THE EFFECT OF EDUCATIONAL TRAINING ON THE SELF CONCEPT AND COGNITIVE KNOWLEDGE OF SCHOOL FOODSERVICE WORKERS

by

Karen Landers Fields

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SIGNED: Karen Londers Fields

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Ann M. Tinsley
ANN M. TINSLEY
Assistant Professor of Nutrition and Food Science

August 14, 1980 Date
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ABSTRACT

This investigation was designed to study the effect of educational training on self concept and cognitive knowledge. The voluntary subjects for this study were forty Arizona school foodservice workers taking either a short course, semester course, or no course at all.

The Tennessee Self Concept Scale was used to assess self concept. An instructor-prepared test for cognitive knowledge was also administered. Both the experimental groups and the control group were pre- and posttested using these instruments.

Statistical analysis showed no correlation between a high initial self concept and a high cognitive gain in a course. There was no significant change in self concept as a result of receiving instruction but there was a significant change in cognitive knowledge as a result of receiving instruction. Cognitive gain was greater for those taking a semester course than it was for those taking an intensive one week short course. There was no significant difference in self concept between school foodservice workers who elected to take continuing education and those who did not do so.
CHAPTER I

INTRODUCTION

The goals of continuing education are not only for an increase in cognitive knowledge but also for the students to have a better or more accurate perception of themselves and their role in the work environment. This new perception of "self" is expected to bring about a more effective and fulfilling existence on the job.

In Arizona, many school foodservice workers elect to take classes related to their job. The goals of these classes are the same as the goals of continuing education. The Arizona guidelines for continuing education of school foodservice personnel are set by the Food and Nutrition Division, Arizona State Department of Education.

The individual's self concept is a partial predictor of the caliber of his/her job performance; and the self concept can be changed over short periods of time (Fitts, 1972). Continuing education classes for state school foodservice workers provide an opportunity for understanding, investigating, and discovering new ideas about this relationship.

The Problem

School foodservice workers are frequently considered low on the hierarchy of the school administration. They often represent the lower middle income population and are often women who have not had extensive education (Tinsley, Gibbs, and Riddle, 1979). This study was designed
to look at the interaction between educational training, self concept, and cognitive knowledge.

Research Questions and Hypotheses

The research questions that this study attempts to answer are:

1. Will a high initial self concept relate directly to a high cognitive gain?

2. Will there be a significant change in the cognitive knowledge score of the experimental group as a result of receiving instruction?

3. Will cognitive gain be greater for those taking the one semester course than it will be for those taking the intensive one week short course?

4. Will there be a significant change in self concept for the experimental groups as a result of receiving instruction?

5. Will there be a significant difference in self concept between school foodservice workers who elect to take a course, either short course or semester course, and those foodservice workers who do not elect to continue their education?

For the purpose of statistical analysis the following null hypotheses were formulated:

1. There will be no significant correlation between a high initial self concept and a high cognitive gain.

2. There will be no significant difference in cognitive knowledge among treatment and control groups.
3. There will be no significant difference in self concept among treatment and control groups.

Significance of the Study

Many theories have been formed and studies performed concerning the self concept. Fitts (1965a) developed the **Tennessee Self Concept Scale** as an index of self concept. He believes "... that the self concept provides a fairly direct index of the extent to which an individual has actualized his general potentialities as a person" (Fitts, 1967, p. 2).

Self concept is affected by the experiences one has, including educational experiences. If an individual improves his/her self concept as a result of course work, this will influence the manner in which he/she will approach new experiences on the job. Therefore, if the classes improve self concept, this should, according to Fitts (1972), improve job performance. Educational performance (cognitive gain) will also improve (Purkey, 1970).

Limitations and Assumptions

Certain limitations are inherent in this study. These need to be considered in the interpretation of the results.

1. The population for this study was limited to school foodservice workers residing in Tucson, Arizona, one of the three urban areas in the state.

2. The subjects in the study were all females.

3. The study was limited to one instructor.
4. The term "self concept" was used in a relatively broad sense. This study, however, focused on only a selected aspect: the self concept of school foodservice workers before and after training classes.

In this study it was assumed that:

1. The subjects will be honest with themselves and reflect this in their responses to the Tennessee Self Concept Scale.

2. The school foodservice workers participating in this study are characteristic of school foodservice workers from similar urban populations in Arizona and perhaps Arizona school foodservice workers as a whole.

