.22 0.94	1.79	0.08
Career Accommodation	5.35 0.86	4.66 0.88	3.50	0.00 ^c
Self Concept	6.00 0.79	5.37 1.07	2.90	0.01 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE II.--ICEP with Non ICEP: Evaluative Factor.

Concepts	ICEP N=36	Non ICEP N=40	t	p (2-tail)
Career Exploration	5.86 ^a 0.75 ^b	5.48 1.05	1.83	0.07
Iowa Career Education Model	5.47 0.99	4.96 1.03	2.22	0.03 ^c
Career Information Center	5.66 0.93	5.23 1.00	1.92	0.06
Hands-On Experiences	6.07 0.81	5.64 1.06	1.95	0.06
Occupational Clusters	5.45 0.83	5.32 0.95	0.64	0.52
Career Awareness	6.09 0.67	5.66 0.96	2.26	0.03 ^c
Vocational Education	6.12 5.39	0.84 1.16	3.12	0.00 ^c
Career Integration	5.66 0.91	5.19 0.83	2.36	0.02 ^c
World of Work	5.60 1.14	5.48 1.03	0.52	0.61
Career Preparation	6.01 0.78	5.49 1.01	2.53	0.01 ^c
Career Accommodation	5.40 0.98	4.76 0.95	2.90	0.01 ^c
Self Concept	6.24 0.68	5.55 1.12	3.18	0.00 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

concepts--Iowa Career Education Model, Career Awareness, Vocational Education, Career Integration, Career Preparation, Career Accommodation, and Self Concept--are significant at the .05 level. None of these concepts have a significant negative t-ratio.

Table III presents a breakdown on the potency factor. Examination of the table discloses that the ICEP personnel have a higher mean score on all twelve concepts and smaller standard deviations on six of the twelve concepts. Five concepts--Hands-on Experiences, Career Awareness, Vocational Education, Career Accommodation, and Self Concept--are significant at the .05 level. No concepts have negative t-ratios.

Table IV represents a breakdown on the activity factor and exhibits a higher mean score on all twelve concepts for the ICEP personnel and smaller standard deviations on all twelve concepts for the same group. Six of the concepts are reported significant at the .05 level. They are: Iowa Career Education Model, Career Information Center, Vocational Education, Career Integration, Career Accommodation, and Self Concept. None of the concepts have negative t-ratios.

ICEP Teachers with Non ICEP Teachers

An analysis of the means, standard deviations, and t-test of significance of the difference between means, was conducted to consider the differences of

TABLE III.--ICEP with Non ICEP: Potency Factor.

Concepts	ICEP N=36	Non ICEP N=40	t	p(2-tail)
Career Exploration	5.20 ^a 1.04 ^b	5.15 1.04	0.22	0.82
Iowa Career Education Model	5.21 1.14	4.84 1.09	1.45	0.15
Career Information Center	5.40 0.94	5.10 1.08	1.27	0.21
Hands-On Experiences	5.49 1.00	4.97 1.23	2.02	0.05 ^c
Occupational Clusters	5.19 1.01	4.92 1.09	1.11	0.27
Career Awareness	5.46 0.96	4.88 1.41	2.10	0.04 ^c
Vocational Education	5.08 1.27	4.37 1.38	2.35	0.02 ^c
Career Integration	5.11 0.88	4.92 0.87	0.97	0.34
World of Work	4.99 1.36	4.97 1.29	0.08	0.94
Career Preparation	5.16 1.22	4.89 1.06	1.02	0.31
Career Accommodation	5.20 0.99	4.48 0.93	3.31	0.00 ^c
Self Concept	5.72 1.16	5.15 1.24	2.08	0.04 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE IV.--ICEP with Non ICEP: Activity Factor.

Concepts	ICEP N=36	Non ICEP N=40	t	p (2-tail)
Career Exploration	5.57 ^a 0.91 ^b	5.33 0.93	1.09	0.28
Iowa Career Education Model	5.55 0.96	4.95 1.05	2.57	0.01 ^c
Career Information Center	5.70 0.82	5.12 0.96	2.84	0.01 ^c
Hands-On Experiences	5.63 0.89	5.30 1.16	1.38	0.17
Occupational Clusters	5.29 0.89	5.11 1.03	0.81	0.42
Career Awareness	5.60 0.85	5.26 1.11	1.50	0.14
Vocational Education	5.38 0.89	4.88 1.14	2.14	0.04 ^c
Career Integration	5.69 0.86	5.02 0.96	3.23	0.00 ^c
World of Work	5.39 1.06	5.18 1.07	0.88	0.38
Career Preparation	5.43 0.78	5.20 1.05	1.05	0.30
Career Accommodation	5.44 0.78	4.69 0.93	3.76	0.00 ^c
Self Concept	5.97 0.85	5.35 1.08	2.77	0.01 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

responses for the teachers of the respective groups (ICEP and Non ICEP) across all concepts and by all scales. Table V presents this analysis. The table displays that eleven of the twelve concepts have higher means and smaller standard deviations on ten to twelve concepts for the ICEP teachers. One concept, Career Accommodation, is significant at .05 level. The concept, World of Work, has a negative t-ratio, but not at a significant level.

Table VI presents a breakdown for the teachers groups on the evaluation factor and discloses that ten of twelve means are higher and nine of twelve standard deviations are smaller for the ICEP teachers. None of the concepts have significant t-ratios at the .05 level. Two concepts, Occupational Clusters and World of Work, have negative t-ratios but not at the significance level.

Table VII presents a breakdown for teachers on the potency factor and exhibits that eleven of the twelve concepts have higher mean scores and seven of the twelve concepts have smaller standard deviations for the ICEP teachers. One of the concepts, Career Accommodation, is significant at the .05 level; one of the concepts, World of Work, has a negative t-ratio, but at a level less than significant.

Table VIII presents a breakdown for teachers on the activity factor and displays higher means on nine

TABLE V.--Teachers with Teachers: All Factors.

Concepts	ICEP N=21	Non ICEP N=24	t	p (2-tail)
Career Exploration	5.39 ^a 0.83 ^b	5.25 0.87	0.56	0.58
Iowa Career Education Model	5.20 1.01	4.86 0.99	1.14	0.26
Career Information Center	5.54 0.84	5.08 1.00	1.66	0.10
Hands-On Experiences	5.61 0.83	5.38 0.99	0.87	0.39
Occupational Clusters	5.18 0.92	5.15 1.00	0.08	0.94
Career Awareness	5.55 0.77	5.30 1.03	0.91	0.37
Vocational Education	5.60 0.87	5.02 1.29	1.74	0.09
Career Integration	5.25 0.79	5.03 0.86	0.87	0.39
World of Work	4.95 1.18	5.14 1.02	-0.58	0.57
Career Preparation	5.41 0.85	5.19 0.97	0.81	0.42
Career Accommodation	5.12 0.83	4.51 0.86	2.42	0.02 ^c
Self Concept	5.69 0.87	5.35 0.98	1.21	0.24

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE VI.--Teachers with Teachers: Evaluative Factor.

Concepts	ICEP N=21	Non ICEP N=24	t	p (2-tail)
Career Exploration	5.63 ^a 0.84 ^b	5.47 1.01	0.58	0.56
Iowa Career Education Model	5.18 1.07	4.89 1.00	0.95	0.35
Career Information Center	5.56 0.95	5.10 1.04	1.52	0.14
Hands-On Experiences	5.96 0.96	5.70 1.07	0.87	0.39
Occupational Clusters	5.25 0.91	5.35 1.04	-0.36	0.72
Career Awareness	5.94 0.77	5.74 0.92	0.79	0.44
Vocational Education	6.02 5.45	1.05 1.34	1.59	0.12
Career Integration	5.44 5.15	1.05 0.89	1.02	0.31
World of Work	5.23 1.30	5.34 1.09	-0.33	0.74
Career Preparation	5.93 0.91	5.49 1.03	1.50	0.14
Career Accommodation	5.14 1.03	4.65 1.00	1.64	0.11
Self Concept	6.01 0.79	5.49 1.04	1.88	0.07

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE VII.--Teachers with Teachers: Potency Factor.

Concepts	ICEP N=21	Non ICEP N=24	t	p (2-tail)
Career Exploration	5.14 ^a 1.10 ^b	4.97 0.99	0.55	0.59
Iowa Career Education Model	5.02 1.28	4.72 1.12	0.82	0.42
Career Information Center	5.40 1.04	4.97 1.19	1.27	0.21
Hands-On Experiences	5.27 1.10	4.82 1.29	1.25	0.22
Occupational Clusters	5.13 1.17	4.83 1.34	0.78	0.44
Career Awareness	5.16 1.03	4.63 1.61	1.30	0.20
Vocational Education	5.25 1.40	4.49 1.58	1.71	0.09
Career Integration	4.81 0.79	4.79 0.96	0.07	0.95
World of Work	4.56 1.53	4.81 1.33	-0.59	0.56
Career Preparation	4.98 1.42	4.81 1.11	0.47	0.64
Career Accommodation	4.95 1.01	4.28 0.92	2.34	0.02 ^c
Self Concept	5.33 1.33	5.18 1.22	0.40	0.69

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE VIII.--Teachers with Teachers: Activity Factor.

