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**THE RELATIONSHIP BETWEEN THE CONGRUENCE OF
VOCATIONAL INTERESTS AND COLLEGE MAJOR
AND SELF-CONCEPT**

**by
Amina Husain**

A Thesis

**Submitted in partial fulfillment of the requirements of the
Master of Arts Degree
of
The Graduate School
at
Rowan University
Spring 2000**

Approved by

Professor

Date Approved 5/2/00

ABSTRACT

Amina C. Husain

The Relationship Between The Congruence of Vocational Interests and College Major and Self-Concept

Spring 2000

**Dr. John Klanderman
Master Of Arts Degree in School Psychology**

The purpose of this study was to investigate whether or not there is a relationship between the congruence (agreement) of an individual's vocational interests and academic major and the level of self-concept. This study reports on the level of self-concept and the degree of congruence between the selection of an academic major and their personality type or profile using the Self Directed Search (Holland, 1994). The level of self-concept was determined by using the Tennessee Self-Concept Scale (Fitts, 1965). The congruence score was obtained by utilizing was the Zener-Schnuelle Congruence Index (Robbins, Harvey, & Kandefer 1978). Sixty college freshmen and sophomores, ages 18-26 years old, participated in the study. A Pearson Correlation confirmed the research hypothesis that students with a high self-concept showed significantly more congruence between their college major and occupational interests than those students with low self-concepts.

MINI ABSTRACT

Amina C. Husain

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Spring 2000

**Dr. John Klanderman
Master of Arts Degree in School Psychology**

This study investigated the relationship between the congruence of an individual's vocational interests and academic major and the level of self-concept. A Pearson Correlation determined that students with a high self-concept showed significantly more congruence between their college major and vocational interests than those with low self-concepts.

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TABLE OF CONTENTS

CHAPTER ONE	1
THE PROBLEM	1
NEED	1
PURPOSE	2
HYPOTHESIS	3
THEORY	3
DEFINITION OF TERMS	6
ASSUMPTIONS	6
LIMITATIONS	7
OVERVIEW	7
CHAPTER TWO	8
REVIEW OF LITERATURE	8
OVERVIEW	8
SELF-CONCEPT, VOCATIONAL INTERESTS, AND CHOICE OF ACADEMIC MAJOR.....	8
CONGRUENCE IN RESEARCH.....	10
SELF-CONCEPT AND CAREER	17
CONCLUSION: AN EVALUATION OF HOLLAND’S MODEL	20
SUMMARY	22

CHAPTER THREE	24
DESIGN OF THE STUDY	24
SAMPLE	24
MEASURES	24
DESIGN	27
TESTABLE HYPOTHESIS	27
CHAPTER FOUR	28
ANALYSIS OF RESULTS	28
TABLE 4.1	29
TABLE 4.2	30
TABLE 4.3	32
CHAPTER FIVE	33
SUMMARY AND CONCLUSIONS	33
SUMMARY	33
CONCLUSIONS	33
IMPLICATIONS FOR FUTURE RESEARCH	35
REFERENCES	37

LIST OF TABLES

TABLE 4.1	29
TABLE 4.2	30
TABLE 4.3	32

CHAPTER ONE

The Problem

Need

One of the most important decisions an individual must make is choosing a career. This decision will affect this person for the rest of his or her life. When choosing a college major, many things are taken into account. Students may be motivated by the financial aspect, opportunities in the market, range of capabilities, or by parental influence. Self-concept - the set of qualities a person views as being a part of himself or herself (Carver and Sheier, 2000)- plays an important role, as well.

The idea that there is a relationship between an individual's personal strength, interests, and needs, and the occupation which utilizes these characteristics, has been extensively researched. An occupation, or career, is in part an expression of one's personality. The agreement between personality and career choice contributes to personal satisfaction and achievement. In addition, the level of a person's self-concept may influence the degree of congruence.

It is important to study how the level of self-concept affects the degree of congruence between college major and vocational interests. Since there are many different factors that contribute to career decision, people sometimes have a tendency to overlook those interests that overlap with their personalities. Examining the relationship

between self-concept and vocational agreement with college major will lead to a greater understanding of occupational choice. This concept would benefit society in many different ways. On an individual level, those who are career indecisive should be made aware of how they view themselves (self-image), while evaluating the types of jobs they may do well in. This awareness may help narrow a wide range of possibilities, leading to higher possibilities of job satisfaction. On a larger scale, employers would be pleased with workers who value their jobs. Self-concept should be explored during the career decision process. It is therefore important to study the effect self-concept has on the agreement between academic major and vocational interests.