3. The students in the classes (treatment groups) had enrolled to learn, not just to gain certification credits.

Definition of Terms

For the purpose of this study, the following terms are defined:

1. Self concept: the self the individual perceives; that is, his/her own attributes, feelings, and behavior as observed objectively and admitted to awareness.

2. School foodservice: the foodservice facility providing the school lunch program in Arizona schools.

3. Short course: a school foodservice training class lasting five days, five hours per day.

4. Semester course: a school foodservice training class lasting sixteen weeks, one and one-half hours per week.
5. Cognitive knowledge: the range of one's information or understanding (positive or negative).

6. Student: a member of the school foodservice training courses.

7. Tennessee Self Concept Scale: an instrument employed to measure the self concept.
CHAPTER II

REVIEW OF LITERATURE

In the last few years there has been an enthusiastic rebirth of interest in internal and intrinsic motivating forces and cognitive and symbolic processes, particularly in regard to the dynamic importance of self. Man's interrelated perceptions of himself and his environment are emphasized. It is thought that man's behavior is determined by his unique, phenomenological perceptions of himself and of his world. Therefore, man behaves as a function of his perceptions of himself and of his environment, regardless of whether these perceptions are accurate or objective.

Because perceptions of self and of the environment become important intervening variables affecting behavior, various "self theories" have been developed. Major theories include those of Rogers (1951), Combs and Snygg (1959), and Lecky (1945).

To provide a frame of reference for the research to be undertaken in this study, definitions of the "self" developed by various theorists are presented, dimensions or aspects of self concept are described, examples of instrumentation employed in self concept research are given, and the theoretical issues are discussed.
Definitions of the Self

Webster's New Collegiate Dictionary (1973, p. 1048) defines self as "the union of elements (as body, emotions, thoughts, and sensations) that constitute the individuality and identity of a person."

There exist several uses of the term "self." Strang (1957), on the basis of written compositions, interviews, group discussions, and observations of a sample of adolescents, proposed four dimensions of the self. The self concept proper is "the individual's perception of his abilities and his status and roles in the outer world" (Strang, 1957, p. 68). It is influenced by physical self, abilities, disposition, values, beliefs, and aspirations. The "transitory perception of self" is a changeable attitude the individual holds at a particular time, influenced by some recent experience or the mood of the moment. The "social self" is the self as the person thinks others see it. The "ideal self" is defined as "the kind of person the individual hopes to be or would like to be." Further, Strang proposed a concept of "self-acceptance," defined as the discrepancy between the "real self" and the "ideal self."

Another theory maintains that objects are perceived in a unique fashion by each individual. What governs behavior from the point of view of the individual himself are his unique perceptions of himself and the world in which he lives, the meanings things have for him (Combs and Snygg, 1959).

Emphasis on motivation leads to study of the self as an activator or cause of behavior. The measures of the self-obtained represent
perceptions of the self and the environment. The self is conceived as an intervening variable motivating behavior.

Rogers (1947, 1951, 1959a, 1959b, 1965, 1969) and Rogers and Dymond (1954) presented a system of psychotherapy called "nondirective" which was built around the importance of the self in human adjustment. In Rogers' theory, the self is the central aspect of personality. The self was viewed as a phenomenological concept which is of central importance to that individual's behavior and adjustment. Rogers described the self as a social product, developing out of interpersonal relationships and striving for consistency. He believed that there is a need for positive regard both from others and from oneself, and that in every human being there is a tendency toward self-actualization and growth so long as this is permitted by the environment.

Combs and Snygg (1959) proposed that the basic drive of the individual is the maintenance and enhancement of the self. They further declared that all behavior, without exception, is dependent upon the individual's personal frame of reference.

The research and writings of Brookover (1959, 1964); Brookover, Patterson, and Thomas (1962, 1965); Brookover, Erickson, and Joiner (1967); Heider (1958), Patterson (1959, 1961); Combs (1965); Diggory (1966); and Coopersmith (1967) have given us a deeper understanding of the dynamics of the self in determining behavior. From various definitions of the self given by Rogers (1951), Jersild (1952), and Combs and Snygg (1959), we can arrive at a composite definition of the "self" as a complex and dynamic system of beliefs which an individual holds true about himself, each belief with a corresponding value.
The Self Concept

Several attempts at defining "self" by postulating a self concept have been made. As with the diversity of definitions of the self, there is diversity among definitions of the self concept.