Concepts	ICEP N=21	Non ICEP N=24	t	p (2-tail)
Career Exploration	5.32 ^a 0.97 ^b	5.24 0.98	0.28	0.78
Iowa Career Education Model	5.41 1.02	4.96 1.10	1.43	0.16
Career Information Center	5.67 0.80	5.17 1.01	1.82	0.08
Hands-On Experiences	5.49 0.83	5.50 1.02	-0.03	0.98
Occupational Clusters	5.13 1.03	5.21 1.12	-0.25	0.80
Career Awareness	5.43 0.86	5.40 1.03	0.09	0.93
Vocational Education	5.38 1.02	4.99 1.19	1.18	0.24
Career Integration	5.43 0.94	5.13 0.98	1.05	0.30
World of Work	4.98 1.07	5.21 0.96	-0.74	0.46
Career Preparation	5.16 0.74	5.18 1.09	-0.08	0.94
Career Accommodation	5.25 0.66	4.56 0.85	3.05	0.00 ^c
Self Concept	5.62 0.91	5.35 0.93	0.99	0.33

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

of twelve and smaller standard deviations on eleven of twelve concepts for the ICEP teachers. One concept, Career Accommodation, is significant at the .05 level. Four concepts, Hands-on Experiences, Occupational Clusters, World of Work, and Career Preparation, have negative t-ratios although not significant.

Administrators (ICEP) with
Administrators (Non ICEP)

An analysis of the means, standard deviations, and t-test of significance of the difference between means was conducted to consider the difference of responses for the administrators (superintendents and principals) of the respective groups (ICEP and Non ICEP), across all concepts, by all scales. Table IX presents this analysis.

Examination of the table discloses higher means on all twelve concepts for the ICEP administrators. All twelve of the standard deviations are smaller for this same group. The seven concepts of: Iowa Career Education Model, Hands-On Experiences, Career Awareness, Vocational Education, Career Integration, Career Accommodation, and Self Concept, are significant at the .05 level. There are no negative t-ratios reported in Table IX.

Table X presents a breakdown for administrators on the evaluative factor and exhibits higher means on

TABLE IX.--Administrators with Administrators: All Factors.

Concepts	ICEP N=15	Non ICEP N=16	t	p (2-tail)
Career Exploration	5.83 ^a 0.59 ^b	5.46 0.96	1.29	0.21
Iowa Career Education Model	5.72 0.65	5.01 0.99	2.34	0.03 ^c
Career Information Center	5.67 0.73	5.27 0.82	1.43	0.16
Hands-On Experiences	5.97 0.51	5.28 1.06	2.29	0.03 ^c
Occupational Clusters	5.53 0.63	5.11 0.68	1.79	0.08
Career Awareness	6.04 0.54	5.30 1.00	2.55	0.02 ^c
Vocational Education	5.57 0.60	4.79 0.88	2.86	0.01 ^c
Career Integration	5.87 0.59	5.09 0.68	3.40	0.00
World of Work	5.92 0.64	5.37 1.02	1.79	0.08
Career Preparation	5.81 0.62	5.27 0.94	1.90	0.07
Career Accommodation	5.68 0.81	4.88 0.89	2.62	0.01 ^c
Self Concept	6.44 0.35	5.39 1.23	3.17	0.00 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE X.--Administrators with Administrators: Evaluative Factor.

Concepts	ICEP N=15	Non ICEP N=16	t	p (2-tail)
Career Exploration	6.18 ^a 0.48 ^b	5.48 1.14	2.21	0.04 ^c
Iowa Career Education Model	5.88 0.70	5.06 1.10	2.46	0.02 ^c
Career Information Center	5.80 0.92	5.42 0.94	1.13	0.27
Hands-On Experiences	6.22 0.52	5.56 1.08	2.13	0.04 ^c
Occupational Clusters	5.73 0.68	5.27 0.83	1.71	0.10
Career Awareness	6.30 0.47	5.53 1.03	2.64	0.01 ^c
Vocational Education	6.25 0.40	5.30 0.84	4.00	0.00 ^c
Career Integration	5.97 0.60	5.25 0.75	2.92	0.01 ^c
World of Work	6.13 0.59	5.67 0.94	1.63	0.12
Career Preparation	6.13 0.57	5.48 1.00	2.21	0.04 ^c
Career Accommodation	5.77 0.81	4.94 0.86	2.76	0.01 ^c
Self Concept	6.55 0.30	5.64 1.26	2.72	0.01 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

all concepts and smaller standard deviations on all of the twelve concepts for the ICEP administrators. The ten concepts that are significant at the .05 level are: Career Exploration, Iowa Career Education Model, Hands-On Experiences, Occupational Clusters, Career Awareness, Vocational Education, Career Integration, Career Preparation, Career Accommodation, and Self Concept. No negative t-ratios are indicated.

Table XI presents a breakdown for administrators on the potency factor. Examination of the table discloses higher means on eleven of twelve concepts for the ICEP administrators. Nine of the standard deviations are smaller for the same group. The three concepts of Career Awareness, Career Accommodation, and Self Concept are significant at the .05 level. Career Exploration is the only concept with a negative t-ratio.

Table XII displays a breakdown for administrators on the activity factor and exhibits higher means on all twelve concepts and smaller standard deviations on all twelve concepts for the ICEP administrators. Nine concepts--Iowa Career Education Model, Career Information Center, Occupational Clusters, Career Awareness, Vocational Education, Career Integration, World of Work, Career Accommodation, and Self Concept are significant at the .05 level.

TABLE XI.--Administrators with Administrators: Potency Factor.

Concepts	ICEP N=15	Non ICEP N=16	t	p (2-tail)
Career Exploration	5.29 ^a 0.99 ^b	5.42 1.09	-0.34	0.74
Iowa Career Education Model	5.49 0.87	5.02 1.04	1.35	0.19
Career Information Center	5.40 0.83	5.29 0.89	0.35	0.73
Hands-On Experiences	5.80 0.76	5.19 1.15	1.74	0.09
Occupational Clusters	5.27 0.77	5.04 0.54	0.95	0.35
Career Awareness	5.89 0.66	5.25 0.99	2.10	0.04 ^c
Vocational Education	4.84 1.06	4.19 1.04	1.74	0.09
Career Integration	5.53 0.84	5.10 0.70	1.55	0.13
World of Work	5.60 0.80	5.21 1.22	1.05	0.30
Career Preparation	5.40 0.83	5.02 0.99	1.16	0.26
Career Accommodation	5.56 0.88	4.77 0.88	2.48	0.02 ^c
Self Concept	6.27 0.54	5.10 1.31	3.19	0.00 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE XII.--Administrators with Administrators: Activity Factor.

Concepts	ICEP N=15	Non ICEP N=16	t	p (2-tail)
Career Exploration	5.91 ^a 0.72 ^b	5.48 0.86	1.51	0.14
Iowa Career Education Model	5.73 0.87	4.94 1.01	2.34	0.03 ^c
Career Information Center	5.76 0.88	5.04 0.91	2.22	0.03 ^c
Hands-On Experiences	5.82 0.97	5.00 1.33	1.96	0.06
Occupational Clusters	5.51 0.62	4.96 0.87	2.03	0.05 ^c
Career Awareness	5.84 0.81	5.04 1.21	2.16	0.04 ^c
Vocational Education	5.38 0.69	4.71 1.07	2.06	0.05 ^c
Career Integration	6.07 0.57	4.85 0.93	4.36	0.00 ^c
World of Work	5.96 0.74	5.13 1.24	2.24	0.03 ^c
Career Preparation	5.80 0.70	5.23 1.03	1.79	0.08
Career Accommodation	5.69 0.90	4.90 1.02	2.29	0.03 ^c
Self Concept	6.47 0.41	5.35 1.31	3.13	0.00 ^c

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

Teachers (ICEP and Non ICEP) with
Administrators (ICEP and Non ICEP)

An analysis of the means, standard deviations, and t-test of significance of the difference between means was conducted to consider the difference of responses for the teachers of the ICEP and Non ICEP schools with the responses of the administrators of the ICEP and Non ICEP schools across all concepts, by all scales. This analysis, with disregard to ICEP affiliation, was executed to display the effect participation in the ICEP had on responses.

Table XIII reveals that teachers (ICEP and Non ICEP) have higher means on one of the twelve concepts and smaller standard deviations on two of the twelve concepts. The concepts of World of Work and Career Accommodation have negative t-ratios and are significant at the .05 level. This table discloses that disregarding the affiliation with the ICEP drastically changes the amount of significance and suggests that participation in the ICEP influenced the respondents' judgments.

Table XIV presents a breakdown for this grouping (all teachers with all administrators) on the evaluative factor. The table discloses no higher means and three smaller standard deviations for the teachers (ICEP and Non ICEP). The concept, Career Accommodation, has a significant negative t-ratio. This table further

TABLE XIII.--All Teachers with All Administrators: All Factors.