Purpose

The purpose of this study is to investigate whether the level of self-concept acts to moderate the congruence between the vocational interest profiles and the selection of an academic major in college students. This study is a replication of research done by Gaylen Wallace and Susan Walker (1990). The independent variable is self-concept, as measured by the total score on the Tennessee Self-Concept Scale. The dependent variable is congruence of college major and personality profile, as measured by the Self-Directed Search. Since the research done by Wallace and Walker found that gender or ethnic origin did not significantly affect this relationship, these variables will not be included in the following study.

Hypothesis

Freshman and sophomore college students with a high self-concept level will demonstrate a high congruence between their vocational interests and college major, while those students with a low self-concept will have a low score of congruence between their vocational interest profiles and selection of an academic major.

Theory

The general theory for this study is based upon the work of Holland. The theory is an elaboration of the hypothesis that career choices represent an extension of personality, and personal behavior styles in one's own career (Osipow, 1983). He proposes that different personality types have different interests, competencies, and disposition toward the work environment (1966, 1973, 1985). Holland introduced the notion that people project their views of themselves of the world of work onto occupational titles. According to Holland's theory, people can be categorized into different personality dimensions: realistic, investigative, artistic, social, enterprising, and conventional.

The *Realistic* orientation is characterized by aggressive behavior; interest in activities requiring motor coordination, skill, and physical strength; and masculinity. People oriented towards this role prefer "acting out" problems; they avoid tasks involving interpersonal and verbal skills and seek concrete rather than abstract problem situations. They score high on traits such as concreteness, physical strength, and masculinity and low

on social skill and sensitivity.

The *Investigative* (Intellectual) persons' main characteristics are thinking rather than acting, organizing and understanding rather than dominating or persuading, and associability rather than sociability. These people prefer to avoid close interpersonal contact, though the quality of their avoidance seems different from that of their Realistic colleagues.

The *Social* (Supportive) people seem to satisfy their needs for attention in a teaching or therapeutic situation. In sharp contrast to the Investigative and Realistic people, Social people seek close interpersonal situations and are skilled in their interpersonal relations, while they avoid situations where they might be required to engage in intellectual problem solving or use extensive physical skills.

The *Conventional* (Conforming) style is typified by a great concern for rules and great self-control, subordination of personal needs, and strong identification with power and status. This kind of person prefers structure and order and thus seeks interpersonal and work situations where structure is readily available.

The *Enterprising* (Persuasive) people are verbally skilled, but rather than use their verbal skills to support others as the Social types do, they use them for manipulating and dominating people. They are concerned about power and status, as are the Conventional people, but differ in that they aspire to the power and status while the Conventionals honor others for it.

The *Artistic* (Esthetic) orientation manifest strong self-expression and relations with other people indirectly through artistic expression. They dislike structure and prefer tasks emphasizing physical skills or interpersonal interactions. They are more intrceptive and asocial much like the Investigatives, but differ in that they are more feminine than masculine, show relatively little self-control, and express emotion more readily than most people.

Korman (1970, 1976) proposes a related aspect of Holland's theory. He proposes that "the self-concept of the individual at the moment is the result of the goal he seeks and the outcomes that will satisfy him" (1973). In other words, people are most satisfied with those behaviors that allow them to feel they are behaving consistently. The degree to which an individual believes that he or she is competent, corresponds to the extent that he or she will seek out situations that are in balance with these self perceptions (Korman, 1970).

In expressing a vocational preference, a person defines who he/she is by the occupation they choose (Korman, 1970). Upon entering a career, he or she seeks to implement his or her self-cognition, along with the goal of achieving self actualization once the career is established (Osipow, 1983). Korman hypothesizes that the consistency of the relationship between personality and occupational choice is moderated by the level of self-concept.

Definition of Terms

There are many definitions of self-concept because of the vast amount of existing theories. For the purpose of the present study, self-concept can be defined as the amount and accuracy of information an individual has about himself or herself (Carver and Sheier, 2000). Vocation refers to the occupation or career one chooses. The operational definition of congruence, in Holland's theory, is the degree of similarity between an individual's personality type and his or her environment. In the present study, the sample consists of college freshmen and sophomores. Freshman is defined as any student that has completed 15 or less college degree credits. Sophomore is defined as any student that has earned 32-64 college degree credits.