Psychological research based on the self concept typically conceives the self as object. The term "self concept," then, usually refers to the way an individual perceives himself as an object. Several other terms, including "self-image," and "self-regard," and "self-structure" have been used in lieu of the term "self concept" to refer to perception of self as an object. For consistency, the term self concept will be used throughout this study.

Kubiniec (1967) classified self concept into three categories: (1) "self-identity," (2) "self-evaluation," and (3) "self-ideal." So, when writers used the term "self concept," they then may be referring to identity, evaluation, self-ideal, or some combination of these.

Self-identity, or its synonym, self-description, generally refers to an individual's description of himself; i.e., what he is, his characteristics, and facts about himself. Self-evaluation generally refers to how an individual feels about himself; i.e., what his characteristics mean to him, the extent to which he is satisfied with himself, and how he values himself. Synonyms of self-evaluation include self-esteem, self-respect, self-adequacy, self-acceptance, self-satisfaction, self-favorability, and self-confidence. Self-ideal generally refers to the individual's aspirations; i.e., what he would like to be. These various conceptions are summarized in Table 1 as proposed self-dimensions.
Table 1. Summary of Self-Related Terms in the Literature, Classified Into Properties

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<td>Self-Concept</td>
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<td>Self-Image</td>
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<td>Self-Regard</td>
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<td>Self-Structure</td>
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Self concept is a central and critical variable in human behavior. Self concept is the frame of reference through which the individual interacts with the world and is, therefore, a powerful influence on human behavior. An individual's concept of himself somehow cuts across the essence of many other variables such as motives, needs, attitudes, values, and personality (Fitts et al., 1971).

Instrumentation Employed in Self Concept Research

Self concept research has been plagued with measurement and criterion problems. Many hastily devised, poorly standardized instruments have been employed in self concept studies and their comparability is exceedingly questionable. Operational measures of the self include measures based on the subject's self-report, and the inferred self, based on the responses of judges. The present research employs
measures based on the subject's self-report, therefore, a review of this research follows.

Supportive Research

Rogers (1951) has taken the position that self-reports are valuable sources of information about the individual. Allport (1955, 1966) feels that a person has the right to be believed when he reports his feelings about himself. Sarbin and Rosenberg (1955) determined that their self-report instrument was valuable in getting at meaningful self-attributes quickly and with a minimum of effort. All of these researchers believe that if we want to know more about a person we should ask him directly. Strong and Feder (1961, p. 170) summarize this by saying: "Every evaluative statement that a person makes concerning himself can be considered a sample of his self concept, from which inferences may then be made about the various properties of that self concept." Numerous studies have been conducted based on the theory that the self-report offers valid and reliable data.

It is expected that certain life experiences will have consequences for the way in which a person sees himself. Positive experiences would be expected to result in enhancement of the self concept, while stress or failure would be expected to result in lowered self concept. There is evidence that peoples' concepts of self do change as a result of significant experiences. One of the most frequently used measures of self concept is the Tennessee Self Concept Scale. This instrument reflects changes in the self concept in predicted ways.
Nonsupportive Research

The major critics of self-reporting think that while the self concept is what an individual believes about himself, the self-report is only what he is willing and able to disclose to someone else. Combs, Courson, and Soper (1963) debate that these are rarely identical. Wylie (1961, p. 24) concluded from her comprehensive review of research on self concept:

We would like to assume that a subject's self-report responses are determined by his phenomenal field. However, we know that it would be naive to take this for granted, since it is obvious that such responses may also be influenced by the: (a) subject's intent to select what he wishes to reveal to the examiner, (b) subject's intent to say that he has attitudes or perceptions which he doesn't have, (c) subject's response habits, particularly those involving introspection and the use of language, and (d) host of situational and methodological factors which may not only induce variations of (a), (b), and (c) but may exert other more superficial influences on the responses obtained.

Tennessee Self Concept Scale

There are contaminating variables in self-reports but, in spite of their weaknesses and limitations, self-reports do reveal characteristics of the self and are important to researchers. Used in conjunction with other evidence, self-reports give insights into how a person sees himself and his world. This research will use a self-reporting instrument, the Tennessee Self Concept Scale.