Concepts	Teachers N=45	Adminis- trators N=31	t	p(2-tail)
Career Exploration	5.32 ^a 0.84 ^b	5.64 0.81	-1.69	0.10
Iowa Career Education Model	5.02 1.01	5.36 0.90	-1.50	0.14
Career Information Center	5.30 0.95	5.46 0.79	-0.79	0.43
Hands-On Experiences	5.49 0.91	5.62 0.90	-0.61	0.54
Occupational Clusters	5.16 0.95	5.31 0.68	-0.73	0.47
Career Awareness	5.42 0.91	5.66 0.88	-1.13	0.26
Vocational Education	5.29 1.14	5.17 0.84	0.53	0.60
Career Integration	5.13 0.83	5.47 0.74	-1.79	0.08
World of Work	5.05 1.09	5.64 0.89	-2.46	0.02 ^c
Career Preparation	5.30 0.91	5.53 0.83	-1.15	0.25
Career Accommodation	4.79 0.89	5.27 0.93	-2.22	0.03 ^c
Self Concept	5.51 0.94	5.90 1.05	-1.69	0.10

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE XIV.--All Teachers with All Administrators:
Evaluative Factor.

Concepts	Teachers N=45	Adminis- trators N=31	t	p(2-tail)
Career Exploration	5.54 ^a 0.93 ^b	5.82 0.94	-1.28	0.20
Iowa Career Education Model	5.02 1.04	5.46 1.00	-1.83	0.07
Career Information Center	5.32 1.02	5.61 0.94	-1.25	0.21
Hands-On Experiences	5.82 1.02	5.88 0.90	-0.25	0.80
Occupational Clusters	5.31 0.97	5.49 0.79	-0.89	0.38
Career Awareness	5.83 0.85	5.90 0.89	-0.35	0.73
Vocational Education	5.72 1.24	5.76 0.81	-0.16	0.87
Career Integration	5.28 0.97	5.60 0.76	-1.51	0.14
World of Work	5.29 1.18	5.90 0.81	-2.48	0.02 ^c
Career Preparation	5.69 0.99	5.80 0.87	-0.47	0.64
Career Accommodation	4.88 1.03	5.34 0.92	-2.00	0.05 ^c
Self Concept	5.73 0.96	6.08 1.02	-1.51	0.14

^aDenotes Mean.^bDenotes Standard Deviation.^cDenotes significance at $\alpha = .05$ ($t=1.96$).

suggests that involvement in the ICEP influenced the responses to the concepts across the scales.

Table XV is a breakdown for this grouping on the potency factor and displays higher means on one concept and smaller standard deviations on none of the twelve concepts for the teachers (ICEP and Non ICEP). The difference between means for the four concepts of Career Awareness, Career Integration, World of Work, and Career Accommodation have negative t-ratios significant at the .05 level.

Table XVI is a breakdown for this grouping on the activity dimension. Examination of the table reveals higher mean scores for three concepts and lower standard deviations for seven concepts for the teachers (ICEP and Non ICEP) as a group. The concept of Career Exploration has a negative t-ratio and is significant at the .05 level.

These sixteen tables, when taken as a whole, disclose a pattern of higher means and smaller standard deviations for the ICEP personnel. The tables also suggest that certain of the twelve concepts judged were emphasized in the secondary school portion of the ICEP and that ICEP participation influenced the responses.

Summary of Tables I Through XVI

A summary of the tables for the standard deviations, means, and t-ratios is presented in Part Two of

TABLE XV.--All Teachers with All Administrators: Potency Factor.

Concepts	Teachers N=45	Adminis- trators N=31	t	p (2-tail)
Career Exploration	5.05 ^a 1.03 ^b	5.36 1.03	-1.26	0.21
Iowa Career Education Model	4.86 1.19	5.25 0.98	-1.50	0.14
Career Information Center	5.17 1.13	5.34 0.85	-0.73	0.47
Hands-On Experiences	5.03 1.21	5.48 1.01	-1.71	0.09
Occupational Clusters	4.97 1.26	5.15 0.66	-0.73	0.47
Career Awareness	4.87 1.38	5.56 0.89	-2.43	0.02 ^c
Vocational Education	4.84 1.53	4.51 1.09	1.06	0.29
Career Integration	4.80 0.88	5.31 0.79	-2.60	0.01 ^c
World of Work	4.69 1.42	5.40 1.04	-2.38	0.02 ^c
Career Preparation	4.89 1.26	5.20 0.92	-1.20	0.24
Career Accommodation	4.59 1.01	5.15 0.95	-2.42	0.02 ^c
Self Concept	5.25 1.26	5.67 1.16	-1.46	0.15

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

TABLE XVI.--All Teachers with All Administrators:
Activity Factor.

Concepts	Teachers N=45	Adminis- trators N=31	t	p(2-tail)
Career Exploration	5.27 ^a 0.97 ^b	5.69 0.81	-1.96	0.05 ^c
Iowa Career Education Model	5.17 1.08	5.32 1.01	-0.62	0.54
Career Information Center	5.40 0.94	5.39 0.95	0.06	0.95
Hands-On Experiences	5.50 0.92	5.40 1.22	0.40	0.69
Occupational Clusters	5.17 1.07	5.23 0.80	-0.25	0.81
Career Awareness	5.42 0.95	5.43 1.10	-0.06	0.95
Vocational Education	5.17 1.12	5.03 0.95	0.56	0.58
Career Integration	5.27 0.97	5.44 0.98	-0.77	0.45
World of Work	5.10 1.01	5.53 1.10	-1.74	0.09
Career Preparation	5.17 0.93	5.51 0.92	-1.55	0.13
Career Accommodation	4.88 0.84	5.28 1.03	-1.86	0.07
Self Concept	5.47 0.92	5.89 1.12	-1.78	0.08

^aDenotes Mean.

^bDenotes Standard Deviation.

^cDenotes significance at $\alpha = .05$ ($t=1.96$).

this chapter. Table XVII presents a composite of Tables I through XII for the standard deviations for all concepts, ICEP with Non ICEP. Examination of the table reveals that 115 out of a possible 144 standard deviations were smaller for the ICEP personnel.

Table XVIII presents a composite view of Tables XIII through XVI for the standard deviations for all concepts when ICEP affiliation is disregarded.

The table reveals that twelve out of a possible forty-eight standard deviations were smaller for teachers (ICEP and Non ICEP) when compared with administrators (ICEP and Non ICEP).

Table XIX presents a composite of Tables I through XII for the means for all concepts, ICEP and Non ICEP. Examination of the tables reveals that 135 out of 144 means were higher for ICEP personnel.

Table XX presents a composite of Tables XIII through XVI for means for all concepts when ICEP affiliation is disregarded. The table reveals that four out of forty-eight means were higher for teachers (ICEP and Non ICEP) when compared with administrators (ICEP and Non ICEP).

Table XXI presents a composite of Tables I through XII for t-ratios for all concepts, ICEP with Non ICEP. Examination of the table reveals that 56 out of 144 t-ratios were significant at the .05 level.

TABLE XVII.--Summary of Standard Deviations: All Concepts--ICEP with Non ICEP.

Concepts	From Tables												Totals
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Career Exploration	x	x	-	x	x	x	-	x	x	x	x	x	10
Iowa Career Education Model	x	x	-	x	-	x	-	x	x	x	x	x	9
Career Information Center	x	-	-	x	x	x	x	x	x	x	x	x	10
Hands-On Experiences	x	x	-	x	x	x	x	x	x	x	x	x	11
Occupational Clusters	x	x	-	x	x	x	x	x	x	x	-	x	10
Career Awareness	x	x	-	x	x	x	x	x	x	x	x	x	11
Vocational Education	x	x	x	x	x	x	x	x	x	x	-	x	11
Career Integration	x	-	-	x	x	-	x	x	x	x	-	x	8
World of Work	-	-	-	x	-	-	x	-	x	x	x	x	6
Career Preparation	x	x	-	x	x	x	-	x	x	x	x	x	10
Career Accommodation	x	-	-	x	x	-	-	x	x	x	x	x	8
Self Concept	x	x	x	x	x	x	-	x	x	x	x	x	11
TOTAL													115/144

NOTE: x Denotes lower standard deviation for ICEP Personnel.

TABLE XVIII.--Summary of Standard Deviations: All
Concepts--All Teachers with All Administrators.

Concepts	From Tables				Totals
	XIII	XIV	XV	XVI	
Career Exploration	-	x	-	-	1
Iowa Career Education Model	-	-	-	-	0
Career Information Center	-	-	-	x	1
Hands-On Experiences	-	-	-	x	1
Occupational Clusters	-	-	-	-	0
Career Awareness	-	x	-	x	2
Vocational Education	-	-	-	-	0
Career Integration	-	-	-	x	1
World of Work	-	-	-	x	1
Career Preparation	-	-	-	-	0
Career Accommodation	x	-	-	x	2
Self Concept	x	x	-	x	3
TOTAL					12/48

NOTE: x Denotes lower standard deviation for all
teachers (ICEP and Non ICEP).