Assumptions

One assumption in this study is that the Tennessee Self-Concept Scale actually measures self-concept and that the SDS actually measures vocational interests. Another assumption is that the students will answer the test questions to the best of their knowledge. There is also the assumption that the sample is representative of the population being studied. The last assumption is that the students will not know what this study is about, until after all data is collected.

Limitations

The study is performed based on the assumption that there are limitations. The sample may not be representative of the population being studied because of size constraints. The random sample may not be an even balance of ethnicity and race. Since the questionnaires will be administered during a class period, students may feel pressured due to perceived limited time, and, therefore, answer questions haphazardly. In addition, students may not be truthful in their responses.

Overview

In Chapter 2, literature pertaining to self -concept and its relation to vocational development is reviewed. A description of the Tennessee Self-Concept Scale and the Self-Directed Search scales are also presented.

In Chapter 3, the design of the study is discussed. The sample, operational measures, testable hypotheses, design and analysis are described.

The results are displayed and summarized in Chapter 4. The results contain measurements obtained on the Tennessee Self Concept Scale and on the Self-Directed Search. An analysis of the findings is also included.

The summary and conclusions are discussed in Chapter 5. The conclusions and implications for the results are reviewed. Furthermore, suggestions for future research on this topic are addressed.

CHAPTER TWO

Review of Literature

Overview

This chapter explores the relationship between vocational interest and college major. Research on this subject, done prior to the present study, is discussed in detail. Another significant topic, congruence, is presented as well. Because of the miscellaneous ways in which congruence can be implemented, it is essential to understand its relation to career choice. The concept of congruence has been extensively researched, and various findings are highlighted in this chapter. The construct of self-concept has also been utilized in various ways. Studies concerning self-concept and its relation to career choice and indecision are reviewed. The importance of noting the discrepancy between self-concept and identity formation is also covered in this chapter. The final section is an evaluation of Holland's theory and a conclusive commentary.

Self-concept, vocational interests, and choice of academic major in college students

Research has shown that there is a relationship between the level of self-concept to the congruence between vocational interests and choice of academic major. Wallace and Walker have reported that college students who scored high on the Wallace Self-Concept Scale tended to have a high congruence score on the Zener-Schnuelle Index (1990). In

other words, these results are an indication that college students with a high self-concept appear to have a high match between their vocational interests and their selected college major (Walker & Wallace, 1990). Those students with low self-concepts tended to have a low congruence score between their vocational interests and their selected college major (Wallace & Wallace, 1990).

These results support the theory that selection of a college major is a form of commitment to a vocation and that students have a tendency to sort themselves into fields which are congruent with their interests and personalities (Holland, 1985). The results also give credence to the idea that Holland's six factor classification schema can be applied to arrange majors into "occupational classifications"; and that it is possible to explore differences between college students and their selection of an academic major in relation to congruent and incongruent personality variables (Walker & Wallace, 1990). The research done by Walker and Wallace highlights the belief that self-concept plays an important role in the selection of a career (Korman, 1976). More specifically, people who have a high self-concept level show more congruence between personality and occupational choice (Korman, 1976).

Upon researching this relationship, one must take into account how gender, ethnicity, and age influence the outcome of such a study. Wallace and Walker classified their subjects by gender and ethnic origin (1990). Their data showed that gender and ethnicity did not modify the relationship between self-concept and congruence (Walker & Wallace, 1990). Moreover, using the Skills Confidence Inventory, Betz demonstrated

how minimal gender differences exist in self-efficacy within twenty-one occupations and six Holland job families (1994).

Congruence in research

Prior to Holland's model of classification, traditional schemes were littered with defects such as "ambiguous definitions, overlapping categories, obscure rationales, and incomplete sets of categories" (Holland, 1966). It is important to note that Holland devised his classification scheme in compliance with the basic rules of logical classification: (1) a division must be exhaustive, (2) there must be no overlap across divisions, and (3) a division must proceed at every stage upon one principle, the *fundamentum divisionis*" (Cohen & Nagel, 1934). Using the rules of logical classification, Holland clearly delineated vocational categories (inclusive of both personality type and work environment alike) into discrete units. By doing so Holland allowed for the concept of congruence (and its measurement) to be brought to the forefront of studies regarding career planning, choice of college major, job satisfaction, and occupational stress, to name a few. While Holland's model also has its assumptions and drawbacks, a major one being the accuracy of the indices used to quantify congruence, it is likely that the rules of logic it employs has fortified its longevity.