The psychometric data stated in the Tennessee Self Concept Scale (Fitts, 1965a) were developed from a broad sample of 626 people. This sample included people from various parts of the country, with ages ranging from twelve to sixty-eight, with approximately equal numbers of
females and males, from both Negro and white populations, and representative of all social, economic, intellectual, and educational levels from sixth grade through the Ph.D. degree (Fitts, 1965a).

The test-retest reliability coefficients for the 29 scores used in this study are in the .80's and .90's. Fitts found other evidence of reliability in the remarkable similarity of profile patterns through repeated measures of the same individuals over long periods of time.

Four kinds of validation procedures were used: (1) content validity, (2) discrimination between groups, (3) correlation with other personality measures, and (4) personality changes under particular conditions. Content validity was established by seven clinical psychologists who judged if a statement would be appropriate for a particular category on the scale. All of the statements in the scale received unanimous agreement as to its correct classification.

Many researchers in many places have used the Tennessee Self Concept Scale. These include Atchison (1958), Piety (1958), Wayne (1963), and LeFeber (1964).

Theoretical Issues

There are several theoretical issues involving self concept theory and performance in educational, training, and vocational situations. A discussion of three of these issues follows.

The Relationship Between Self Concept and Performance

Can we predict human behavior from the self concept? It has been shown that if we know an individual's self concept, we can predict
many things about his behavior (Fitts et al., 1971). Maslow (1968) proposed that individuals who are more self-actualizing are more able to realize their true potentialities and to function in a more creative and effective manner.

Fitts (1965a, 1965b, 1965c, 1970) and Fitts et al. (1971) see the self concept as being related to performance in two ways—indirectly as a correlate or indication of self-actualization, and directly in its own right. Therefore, the person who has a clear, consistent, positive, and realistic self concept will behave in healthy, confident, constructive, and effective ways. These people are more secure, confident, and self-respecting. They are less threatened by difficult tasks, people, and situations. And, finally, they relate to and work with others in any situation more effectively. Fitts et al. (1971) presented data to support the theory that the person who is rated high in personal effectiveness (performance) is likely to have an optimal self concept.

A study by Smith (1969) with visually impaired college students showed that the success rate over the first semester was much greater for those students who had participated in a special college preparatory program for the blind. In addition, the initial self concepts of the students appeared to make a real difference as to whether they persisted in or dropped out of their college training program.

A negative self concept has detrimental effects on performance. Supportive of this line of reasoning are the findings of Stotland et al. (1957). These investigators found that high self-esteem subjects behave in such a way as to maximize the probability of success, while low esteem subjects make it difficult for themselves to achieve success.
It is becoming clear that many of the difficulties which people experience in life are closely connected with the ways in which they see themselves and the world in which they live. Successful continuation of any activity is probably a function of many factors—the stress involved, the rewards, the motivation of the individual, and other variables. An individual's self concept is a variable likely to influence behavior. These findings provide a basis for the hypothesis that persons with healthier self concepts will be more likely to perform satisfactorily.

The Relationship Between Self Concept and Academic Achievement

There is research supporting the relationship between measures of self concept and academic success, and research failing to support this relationship. Of the various routes people pursue toward self-actualization, education is a common one. A number of studies have been reported that deal with students' self concepts and academic performance. Furkey (1970, p. vi) has presented a thorough summary of work in this area. He summarizes with this statement: "... the overwhelming body of contemporary research points insistently to the relationship between self-esteem and academic achievement and suggests strongly that the self concept can no longer be ignored. ..."

The ways in which a student views himself and his world are products of how others see him, and are primary forces in his academic achievement. Gowan (1960) reported that achievers are characterized by self-confidence, self-acceptance, and a positive self concept. In a study of Negro students, Caplin (1966) found that children who had more positive self concepts tended to have higher academic achievement.
Purkey (1970) indicates that students' failure—as well as the mis-directed motivation and lack of commitment characteristic of the under-achiever, the dropout, and the socially disabled—are in large measure the consequence of faulty perceptions of themselves and the world.

Coombs and Davies (1966) employed a measure of self concept of academic ability and concluded that students who did well in high school had high self concepts and expected and usually obtained high college grades. Similarly, Brim (1954) found that college students with high self-estimates of intelligence earned higher GPA's than students of equal measured intelligence but lower self-estimate of intelligence.