TABLE XIX.--Summary of Means: All Concepts--ICEP with Non ICEP.

Concepts	From Tables												Totals
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Career Exploration	x	x	x	x	x	x	x	x	x	x	-	x	11
Iowa Career Education Model	x	x	x	x	x	x	x	x	x	x	x	x	12
Career Information Center	x	x	x	x	x	x	x	x	x	x	-	x	11
Hands-On Experiences	x	x	x	x	x	x	x	-	x	x	x	x	11
Occupational Clusters	x	x	x	x	x	-	x	x	x	x	-	x	10
Career Awareness	x	x	x	x	x	x	x	x	x	x	x	x	12
Vocational Education	x	x	x	x	x	x	x	x	x	x	x	x	12
Career Integration	x	x	x	x	x	x	x	x	x	x	x	x	12
World of Work	x	x	x	x	-	-	-	-	x	x	x	x	8
Career Preparation	x	x	x	x	x	x	x	x	x	x	x	x	12
Career Accommodation	x	x	x	x	x	x	x	x	x	x	x	x	12
Self Concept	x	x	x	x	x	x	x	x	x	x	x	x	12
TOTAL													135/144

NOTE: x Denotes higher means for ICEP Personnel.

TABLES XX.--Summary of Means: All Concepts--All Teachers
with All Administrators.

Concepts	From Tables				Totals
	XIII	XIV	XV	XVI	
Career Exploration	-	-	-	-	0
Iowa Career Education Model	-	-	-	-	0
Career Information Center	-	-	-	x	1
Hands-On Experiences	-	-	-	x	1
Occupational Clusters	-	-	-	-	0
Career Awareness	-	-	-	-	0
Vocational Education	x	-	x	x	3
Career Integration	-	-	-	-	0
World of Work	-	-	-	-	0
Career Preparation	-	-	-	-	0
Career Accommodation	-	-	-	-	0
Self Concept	-	-	-	-	0
TOTAL					5/48

NOTE: x Denotes higher mean for all teachers (ICEP and Non ICEP).

TABLES XX.--Summary of Means: All Concepts--All Teachers
with All Administrators.

Concepts	From Tables				Totals
	XIII	XIV	XV	XVI	
Career Exploration	-	-	-	-	0
Iowa Career Education Model	-	-	-	-	0
Career Information Center	-	-	-	x	1
Hands-On Experiences	-	-	-	x	1
Occupational Clusters	-	-	-	-	0
Career Awareness	-	-	-	-	0
Vocational Education	x	-	x	x	3
Career Integration	-	-	-	-	0
World of Work	-	-	-	-	0
Career Preparation	-	-	-	-	0
Career Accommodation	-	-	-	-	0
Self Concept	-	-	-	-	0
TOTAL					5/48

NOTE: x Denotes higher mean for all teachers (ICEP and Non ICEP).

TABLE XXI.--Summary of t-ratios: All Concepts--ICEP with Non ICEP.

Concepts	From Tables												Totals
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Career Exploration	-	-	-	-	-	-	-	-	-	X	-	-	1
Iowa Career Education Model	X	X	-	X	-	-	-	-	X	X	-	X	6
Career Information Center	X	-	-	X	-	-	-	-	-	-	-	X	3
Hands-On Experiences	X	-	X	-	-	-	-	-	X	X	-	-	4
Occupational Clusters	-	-	-	-	-	-	-	-	-	X	-	-	1
Career Awareness	X	X	X	-	-	-	-	-	X	X	X	X	7
Vocational Education	X	X	X	X	-	-	-	-	X	X	-	X	7
Career Integration	X	X	-	X	-	-	-	-	X	X	-	-	5
World of Work	-	-	-	-	-	-	-	-	-	-	-	X	1
Career Preparation	-	X	-	-	-	-	-	-	-	X	-	-	2
Career Accommodation	X	X	X	X	X	-	X	X	X	X	X	X	11
Self Concept	X	X	X	X	-	-	-	-	X	X	X	X	8
TOTAL													56/144

NOTE: x Denotes significance.

Table XXII presents a composite of Tables XIII through XVI for t-ratios for all concepts when ICEP affiliation is disregarded. This table reveals that seven out of forty-eight t-ratios were significant at the .05 level when the difference of the means for all teachers (ICEP and Non ICEP) were compared with the means for all administrators (ICEP and Non ICEP).

Tables XV, XVI, XVIII, XX, and XXII, when taken collectively, disclose that disregarding ICEP affiliation affects the standard deviation, means, and number of significant t-ratios. This suggests that participation in the ICEP influenced the meanings or attitudes of the personnel responding to the career education concepts being judged. This influence results in higher means and smaller standard deviations for the ICEP personnel.

Examination of Specific Questions Under Consideration

Part Three consists of an examination of the specific questions under examination for this study and a test of the corresponding hypothesis.

Question One

Do superintendents, principals, and teachers of ICEP schools differ in their attitudes toward career education concepts from superintendents, principals, and teachers in Non ICEP schools?

TABLE XXII.--Summary of t-ratios: All Concepts--All Teachers with All Administrators.

Concepts	From Tables				Totals
	XIII	XIV	XV	XVI	
Career Exploration	-	-	-	x	1
Iowa Career Education Model	-	-	-	-	0
Career Information Center	-	-	-	-	0
Hands-On Experiences	-	-	-	-	0
Occupational Clusters	-	-	-	-	0
Career Awareness	-	-	x	-	1
Vocational Education	-	-	-	x	1
Career Integration	-	-	x	-	1
World of Work	x	x	x	-	3
Career Preparation	-	-	-	-	0
Career Accommodation	x	x	x	-	3
Self Concept	-	-	-	-	0
TOTAL					10/48

NOTE: x Denotes significant t-ratio at $\alpha = .05$ ($t=1.96$) for all teachers (ICEP and Non ICEP).

The hypothesis used to arrive at an answer to this question was: Superintendents, principals, and teachers in ICEP schools do not differ, as a group, in their attitudes toward selected career education concepts from superintendents, principals, and teachers in Non ICEP schools.

The t-tests conducted show a significant difference between means at the .05 level for seven of the concepts, as indicated by Table I. It is also shown by Table XIX that 135 of 144 mean scores for the ICEP personnel were higher for the concepts being judged. Thus the null hypothesis is rejected.

Question Two

Do intensive efforts, such as the ICEP exemplary project, result in positive attitudes related to the concept being exemplified?

The hypothesis used to arrive at an answer to this question was: Participation in the ICEP is not related to differences in the direction of polarization of attitudes held by ICEP and Non ICEP personnel toward the concept being exemplified.

The null hypothesis is rejected because as has been displayed in Table I, the t-tests conducted show a significant difference between means at the .05 level for seven of the concepts. In addition, 135 of 144

mean scores for the ICEP group were higher than for the Non ICEP group. A higher mean score indicates a more positive meaning or attitude toward the concept being judged. The concepts of Iowa Career Education Model, Career Awareness, Vocational Education, Career Integration, Career Accommodation, and Self Concept all have mean scores higher for the ICEP group. The null hypothesis is also rejected when the concepts are broken down by the evaluative, potency, and activity factors, as indicated by Tables II, III, and IV.

Question Three

Does a relationship exist between direction of polarization in attitudes toward a concept and the fact that the program received impetus as an exemplary project?

The hypothesis used to arrive at an answer to this question was: Participation in the ICEP does not affect the degree of concentration of polarization of attitudes held by ICEP and Non ICEP personnel toward the concept being exemplified.

The null hypothesis is rejected because, as has been reported in tabular form, 115 of 144 standard deviations for the ICEP personnel are smaller. A smaller standard deviation indicates less variability and a "clustering" of meaning for responses of the concepts being judged. Somewhat of an exception is the concept

of World of Work, as indicated by Table XVII, which is illustrative of a concept that received greater emphasis at the elementary level in the ICEP.

Question Four

Do school personnel, in the ICEP exemplary project schools, agree regarding attitudes held toward selected career education concepts?

The hypothesis used to arrive at an answer to this question was: Attitudes of school personnel in ICEP schools regarding selected career education concepts are not polarized in any particular direction.

The hypothesis was rejected because there is evidence to indicate that attitudes are polarized in a positive direction for ICEP personnel. The tables presented in this chapter indicate that teachers and administrators in ICEP schools have higher mean scores in 135 out of 144 cases indicating more positive attitude or meaning than Non ICEP personnel. Fifty-five out of 144 significant t-ratios were also found for the difference between the means for the two groups supporting the hypothesis that the ICEP groups are more positively polarized.

Question Five

Do school personnel, in the Non ICEP exemplary school districts, agree regarding attitudes held toward selected career education concepts?

The hypothesis used to arrive at an answer to this question was: Attitudes of school personnel in Non ICEP schools regarding selected career education concepts are not polarized in any particular direction.

The hypothesis was rejected because the tables presented indicate that Non ICEP personnel share the same direction of polarization with each other. This polarization is not as positive as the ICEP group, and has a tendency toward neutrality. The mean scores for the Non ICEP group are consistently lower, which also supports this hypothesis.