According to Holland, congruence is the degree of similarity between an individual's personality type and his or her environment (1985). In terms of Holland's typology of three letter codes, congruence is further defined as the relative proximity in

the hexagon between the individual's dominant personality and the dominant type of his or her environment (1985). Holland categorizes persons and environments into six different types. Moving clockwise on the hexagon, the six categories are: Conventional, Realistic, Investigative (moving down the right side), Artistic, Social, and Enterprising (moving up the left). In addition, these six personality types/environments are situated on the hexagon in relation to four generalized categories: Data, Things, Ideas, and People (12, 3, 6, and 9 respectively).

Holland proposed that people can be characterized in terms of their resemblance to each of the six personality types and that work environments can be characterized by their similarity to or difference from six corresponding "model environments" (Jagger, Neukrug, McAuliffe, 1992). According to Holland, "People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles" (1985). Congruence is an expression of such a match (Jagger, Neukrug, McAuliffe, 1992).

There are several tests that assess vocational interest in conjunction with Holland's three-letter code system. They include: Strong-Campbell Interest Inventory, Career Assessment Inventory, Career Attitudes and Strategies Inventory and the Self-Directed Search, or SDS (the method used in this study). "The SDS-R consists of a number of subtests- Aspirations, Activities, Competencies, Occupations, and Self-Estimates. Each subtest is designed for assessing an individual's similarity to each of the six Holland types. An individual progresses through each subtest by responding "Like" or "Dislike" or "Yes"

or “No” to most of the items. Self-estimates require the individual to rank self on a 1-7 scale on each of six traits related to the six Holland types” (Miller, 1999). The resultant three-letter code derived from a vocational interest test such as the SDS is then compared (using a congruence index) to a three-letter work environment code. In the case of this study, college major is indicative of a projected work environment.

It is necessary that congruence indices measure the three-letter code relationships in a comprehensive manner because, according to Holland’s (1973,1985) theory, when clients are thwarted in their choice of occupational environments that correspond to their dominant types, they will tend to select occupations that resemble their secondary or tertiary personality types (Miller, 1992).

Four indices commonly used to measure congruence are as follows: the Zener-Schnuelle index or Z-S, Iachan’s M index, the Kwak and Pulvino index or K-P, and the C index.

The Z-S index (Zener & Schnuelle, 1976) utilizes three-letter person and job codes and is based on “the inverse probability of occurrence of two three-letter codes taken two at a time” (Holland, 1985). The Z-S index uses a specially devised ordinal index (0-6) inversely related to the probability of chance similarity, higher scores indicating greater congruence (Miller, 1992). According to Holland, the Z-S index estimates the agreement between two three-letter codes in a useful way, especially when their divergence is unusual (index = 0 to 2). According to Miller (1992), the Z-S index does not seem to discriminate meaningfully among the possible outcomes; that is, codes may have the same measure of agreement, but are clearly not the same. For example, the Z-S index comparisons of

codes with letters “the same but out of order” (i.e., SIA/ISA, or ECR/CRE) are all ranked as 4's. On the other hand, the Z-S index is less complex, easier to calculate, and may be most appropriate when less precision is required (Miller, 1992).

Iachan's (1984) M index computes congruence scores by summing numerical weights (which range from 1 to 22) that correspond to positions where interest-job matches occur. An example of Iachan's M index made explicit by Miller (1992), is as follows: “A person code of ACE who is paired with an occupation (vocational choice) of CER, shows two letters in common, C and E. The C is in positions 2 and 1 (or 1 and 2), with a weight of 10. The E is in positions 3 and 2 (or 2 and 3), with a weight of 2. Therefore, the M index is 12 for this person. In order to discriminate as much as possible among different configurations, Iachan (1984) used some relatively large weights”. Holland (1987) endorsed the M index as the best available measure of congruence. According to Miller (1992), “the Iachan method has broad applications both within and out of vocational settings”. Agreement between husband and wife, or between counselor and client, can be evaluated with the Iachan method (Iachan, 1984).