It is reasonable to assume that unsuccessful students are likely to hold attitudes about themselves and their abilities which are pervasively negative. They tend to see themselves as less able, less adequate, and less self-reliant than their more successful peers. Students with negative self concepts rarely perform well in school, as the research of Brookover et al. (1967) has indicated. Brookover et al. (1962, 1965) concluded from their studies that changes in the self concept of academic ability are associated with parallel changes in academic achievement.

Buchin (1965) however, sampling 175 college freshmen, did not find a significant relationship between self concept and academic achievement. Fiedler et al. (1958) likewise did not find significant correlations between self-esteem and GPA while Borislow (1962) found no differences between achievers and underachievers in general self-ideal and self-scores.
The relationship between self concept and academic achievement is confusing. Lavin (1965), reviewing the literature relating self concept to academic success, concluded that studies do, in fact, suggest that a positive self-image is associated with higher performance.

The work of Gay (1966), Williams and Cole (1968), Hebert (1968), and Blamick (1969) attempt to summarize the relationship like this: An individual's general image of himself as a person will usually show some slight relationship to his academic achievement. If he has an optimal self concept, he is apt to use his intellectual resources more efficiently, and this may be a critical factor in his achievement if his intellectual resources or educational background are borderline. Otherwise, his self concept will probably be more closely related to the non-cognitive aspects of his behavior within the academic setting.

The Relationship Between Self Concept and Vocational Performance

The world of work is prominent in the lives of most people, and vocational psychologists (Super, 1963; Holland, 1966) have maintained that the self concept is a significant factor in the choice of a vocation and one's performance in it. The vocational area is a broad one. A number of studies have been reported relevant to this topic but there are still many gaps to be filled.

A study by Alexander (1971) reports the effects of job training on the self concepts of unskilled youthful law offenders. Subjects participating in job training had a significantly greater positive increase in self concept than the control subjects who did not receive this training.
Fitts's (1972) theoretical position was that self concept interacts with motivation, learning, task performance, and overall job performance. A series of studies of the interaction between employment performance and self concept demonstrated that self concept could be changed significantly over short periods of time by varying kinds of systematic reinforcement. (Bass and Baron, 1966; Baron and Bass, 1969). No clear cause and effect is indicated, but the data support the prediction that a healthy self concept increases the probability of satisfactory job performance.

**Summary**

There has been an extensive number of studies reported in the literature regarding self, self concept, measurement techniques of self concept, and theories related to self concept. Several factors make it difficult to provide generalizations about the relationship between self concept and performance, self concept and academic success, and self concept and vocational performance. First, diverse aspects of self concept were employed (e.g., self-esteem vs. self-acceptance vs. self-image), making comparability across studies difficult. The self concept in these studies had not been defined adequately: similar measures were given different names, and different measures were given the same names. Second, definitions of success (performance, academic or vocational) varied from study to study. Third, the reference population in the research was sometimes limited to certain vocations, ages, sexes, etc.

A computer-assisted review of the literature failed to reveal any research with regard to self concept and academic performance of
school foodservice workers. The research undertaken here should provide needed addition to the existing research in that it (1) includes many aspects of self concept, (2) examines a very specific group—school foodservice workers, and (3) relates self concept to educational and training situations.
CHAPTER III

METHODS AND PROCEDURES

The purpose of this chapter is to describe the procedures and treatments utilized in this study. The chapter is divided into two sections: (1) the sample and (2) the instruments and procedures used.

The Sample

The population for this study consisted of forty school food-service workers in Tucson, Arizona, who had registered for a short course, a semester course, or were taking no training. The subjects were volunteers and the students were promised no rewards such as good grades or any other special treatment. The study was described to them as something separate from the classes.

The three groups studied were:

1. Fifteen school foodservice workers participating in an intensive short course (1 week).

2. Fourteen school foodservice workers participating in a semester course (16 weeks).

3. Eleven school foodservice workers not participating in any training group (control group).

All participants were females between the ages of 27 and 68. Seventy-five per cent were Anglo American, 20% were Mexican-American, and 5% were Black American. Formal education completed by the
individuals ranged from eighth grade to a bachelors degree. The control group consisted of volunteers who had never taken training classes. Of the students in the short course, three had taken 1-5 classes, three had taken 6-9 classes, and nine had taken more than 10 classes. Of the students in the semester course, eight had taken 1-5 classes and six had taken 6-9 classes. Of this total group, the mean self concept score (pretest) was 342.05. The mean cognitive knowledge score (pretest) was 68.95.