Question Six

Does the level of responsibility of the personnel in the ICEP and Non ICEP schools influence the clustering of attitudes regarding selected career education concepts?

The hypothesis used to arrive at an answer to this question was: The level of responsibility is not related to the polarization of attitudes expressed by personnel in ICEP and Non ICEP schools.

The hypothesis was accepted because, as indicated while, when all teachers (ICEP and Non ICEP) were compared with all administrators, 43 of 48 (Table XX) or 89.6 percent of the means were higher and 36 of 48 (Table XVIII) or 75.0 percent of the standard deviations

were smaller for the administrators, only 10 of 48 (Table XXII) or 20.8 percent of the means were significantly higher for all administrators at the 0.05 level of significance. These results indicate that the level of responsibility has little significant bearing on the polarization of attitudes.

Summary of Specific Questions

The analysis of the data related to the specific questions under consideration for this study has led to:

Question One:

The rejection of H_1 because the mean scores and t-ratios indicate that ICEP personnel hold different attitudes than do Non ICEP personnel.

Question Two:

The rejection of H_2 because the higher mean scores for the ICEP personnel indicate a more positive attitude or meaning toward the concepts being judged.

Question Three:

The rejection of H_3 because the lower standard deviations for the ICEP personnel indicate less variability in their responses toward the concepts being judged.

Question Four:

The rejection of H_4 because responses from ICEP personnel indicate a common core of meaning in a positive direction for the concepts being judged.

Question Five:

The rejection of H_5 because responses from Non ICEP personnel indicate a common core of meaning, with a tendency toward neutrality, for the concept being judged.

Question Six:

The acceptance of H_6 because there is no indication that the level of responsibility in either the ICEP or Non ICEP has a significant bearing on the attitudes held toward the concepts being judged.

The Personal Interviews

Part Four consists of a thematic analysis of the data obtained from the personal interviews.

Administration of the semantic differential career education mailed questionnaire indicated how the subjects felt about selected career education concepts on a scale of one to seven bipolar adjectives. The questionnaire did not indicate why the subjects felt as they indicated. To further clarify the reason(s) why subjects felt as they did, personal interviews (see Appendix 4, Personal Interview Questions) were conducted by the investigator

with randomly selected subjects. The subjects interviewed represented the ICEP, Non ICEP, teachers, principals, and superintendents as shown in the chart below. Teachers interviewed were equally distributed among the three areas in the initial selection of subjects: math and/or science, humanities, vocational-technical.

	Teachers	Principals	Superintendents	Total
ICEP	9	3	3	15
Non ICEP	9	3	3	15
TOTAL	18	6	6	30

A summary of the responses to the questions of each of the groups follows.

ICEP teachers expressed their support of career education because they think ". . . it's good for kids." They cited as developers of positive attitudes their experience in one- and two-week summer workshops, the influence of the principal, classroom teaching, informal student discussions, and exemplary project involvement. They expressed concern most often for (1) the need for continued and increased funds to further integrate career education into the curriculum; (2) the lack of time to integrate career education into the curriculum

when other competing priorities also demand attention (environmental education, family life education, etc.). Secondary concerns (mentioned less frequently) were fear of overemphasis on work and neglect of other aspects of life; the need for increased communication of the results of the program to governmental decision-making bodies to increase awareness of these decision makers of career education benefits; apparent lack of common definition of career education among those held to be career education leaders; and the need to have stronger career education leadership.

ICEP principals reported they were positive about career education because of their experience in workshops on curriculum development, the enthusiasm of their teachers, and contact with state officials. They were concerned about teachers' nonacceptance of career education and the need for increased communication with all involved with career education to increase active participation. They pointed to the need for increased public relations, both internally and externally; for liaison person(s) to connect the school, the public, the advisory committee, and work stations; for continuous effort and pressure for involvement, and especially for in-service training.

ICEP superintendents expressed their support of career education based on need of students that

career education appears to fill, participation in State Department of Public Instruction workshops, and involvement in the exemplary project. The superintendents expressed concern for some high school teachers' resistance to integrating career education into the curriculum, and expressed the need for more funds for in-service and extended summer contracts. The superintendents observed that momentum for implementation of career education can be maintained and increased by the favorable response of the public, parents, and students, and is also aided by rewarding those who help, by peer pressure, and by teacher training institutions' involvement. Concern was expressed for the need to establish priorities--state and federal--in curriculum planning. The curriculum can be continually supplemented only when something else is removed to make adequate room for the new supplement.

The ICEP principals and superintendents were concerned with teachers who weren't integrating career education into the curriculum. They pointed to the need for increased in-service training. The principals pointed also to the need for an internal and external public relations officer.

The superintendents emphasized the response of students, parents, and the public as the main motivator

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The ICEP principals and superintendents were concerned with teachers who weren't integrating career education into the curriculum. They pointed to the need for increased in-service training. The principals pointed also to the need for an internal and external public relations officer.

The superintendents emphasized the response of students, parents, and the public as the main motivator

of continued development and implementation of career education.

It appears that the superintendents expressed the clearest understanding of career education and the conditions for and mechanics of its implementation. The understanding of the principals was nearly equivalent, but more localized, as if directed by their greater (compared to superintendents) emphasis on teachers as the key. Teachers' understanding was more in terms of the curriculum. All shared the views on the importance of more time and money.

The similarities of responses from the three groups of ICEP interviewees are the support of the career education concepts because of the belief that career education "is good for kids." This belief resulted from in-service training, participation in the ICEP, and interaction with students, parents, and others. High school teachers were concerned with possible overemphasis on the world of work to the exclusion of other areas of life and the need for improved and continuous leadership.

A summary of the Non ICEP interviewees' responses is reported below according to their group. Non ICEP teachers were positive towards career education because of the belief that career education has something valuable for students. This belief is based on their

observations of students' interests and needs, and understanding of the role career education plays in meeting those interests and needs. They expressed caution to "wait and see" the results of career education and expressed the idea that it is a fad, suggested less enthusiasm and more precision from its proponents, and expressed confusion as to how to integrate career education into some areas of the curriculum.

Non ICEP principals expressed support of career education based on their analyses of students' needs and exposure to vocational-technical programs such as cooperative and work-study education. They expressed concern for the need for clarification of terms, e.g., is vocational education the same as career education. They observed the need for more in-service training to help teachers who feel too busy, or who are reluctant to change. They expressed the need for a career education director at the building level and for an active advisory committee. They were concerned with the lack of time and money to do the job. They felt the mass media can do much to change the stereotype about certain jobs and that area schools deserve more emphasis. A key to implementation was seen as placement of career education-oriented personnel in key decision-making positions.

Non ICEP superintendents were positive toward career education because of the success of vocational programs in their districts, and seminars on and visitations to career education programs. They feel that most college-educated educators are reluctant to accept the idea that success is not based on college education; this hinders acceptance of career education. Superintendents expressed that community involvement is a key to career education's implementation as is in-service training, and increased awareness of the changing job market. Non ICEP superintendents emphasized increased and continued funding as an aid to career education's implementation.

In summary, the non ICEP interviewees expressed support of career education based on the belief that it fills some important needs of students. Non ICEP teachers were tentative in the commitment and wanted to know more about career education. The principals' exposure to vocational programs made them more favorable. They wanted personnel, time, and money for career education's implementation and were concerned with teachers' sometimes reluctant attitudes. They saw education of the public as an important means of increasing enthusiasm of teachers. Superintendents were favorably influenced by the vocational programs in their districts and by visits to other schools where career education was

being implemented. They were concerned for more money and public education to gain the support of educators who are not career education oriented. The relative during-the-job mobility of administrators and relative isolation of classroom teachers may be an important factor in their attitude development.

CHAPTER V

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

Summary

Purpose of the Study

The purpose of this study was to measure the effect of a comprehensive secondary Career Education exemplary project, as indicated by the meanings or attitudes held by school personnel (superintendents, principals, and teachers) toward certain career education concepts. The staffs of eight selected schools, in the participating districts, were to develop a locally unique program. They were guided by a Model For Career Development (Appendix F), created as part of the ICEP by the central project consultants. This model, the basic ideas of career education, and references for the participants were disseminated at workshops and conferences that were held. This was to provide consistency in all phases of development and implementation. This study measures the relation of these efforts to the attitudes of the personnel involved.

Statement of the Problem

Do school personnel in the secondary ICEP have different attitudes toward certain career education concepts when compared with attitudes of similar school personnel in Non ICEP schools, if so, what is the nature and extent of such attitudinal variation?

The specific questions to be studied were:

1. Do superintendents, principals, and teachers of secondary ICEP schools differ in their attitudes toward career education concepts from superintendents, principals, and teachers in Non ICEP schools?

2. Do intensive efforts, such as the ICEP exemplary project, result in positive attitudes related to the concept being exemplified?

3. Does a relationship exist between direction of polarization in attitudes toward a concept and the fact that the program received impetus as an exemplary project?

4. Do school personnel, in the secondary ICEP exemplary project schools, agree regarding attitudes held toward selected career education concepts?