**Instruments and Procedures**

All of the volunteers were pre- and posttested using the **Tennessee Self Concept Scale**. This standardized self-report questionnaire can be administered to a group or to an individual. It is simple for the subject to complete, widely applicable, well standardized, and multi-dimensional in its description of the self concept.

It consists of one hundred self-descriptive statements derived from other self concept measures and individuals' descriptions of themselves. The subjects respond to each item on a Likert-type five point endorsement scale which runs from "Completely False" to "Completely True" (see Appendix A for scale).

The responses are scored according to a predetermined, two dimensional classification scheme, one dimension being five aspects of the self (physical, moral-ethical, personal, family, and social) and the other representing the dynamics associated with each of these (what the person is, how he accepts himself, and how he acts).
The **Tennessee Self Concept Scale** has two forms, both of which use the same test booklet and test items. The difference between the forms lies in the scoring, the profiling system, and their application. The Clinical and Research Form, which is used in this study, has more variables and scores than the Counseling Form. The Clinical and Research Form is recommended for research purposes.

Cognitive knowledge was assessed by an achievement test constructed by the instructor and suitable for the particular programs being evaluated. The tests were built from existing objectives for the courses. The questions on the subject matter posttests were identical to those on the pretests, but their order had been randomly scrambled. The tests for both the short course and the semester course were based on specific course objectives which were given to each student at the beginning of each course. The same number of questions and the same number of objectives were used for each course. In both instances these concepts were stressed throughout the courses. The same instructor taught both courses.

The short course group met for five hours each of five consecutive days. The semester group met once a week for sixteen weeks; each meeting lasted one and one-half hours. Prior to and during this time period the control group did not receive any continuing education.

A time period of one week elapsed between the collection of the pretest data and the posttest data for the short course group. A time period of three and a half months elapsed between the collection of pre- and posttest data for the semester group, and a time period of
two months elapsed between collection of pretest and posttest data for the control group. The control group received both subject matter tests.

Subject matter consisted of scheduled courses in Special Problems and Engineered and Convenience Foods. These courses are in the pyramid of courses developed by the Food and Nutrition Division, Arizona State Department of Education. Special Problems was on the gold level and Engineered and Convenience Foods was on the red level (see Appendix B for the pyramid of courses and see Appendices C and D for course objectives).
CHAPTER IV

FINDINGS

This study was designed to investigate the effect of educational training on the self concept and the cognitive knowledge of the group members. The self concept was measured by the Tennessee Self Concept Scale and cognitive knowledge was measured by a cognitive knowledge achievement test prepared by the instructor. Three major null hypotheses were developed and tested. This chapter deals with the statistical data directly relating to the three null hypotheses stated in Chapter I. The statistical data will be dealt with as they pertain to each null hypothesis, then summarized at the conclusion of the chapter.

Null Hypothesis One

There will be no significant correlation between a high initial self concept and a cognitive gain.

The results obtained from comparing the initial self concept (pretest, Tennessee Self Concept Scale) and the cognitive change score (posttest minus pretest) indicate that there is no significant correlation between a high initial self concept and a high cognitive gain.

The Pearson's Product Moment Correlation Coefficient showed no significant relationship ($r = .2030$). The individuals with high initial self concept do not show a significant gain in cognitive knowledge.
self concepts did not have significantly higher cognitive gains ($r = -0.1350$). Null Hypothesis One must be retained.

**Null Hypothesis Two**

There will be no significant difference in cognitive knowledge among treatment and control groups.

Analysis of variance showed that there was a significant difference between the three groups ($P < 0.05$) (see Table 2). A Tukey test determined that the semester course group was significantly different ($P < 0.05$) from both the control group and the short course group. There was no significant difference between the short course group and the control. The fourteen students in the semester class had an average score change of 19.5000 as compared with 6.8667 for the short course group and 2.0000 for the control group (see Table 3). This was a difference of 12.6333 points mean change score in favor of the semester class group over the short course group, and 17.5000 points mean change score in favor of the semester class group over the control group. Since the obtained difference was statistically significant ($P < 0.05$) the likelihood this difference occurred by chance is 5% or less. Null Hypothesis Two is rejected.

**Null Hypothesis Three**

There will be no significant difference in self concept among treatment and control groups.