5. Do school personnel, in Non ICEP exemplary school districts, agree regarding attitudes held toward selected career education concepts?

6. Does the level of responsibility of the personnel in the secondary ICEP or Non ICEP schools

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2. Do intensive efforts, such as the ICEP exemplary project, result in positive attitudes related to the concept being exemplified?

3. Does a relationship exist between direction of polarization in attitudes toward a concept and the fact that the program received impetus as an exemplary project?

4. Do school personnel, in the secondary ICEP exemplary project schools, agree regarding attitudes held toward selected career education concepts?

5. Do school personnel, in Non ICEP exemplary school districts, agree regarding attitudes held toward selected career education concepts?

6. Does the level of responsibility of the personnel in the secondary ICEP or Non ICEP schools

influence the clustering of attitudes regarding selected career education concepts?

Methods and Procedures

The population of interest in this study was superintendents, principals, and teachers in Iowa public schools. Two sub-populations were identified. One sub-population was the personnel from the eight ICEP pilot secondary schools. The superintendent of the ICEP school district, the principal of the pilot secondary school in the ICEP district, and one randomly selected teacher from each of three academic areas (science and/or math, humanities, and vocational-technical) in the pilot secondary school made up this sub-population.

The other sub-population consisted of personnel from eight randomly selected Non ICEP school districts. These districts were not involved in the ICEP or other major comprehensive career education exemplary projects. The superintendent of these Non ICEP school districts, the principal of the randomly selected secondary school in the Non ICEP district, and one randomly selected teacher from each of the three academic areas in the selected secondary school made up this sub-population. Care was exercised to match the Non ICEP school district with ICEP districts, relative to rural, suburban, or metropolitan characteristics.

A semantic differential was used to collect data for this study. It was supplemented by personal interviews with thirty-eight percent of the subjects of the sub-populations. Participants in the study responded to twelve career education concepts that made up the semantic differential instrument. The concepts were: Career Exploration, Iowa Career Education Model, Career Information Center, Hands-On Experiences, Occupational Clusters, Career Awareness, Vocational Education, Career Integration, World of Work, Career Preparation, Career Accommodation, and Self Concept. Each concept was rated on a series of the bipolar adjective pairs: meaningful-meaningless, traditional-progressive, good-bad, limiting-expanding, interesting-boring, weak-strong, positive-negative, unsuccessful-successful, important-unimportant, and old-new. The subjects responded by checking one of seven positions on a seven-point scale appearing between each bipolar adjective pair.

Three distinct factors were identified. The evaluative factor was represented by the bipolar adjective pairs: meaningful-meaningless, good-bad, positive-negative, and successful-unsuccessful. The potency factor was represented by the bipolar adjective pairs: progressive-traditional, expanding-limiting, and strong-weak. The activity factor was represented by the bipolar

adjective pairs: interesting-boring, important-unimportant, and new-old.

The responses were processed by use of the Statistical Package for the Social Sciences. The means, standard deviations, and t-ratios were completed across concepts, by scales, and by position.

Personal interviews were conducted in order to help clarify why subjects held the attitudes indicated by their responses to the semantic differential. Responses of the randomly selected interviewees (proportionally distributed among teachers and administrators, ICEP and Non ICEP) were reported for subgroups by ICEP and Non ICEP affiliations using a thematic analysis.

Summary of Results

The summary of results is reported according to the listing of the specific questions for this study as stated in this chapter under "Statement of the Problem":

1. It was found that school personnel in the ICEP schools differ in their attitudes toward career education concepts from school personnel in Non ICEP schools. The ICEP personnel, as a group, have a more positive attitude on all of the concepts judged. ICEP personnel were most positive on the concepts: Iowa Career Education Model, Career Awareness, Vocational Education, Career Accommodation, and Self Concept, as indicated by Table I. However, ICEP teachers were

significantly positive only toward Career Accommodation, as shown by Table V. ICEP administrators were significantly positive towards all the above concepts except Career Information Center, as shown by Table IX.

2. It is indicated that 93.8 percent of the time, the ICEP personnel have a higher mean score for the concepts judged. A higher mean score on a concept indicates a more positive meaning or attitude toward the concept. This suggests that attitudes of the ICEP personnel, when compared with the Non ICEP personnel, are polarized in a more positive direction.

3. It was found that 80.6 percent of the time there was a smaller standard deviation for the ICEP personnel for the concepts judged. A smaller standard deviation indicates less variation in the responses toward the concepts. This suggests that participation in the ICEP sensitized the personnel to a more common core of meaning for the concepts judged.

4. It has been reported that 93.8 percent of the time the ICEP personnel had a higher mean score for the concepts being judged. It is important to note also, that 36.9 percent of the t-ratios conducted to determine the difference between the means for the two groups (ICEP and Non ICEP) were significant at the .05 level. This further supports the assertion that ICEP personnel have attitudes toward the career

significantly positive only toward Career Accommodation, as shown by Table V. ICEP administrators were significantly positive towards all the above concepts except Career Information Center, as shown by Table IX.

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education concepts judged that are polarized in a like (positive) direction.

5. It was found that Non ICEP personnel exhibit a lower mean score and larger standard deviation than the ICEP personnel. This indicates that Non ICEP personnel have less positive attitudes toward the career education concepts judged than do ICEP personnel. This group has a tendency toward a neutral position on the seven point rating scale used.

6. It was found that the level of responsibility (teacher and administrator) had little significant bearing on the meaning or attitude exhibited by ICEP or Non ICEP personnel. While 89.6 percent of the means were higher and 75.0 percent of the standard deviations were smaller for the administrators than for the teachers, only 20.8 percent of the t-ratio conducted to determine the difference between the means for the two groups (administrators and teachers) were significant at the 0.05 level.

Conclusions and Implications

The concepts of Iowa Career Education Model, Career Awareness, Vocational Education, Career Accommodation, and Self Concept are most positive for the ICEP personnel.

These concepts, which the ICEP personnel hold as most positive, are related to the Model for Career Development (Appendix I), created as part of the ICEP.

The ICEP was designed to encourage each local staff to evolve its own program. However, Awareness, Accommodation, Exploration, and Preparation are identified in the model as the basic concepts for the project. The workshops, conferences, and communications have emphasized a common set of ideas about career education, such as integration of the concepts into the total curriculum rather than development of a separate unit or course.

A finding of this research is that the concentrated, intensive effort known as the ICEP is correlated with a positive polarization of attitudes held by personnel involved. This is important because exemplary efforts are to serve as a model to guide the development of education. Before any exemplary effort can succeed, the attitude of the personnel being asked to be the exemplifiers must be positive toward the concept being exemplified.

Knowledge of the correlation of the ICEP with the positive polarization of attitudes held by participating personnel should be of interest to decision makers considering the funding of future exemplary efforts.

The scope of this study is very limited. It suggests that attitude is an important factor in implementation of educational change and because participation in the ICEP is correlated with positive attitudes toward selected career education concepts, the ICEP has been successful in some respect. The study is not precise in defining the nature or importance of this success. The causal relationship that may exist between attitude and adoption of the object of attitude and the results of the adoption are not examined by this study.

This study's results do give rise to some unsubstantiated but possibly meaningful speculation. Why did the Non ICEP groups rate the concept of World of Work more highly than the ICEP groups? It may have been because the Model for Career Development (Appendix I) which is a guideline for the implementation of the ICEP emphasizes World of Work at the primary grade level. Thus the job of developing the curriculum and taking the other steps to fulfill the purpose of the World of Work is the responsibility of the primary teachers and administrators, not the secondary ICEP teachers and administrators. However, in the Non ICEP districts, the World of Work concept has not generally been a concern of the pre-secondary educators. Thus World of Work is a concept with which Non ICEP secondary educators are concerned. The fact that ICEP teachers

tended to rate World of Work lower than other concepts suggests a common understanding about the model and its application among ICEP participants. The high rating given World of Work by ICEP administrators may indicate a most wholistic vision of and acceptance of responsibility for the model at all levels. The fact that Non ICEP teachers tended to rate World of Work high relative to other concepts they rated (as well as relative to the ratings of ICEP teachers) may be an affirmation of the design, or at least the terminology, of the model which places World of Work as an elementary concept.

Another interesting observation is that self concept received higher ratings among ICEP personnel suggesting a greater awareness of the need for development of the subjective aspects of the student. This suggests a deeper understanding of the needs of students and a less mechanistic, overly work-oriented approach that career education advocates are sometimes suspected of by their critics.

Recommendations for Further Study

The semantic differential proved to be a very useful and efficient instrument to collect data. Because it takes a limited amount of the respondents' time and is very nonthreatening, the return rate is high. For these reasons, use of the semantic differential could

easily be extended to the students involved in the project. It would also be useful to compare data from personnel involved in a project where exemplary funds are administered directly to the local school district. Additional research could provide the decision makers at the funding agencies with information comparing the effect of a locally administered project with a project administered through an intermediate agency.

Another aspect of ICEP-related investigation is the analysis of participating personnel's attitudes toward the effectiveness of various aspects of the program for implementation of the ICEP (e.g., workshops, extended summer contracts, etc.).

Also of possible interest to both supporters and critics of career educations are the questions that arise in considering the question: "What is the value of this study?" In seeking the value of this study, it is necessary to ask "does this study imply that the ICEP has been successful?" which may lead to such philosophical questions as "what is the purpose of the ICEP?" "what is the purpose of education?" "how can career education, or other educational changes be facilitated?" "what are the steps of institutionalization of educational change?" "what are the appropriate criteria of success?" "which aspects of the

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ICEP have contributed most to whatever degree of success it has realized?" "can cost-benefit analysis be applied to answer this question?"

FOOTNOTES

FOOTNOTES

¹"Career Education Not Job Training," Social Education, Vol. 37, No. 6 (October, 1973), p. 504.

²State Department of Public Instruction, Directory of Selected Iowa Career Education Offerings (Des Moines, Iowa), October 17, 1973, pp. 1-3.

³Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, The Measurement of Meaning (Urbana: University of Illinois Press, 1957), p. 1.

⁴Career Education Offerings, pp. 1-3.

⁵Des Moines Register, November 1, 1973, p. 1.

⁶G. W. Allport, "Attitudes," A Handbook of Social Psychology, ed. by C. Murchison (Worcester, Mass.: Clarke University Press, 1935), p. 800.

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APPENDICES

APPENDIX A

THE BIPOLAR ADJECTIVES

APPENDIX A

THE BIPOLAR ADJECTIVES

Meaningful - Meaningless	1
Traditional - Progressive	2
Good - Bad	3
Limiting - Expanding	4
Interesting - Boring	5
Weak - Strong	6
Positive - Negative	7
Unsuccessful - Successful	8
Important - Unimportant	9
Old - New	10

APPENDIX B

LETTER TO SUPERINTENDENTS

APPENDIX B

LETTER TO SUPERINTENDENTS

Dear Superintendent:

Thank you for your willingness to participate in this study of the secondary phase of the Iowa Career Education Project (ICEP). The purpose of this study is to measure the effect on selected attitudes of the three-year ICEP exemplary project. Data collected on meanings or attitudes held by school personnel from the eight participating ICEP school districts will be compared with data from eight randomly selected non-participating ICEP school districts relative to certain career education concepts.

The sampling procedure makes it imperative that all selected in the sample complete and return the questionnaires. You will find the task easy and brief. The questionnaire will take less than ten minutes to complete.

Please return the questionnaire as soon as possible. If you have any questions, please call me. If we do not receive the completed questionnaire in a week to ten days, we will call to confirm your receipt of the questionnaire and provide any additional information you need.

Thank you for your cooperation.

Sincerely,

W. Les Schmadeka
Researcher

WLS:lac

Enclosure

APPENDIX C

LETTER TO PRINCIPALS

APPENDIX C

LETTER TO PRINCIPALS

Dear Principal:

Thank you for your willingness to participate in this study of the secondary phase of the Iowa Career Education Project (ICEP) authorized by your superintendent. The purpose of this study is to measure the effect on selected attitudes of the three-year ICEP exemplary project. Data collected on meanings or attitudes held by school personnel from the eight participating ICEP school districts will be compared with data from eight randomly selected non-participating ICEP school districts relative to certain career education concepts.

The sampling procedure makes it imperative that all selected in the sample complete and return the questionnaires. Enclosed are sufficient copies of directions and the questionnaire to be completed by yourself and one teacher from each of three areas: math/sciences, humanities, and vocational/technical. Please select the teacher with a last name closest to the letter "A" to complete the questionnaire from each of the three areas.

Participants will find the task easy and brief. The questionnaire will take less than ten minutes to complete. We have instructed each teacher participating to complete the questionnaire and return it to you for mailing in the enclosed stamped, addressed envelope.

Please distribute, complete and return the questionnaires as soon as possible. If you have any questions, please call me. If we do not receive the completed questionnaire in a week to ten days, we will call to confirm your receipt of the materials and provide any additional information you need.

Thank you for your cooperation.

Sincerely,

W. Les Schmadeka
Researcher

WLS: lac
Enclosures

APPENDIX D

LETTER TO TEACHERS

APPENDIX D

LETTER TO TEACHERS

Dear Fellow Educator:

Thank you for your willingness to participate in this study of the secondary phase of the Iowa Career Education Project (ICEP) authorized by your superintendent. The purpose of this study is to measure the effect on selected attitudes of the three-year ICEP exemplary project. Data collected on meanings or attitudes held by school personnel from the eight participating ICEP school districts will be compared with data from eight randomly selected non-participating ICEP school districts relative to certain career education concepts.

The sampling procedure makes it imperative that all selected in the sample complete and return the questionnaires. You will find the task easy and brief. The questionnaire will take less than ten minutes to complete.

Please complete and return the questionnaire to your principal. If you have any questions, please call. If we do not receive the completed questionnaire in a week to ten days, we will call to confirm your receipt of the materials and provide any additional information you need.

Thank you for your cooperation.

Sincerely,

W. Les Schmadeka
Researcher

WLS:lac

APPENDIX E

DIRECTIONS FOR RESPONDENTS

APPENDIX E

DIRECTIONS FOR RESPONDENTS

DIRECTIONS

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In completing this questionnaire, please make your judgments on the basis of what these things mean to you. On each page of this booklet you will find a different concept from Career Education to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Here is how to use these scales:

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check mark as follows:

Fair X : ____ : ____ : ____ : ____ : ____ : ____ : Unfair

or

Fair ____ : ____ : ____ : ____ : ____ : ____ : X : Unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should mark as follows:

Fair ____ : X : ____ : ____ : ____ : ____ : ____ : Unfair

or

Fair ____ : ____ : ____ : ____ : ____ : X : ____ : Unfair

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should mark as follows:

Fair ____ : ____ : X : ____ : ____ : ____ : ____ : Unfair

or

Fair ____: ____: ____: ____: X: ____: ____: Unfair

The direction toward which you place your mark, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you are judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should mark in the middle space:

Fair ____: ____: ____: X: ____: ____: ____: Unfair

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

Fair ____: ____: ____: This X: ____: Not This X: ____: Unfair

(2) Be sure you check every scale for every concept - do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you have had the same item before on the questionnaire. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the questionnaire. Make each item a separate and independent judgment. Work at fairly high speed through this questionnaire. Do not worry or puzzle over individual items. It is your first impression, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

APPENDIX F

SEMANTIC DIFFERENTIAL INSTRUMENT

CAREER EXPLORATION

meaningful	__ : __ : __ : __ : __ : __ : __	meaningless
traditional	__ : __ : __ : __ : __ : __ : __	progressive
good	__ : __ : __ : __ : __ : __ : __	bad
limiting	__ : __ : __ : __ : __ : __ : __	expanding
interesting	__ : __ : __ : __ : __ : __ : __	boring
weak	__ : __ : __ : __ : __ : __ : __	strong
positive	__ : __ : __ : __ : __ : __ : __	negative
unsuccessful	__ : __ : __ : __ : __ : __ : __	successful
important	__ : __ : __ : __ : __ : __ : __	unimportant
old	__ : __ : __ : __ : __ : __ : __	new

CAREER EXPLORATION

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

IOWA CAREER EDUCATION MODEL

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

CAREER INFORMATION CENTER

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

CAREER INFORMATION CENTER

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

HANDS-ON EXPERIENCES

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

OCCUPATIONAL CLUSTERS

meaningful	__ : __ : __ : __ : __ : __ : __	meaningless
traditional	__ : __ : __ : __ : __ : __ : __	progressive
good	__ : __ : __ : __ : __ : __ : __	bad
limiting	__ : __ : __ : __ : __ : __ : __	expanding
interesting	__ : __ : __ : __ : __ : __ : __	boring
weak	__ : __ : __ : __ : __ : __ : __	strong
positive	__ : __ : __ : __ : __ : __ : __	negative
unsuccessful	__ : __ : __ : __ : __ : __ : __	successful
important	__ : __ : __ : __ : __ : __ : __	unimportant
old	__ : __ : __ : __ : __ : __ : __	new

CAREER AWARENESS

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

VOCATIONAL EDUCATION

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

CAREER INTEGRATION

meaningful	__ : __ : __ : __ : __ : __ : __	meaningless
traditional	__ : __ : __ : __ : __ : __ : __	progressive
good	__ : __ : __ : __ : __ : __ : __	bad
limiting	__ : __ : __ : __ : __ : __ : __	expanding
interesting	__ : __ : __ : __ : __ : __ : __	boring
weak	__ : __ : __ : __ : __ : __ : __	strong
positive	__ : __ : __ : __ : __ : __ : __	negative
unsuccessful	__ : __ : __ : __ : __ : __ : __	successful
important	__ : __ : __ : __ : __ : __ : __	unimportant
old	__ : __ : __ : __ : __ : __ : __	new