Analysis of variance using mean change scores of the Tennessee Self Concept Scale revealed no significant difference between groups (see Table 4). The short course group did achieve higher mean change
Table 2. Cognitive Knowledge Difference Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>F Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>2114.6667</td>
<td>1057.3333</td>
<td>24.8353</td>
<td>.0000*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>37</td>
<td>1575.2333</td>
<td>4257.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>3689.9000</td>
<td></td>
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</tr>
</tbody>
</table>

*P < .001.

Table 3. Cognitive Knowledge Mean Difference Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Course</td>
<td>15</td>
<td>6.8667</td>
<td>2.1064</td>
</tr>
<tr>
<td>Semester Course</td>
<td>14</td>
<td>19.5000</td>
<td>1.6467</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>2.0000</td>
<td>1.1677</td>
</tr>
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</table>

Table 4. Self Concept Difference Analysis of Variance

<table>
<thead>
<tr>
<th>Source</th>
<th>D.F.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>F Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>288.3819</td>
<td>144.1910</td>
<td>.5052</td>
<td>.6075</td>
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<tr>
<td>Within Groups</td>
<td>37</td>
<td>10559.5931</td>
<td>285.3944</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>10847.9750</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
scores with the **Tennessee Self Concept Scale** than the semester course group or the control group (see Table 5). However, Null Hypothesis Three must be retained.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Course</td>
<td>15</td>
<td>4.3333</td>
<td>5.3680</td>
</tr>
<tr>
<td>Semester Course</td>
<td>14</td>
<td>2.1429</td>
<td>4.2399</td>
</tr>
<tr>
<td>Control</td>
<td>11</td>
<td>-2.3636</td>
<td>3.3528</td>
</tr>
</tbody>
</table>

**Summary**

In summary, the statistical analysis showed that Null Hypotheses One and Three must be retained. Statistically significant differences were found in Null Hypothesis Two and this hypothesis was rejected.

A high initial self concept does not relate directly to a high cognitive gain in the course. There was no significant difference in self concept between school foodservice workers who elected to take a course and those who had not continued their education with such course work.

The semester course group was significantly different *(P < .05)* from both the short course group and the control group. There was no significant difference between the short course group and the control group.
CHAPTER V

DISCUSSION, IMPLICATIONS, SUMMARY, AND RECOMMENDATIONS

This study was designed to measure quantitative changes in the self concept and cognitive knowledge as a result of participation in training classes. Change in self concept was measured by a pre- and posttest using the Tennessee Self Concept Scale. Cognitive knowledge was measured by a pre- and posttest of an instructor-compiled subject matter achievement test. Forty volunteers were divided into three groups: those participating in an intensive short course, those participating in a semester course, and a control group not participating in any training course. The data were compiled and analyzed statistically.

Discussion and Implications

The findings showed that there was no correlation between a high initial self concept and a high cognitive gain. This study implies that attempts to predict academic achievement might be more successful if measures other than self concept are employed.

Williams and Cole (1968) found that there was a trend for an individual's general image of himself as a person to show some slight relationship to academic achievement. The findings of this study concur with those of Buchin (1965), Fiedler et al. (1958), and Borislow (1962) in finding no significant relationship between self concept and academic achievement. It may be speculated that self concept is
more closely related to the noncognitive aspects of a person's behavior within the academic setting.

There are probably several reasons for the lack of a relationship between these two specific criteria. First, the Tennessee Self Concept Scale is an all-purpose self concept measure which may not focus specifically enough on the aspects of the self that are most relevant to this area of performance. Second, the total self concept seldom relates to any kind of performance in a purely linear fashion. Third, achievement tests are only one of many criteria of academic performance and one that probably holds less meaning and significance to the individual himself than such criteria as course grade or whether he passes or fails.