WORLD OF WORK

meaningful	___:___:___:___:___:___:___	meaningless
traditional	___:___:___:___:___:___:___	progressive
good	___:___:___:___:___:___:___	bad
limiting	___:___:___:___:___:___:___	expanding
interesting	___:___:___:___:___:___:___	boring
weak	___:___:___:___:___:___:___	strong
positive	___:___:___:___:___:___:___	negative
unsuccessful	___:___:___:___:___:___:___	successful
important	___:___:___:___:___:___:___	unimportant
old	___:___:___:___:___:___:___	new

CAREER PREPARATION

meaningful	__ : __ : __ : __ : __ : __ : __	meaningless
traditional	__ : __ : __ : __ : __ : __ : __	progressive
good	__ : __ : __ : __ : __ : __ : __	bad
limiting	__ : __ : __ : __ : __ : __ : __	expanding
interesting	__ : __ : __ : __ : __ : __ : __	boring
weak	__ : __ : __ : __ : __ : __ : __	strong
positive	__ : __ : __ : __ : __ : __ : __	negative
unsuccessful	__ : __ : __ : __ : __ : __ : __	successful
important	__ : __ : __ : __ : __ : __ : __	unimportant
old	__ : __ : __ : __ : __ : __ : __	new

CAREER ACCOMMODATION

meaningful	__:__:__:__:__:__:__	meaningless
traditional	__:__:__:__:__:__:__	progressive
good	__:__:__:__:__:__:__	bad
limiting	__:__:__:__:__:__:__	expanding
interesting	__:__:__:__:__:__:__	boring
weak	__:__:__:__:__:__:__	strong
positive	__:__:__:__:__:__:__	negative
unsuccessful	__:__:__:__:__:__:__	successful
important	__:__:__:__:__:__:__	unimportant
old	__:__:__:__:__:__:__	new

SELF CONCEPT

meaningful	__:__:__:__:__:__:__	meaningless
traditional	__:__:__:__:__:__:__	progressive
good	__:__:__:__:__:__:__	bad
limiting	__:__:__:__:__:__:__	expanding
interesting	__:__:__:__:__:__:__	boring
weak	__:__:__:__:__:__:__	strong
positive	__:__:__:__:__:__:__	negative
unsuccessful	__:__:__:__:__:__:__	successful
important	__:__:__:__:__:__:__	unimportant
old	__:__:__:__:__:__:__	new

Please Check Your Subject Matter Responsibility

Math and/or Science	_____	Principal	_____
Humanities	_____	Superintendent	_____
Vocational/Technical	_____		

Is your district/school in the ICEP? yes _____
no _____

Please be sure you have made a check mark for every scale on each of the concepts.

Please return to your principal for mailing. Thank you very much.

Please Check Your Subject Matter Responsibility

Math and/or Science	_____	Principal	_____
Humanities	_____	Superintendent	_____
Vocational/Technical	_____		

Is your district/school in the ICEP? yes _____
no _____

Please be sure you have made a check mark for every scale on each of the concepts.

Please return to your principal for mailing. Thank you very much.

APPENDIX G

QUESTIONNAIRE DISTRIBUTION AND RETURN

APPENDIX G

QUESTIONNAIRE DISTRIBUTION AND RETURN

The following tables show the pattern of distribution and return of useable questionnaires.

Distribution of Questionnaires

	ICEP	Non ICEP	Total
Teachers	24	24	48
Administrators	16	16	32
Total	40	40	80

Return of Useable Questionnaires

	ICEP	Non ICEP	Total
Teachers	21	24	45
Administrators	15	16	31
Total	36	40	76

APPENDIX H

PERSONAL INTERVIEWS

APPENDIX H

PERSONAL INTERVIEWS

Following are the questions used for the personal interviews.

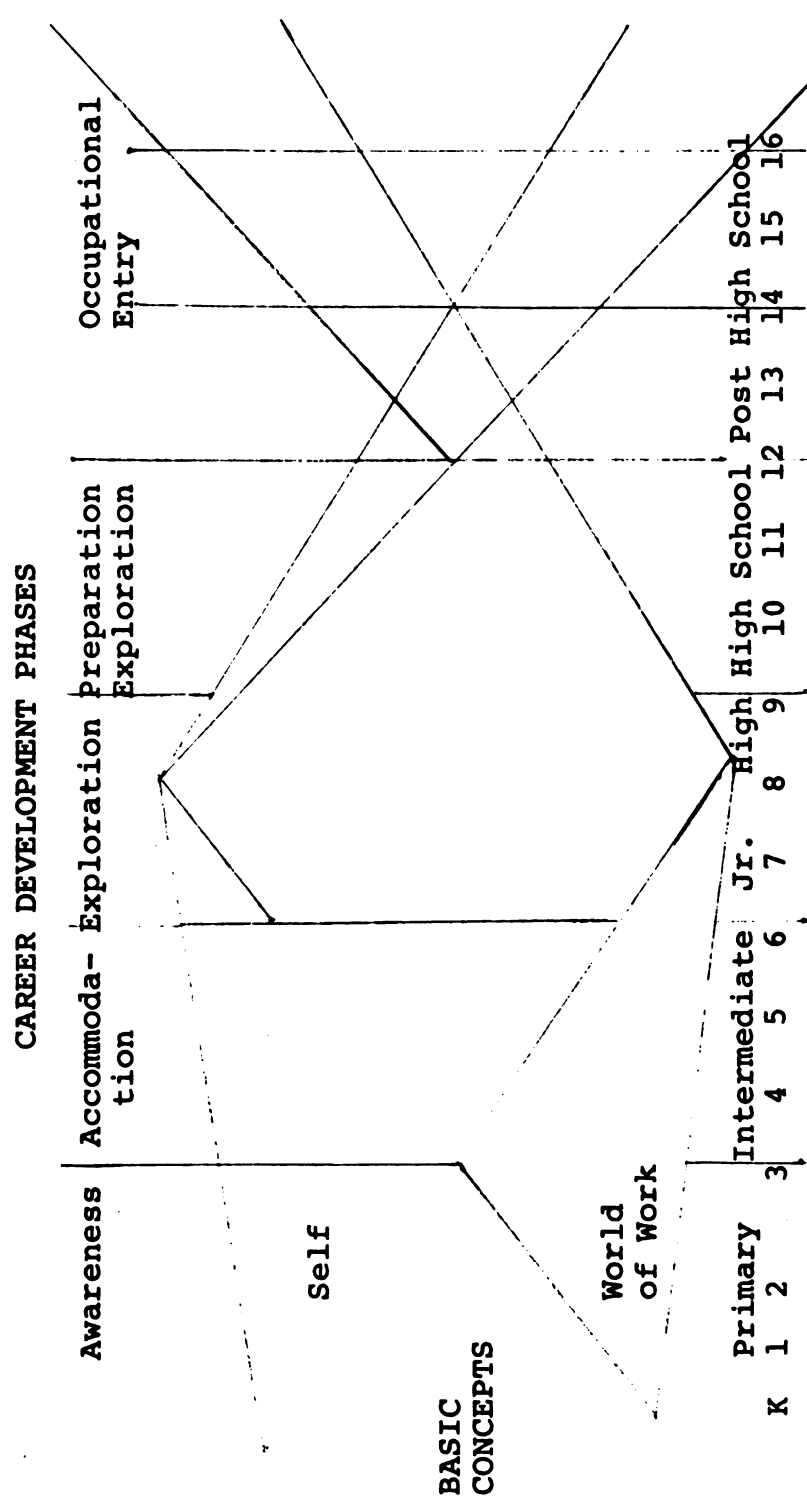
1. What experiences have been most influential in developing any positive attitudes toward career education?
2. What experiences have been most influential in developing any negative attitudes toward career education?
3. What personal feelings and/or emotions have you noticed in yourself or others that promote the acceptance of career education?
4. What personal feelings and/or emotions have you noticed in yourself or others that hinder the acceptance of career education?
5. How might these personal feelings and/or emotions you have noticed in yourself or others that promote the acceptance of career education be strengthened?
6. How might these personal feelings and/or emotions you have noticed in yourself or others that hinder the acceptance of career education be reduced?
7. What organizational and/or environmental conditions have you noticed at the local, state, and/or national levels in the past and/or present within and/or without education that promote the acceptance of career education?
8. What organizational and/or environmental conditions have you noticed at the local, state, and/or national levels in the past and/or present within and/or without education that hinder the acceptance of career education?

9. How might these organizational and/or environmental conditions you have noticed at the local, state, and/or national levels in the past and/or present within and/or without education that promote the acceptance of career education be strengthened?
10. How might these organizational and/or environmental conditions you have noticed at the local, state, and/or national levels in the past and/or present within and/or without education that hinder the acceptance of career education be reduced?
11. Do you have any other observations or comments about career education you would like to make?

APPENDIX I

MODEL FOR CAREER DEVELOPMENT

MODEL FOR CAREER DEVELOPMENT



Developed as part of Career Education Project, Iowa State University

BIBLIOGRAPHY

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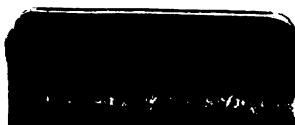
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