The semester course group was significantly different from both the short course group and the control group in cognitive knowledge gain. There was no significant difference between the short course group and the control group. This difference—in favor of the semester course group implies that a sixteen week semester course is superior to a one week short course. Successful completion of any activity is probably a function of many factors—the stress involved, the rewards, the motivation of the individual, and other variables. The difference in cognitive gain between the short course group and the semester course group may also be attributed to the particular program the students participated in. This course may have been more interesting to the students. Therefore, it may be dangerous to imply that a semester course should always be recommended over a short course for maximum learning experiences.
Analysis of variance did not reveal any significant difference between either of the treatment groups or the control as to self concept. This study implies that continuing education does not affect the self concept. This may be related to the fact that the self strives for consistency. The self resists change to a surprising degree as found by Balester (1956), Roth (1959), and Engel (1959). However, there is evidence that people's concepts of self do change as a result of significant experiences. These training courses may not have been considered significant experiences to the foodservice personnel involved. Also, if self concept varied much, the individual would lack a consistent personality. Human beings are highly complex creatures. Each person is unique and different in innumerable ways. Behavior is extremely varied and often difficult to understand or explain, much less predict. Every individual has his own history of personal experiences and his own learnings from these experiences. Human behavior cannot be weighed, counted, and measured with the same precision that is employed in the physical sciences. The task of measuring attitudes is not a simple one. Attempting to demonstrate attitude change is probably the most difficult of evaluation tasks. A change in self concept of foodservice workers may have been exhibited in a larger group.

Summary

Forty volunteer school foodservice workers were divided into two treatment and one control groups. The treatment consisted of education and training in foodservice courses designed specifically
for school foodservice personnel. The control group did not receive any educational training prior to or during the period of this research.

Pretests and posttests using the Tennessee Self Concept Scale and instructor developed achievement tests were administered to assess change.

No relationship was established between initial self concept and academic achievement. Cognitive gain was significantly greater for those taking a semester course than for those taking a short course or no course at all. Continuing education did not show any significant effect on the self concept.

Recommendations

The results of this study suggest that further research be conducted with this population.

More men are joining the ranks of the School Foodservice Association. Additional studies should be carried out to discover the effects of educational training on the self concept of men as well as women. Comparisons could then be made between the two groups. Self concept does not change immediately, long term studies are needed to assess the change of the self concept as a result of the educational process.

This research was conducted with a relatively small sample size. Significant results might have been found with a larger number. A comparison between states would be most interesting as well. Additionally, an evaluation of identical courses with different time modes
should be conducted before recommendations could be made as to the best method for continuing education.

Continuing education is vital to the improvement of the school lunch program. A positive self concept will do a great deal to improve the image of the school foodservice worker. Researchers are busy with this population but more needs to be done in the area of self concept. Raising the self concept of these people will change their image from being "just a cook" to that of "a member of the teaching team" in the school system. With the emphasis on nutrition education as it is today, this aspect should not and can not be ignored.
Remember, put a circle around the response number you have chosen for each statement.

<table>
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<tr>
<th>Responses</th>
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<th>Mostly false</th>
<th>Partly false and partly true</th>
<th>Mostly true</th>
<th>Completely true</th>
</tr>
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</table>

You will find these response numbers repeated at the bottom of each page to help you remember them.
APPENDIX B

PYRAMID OF COURSES, FOOD AND NUTRITION DIVISION, ARIZONA STATE DEPARTMENT OF EDUCATION
APPENDIX C

SPECIAL PROBLEMS COURSE OBJECTIVES

GOAL: This course will enable the student to identify and define special problems related to school foodservice.

OBJECTIVES:

1. The student will be able to compare and contrast food delivery systems used in school foodservice.

2. The student will identify problems and prospects for the U. S. School Foodservice.

3. The student will list the current U. S. Dietary Goals.

4. The student will explain the food fads that abound in the U. S. today.

5. The student will be able to analyze the different food additives.
APPENDIX D

ENGINEERED AND CONVENIENCE FOODS
COURSE OBJECTIVES

GOAL: This class will enable the student to develop an understanding of new foods on the market and how to incorporate them into the school lunch program.

OBJECTIVES: As a result of the class, participants will:

1. Gain knowledge of approved engineered foods, what they are, what they must contain, and how to incorporate them in meat/meat alternate dishes.

2. By taste-testing these alternate foods, understand why stipulations are set as they are and understand possible dislikes by students if not properly prepared.

3. By comparing cost and nutritional values, gain an understanding of the necessity for the use of engineered foods for varied meals within the budget.

4. By examining cost, labor, time, taste, and equipment involved between convenience foods and those made from scratch, gain knowledge as to the benefits and drawbacks of incorporating convenience foods in the menu plan.

5. Be able to incorporate into school lunch menus, convenience and engineered foods to vary meals, save on money and energy, and utilize available equipment and storage facilities.
REFERENCES