The formula Kwak and Pulvino developed for their index (1982) includes all three letters in its calculation. Because a determination of a relationship is more difficult when one compares two three-letter codes that are not identical, Kwak and Pulvino (1982) developed a formula to account for this relationship. The index is based on mathematical combinations of all six personality types in that it uses weights based on Holland's hexagon. A weighting system of W1, W2, and W3 was used for dominant, secondary, and tertiary types. In addition, weights of 4, 2, 1 were assigned to the three letters of the

summary codes somewhat arbitrarily, to indicate that each characteristic is twice as influential as a succeeding characteristic (Kwak & Pulvino, 1982). K-P index scores were also derived using separate correlation matrices for women and men, because research has demonstrated sex differences in the structure of vocational interests (i.e., Hansen, Collins, Swanson, & Fouad, 1993; Rounds, 1995). Kwak and Pulvino based these correlation matrices on data from men and women in the normative group for Holland's 1985 revision of SDS (Young, Tokar, and Subich, 1998). According to Camp and Chartrand (1992) the K-P index more fully operationalizes Holland's (1985) hexagon hypothesis than many other commonly used congruence indices. Also, Brown and Gore (1994) compared 10 different congruence measures using simulated data and found that only the K-P index was capable of discriminating among cases with like, but out-of-order, interest-job codes.

The C index was developed by Brown and Gore (1994), as a computationally simpler alternative to the K-P index. "According to Brown and Gore, the K-P and C indices are superior to other congruence measures in that they (a) incorporate a hexagonal distance measure [based on Holland's (1985a) RIA-SEC model] into the calculation of congruence scores, and (b) are able to discriminate among cases with like, but out-of-order, interest and job codes" (Young, Tokar, and Subich, 1998). The C index, however, is more user friendly because it is easier to calculate and produces a symmetrical distribution of congruence scores. C index scores range from 0 to 18 and as with the other indices, the higher the score, the greater congruence

The difficulty of quantifying the similarity between two 3-letter Holland codes is at the heart of the issue of measuring congruence (Osipow, 1987). Assouline and Meir

(1987) conducted a meta-analysis of 41 congruence studies, 21 of which included satisfaction. According to Assouline and Meir (1987), “there was little or no relation between satisfaction and congruence”, however they did find considerable variation in the strength of the relation as a function of the method of measuring congruence.

Camp and Chartrand (1992) began to address the issue of how choice of congruence index may influence research findings. They examined 13 congruence indices in terms of their relations to each other and to outcome measures (i.e., academic adjustment, career indecision, satisfaction with major, and student commitment). They stated that despite the wealth of correlational research of Holland’s theory, few studies examined the merit of congruence measures themselves” (Young, Tokar, and Subich, 1998). Camp and Chartrand (1992) concluded that “the congruence indices are not interchangeable” and that “the magnitude and significance of these correlations [with outcome variables] was clearly a function of the congruence index employed.”

Brown and Gore (1994) examined congruence indices in terms of their abilities to discriminate degrees of congruence by gathering information on index measurement sensitivity (i.e., the degree to which a wide range of scores is possible and the extent to which the underlying distribution is normal) (Young, Tokar, and Subich, 1998). According to Young, Tokar, and Subich (1998) “congruence indices differ in meaningful ways in terms of level and variability; such differences may be important in tests of Holland’s theory.” In addition, according to Miller (1992), “it seems that the choice of which index is most appropriate remains contingent on one’s particular purpose.”

The limits of congruence measurement is not confined solely to the type of index used, but is also related to other external factors that may distort what vocational interest test are measuring. For example, according to Young, Tokar, and Subich (1998), “congruence may be irrelevant for persons whose careers are not important to them as anything other than a source of income.” Another possible reason for the lack of a relation between the congruence variables and progress in career decision making may be found by examining relevant individual as well as social factors (Blustein et al., 1994). From an intrapersonal perspective, it may be that many students are progressing through their career decision-making tasks in a “foreclosed” fashion (Blustein et al., 1994). The concept of foreclosure refers to the attainment of a stable ego identity without sufficient exploration (Erikson, 1968). As described by the theory, individuals with this status are more likely to make vocational decisions that ultimately are discrepant with their abilities, needs, values, and interests (Manuele-Adkins, 1992).

According to Blustein et al. (1994), “the lack of a relation between congruence and progress in career decision making may reflect constraints in the occupational world based on a rapidly changing labor market.” The fundamental changes in the structure of the labor market (i.e., the loss of major industries, the reduction of opportunities in middle-level management and manufacturing; see McDaniels, 1989) may be creating a press for students to select career choices based on availability as opposed to personality type or self-concept expression (Blustein et al., 1994).

Self-concept and career

The process of career development is developing and implementing a self-concept (Betz, 1994). The self-concept is a product of interaction of inherited abilities, an opportunity to play various roles, and evaluations of the extent to which the results of role playing meet the approval of the superiors and co-workers (Betz, 1994). On the simplest level, Super (1950) illustrates self-concept in the following way: “What sort of person am I?” and he explores his objective self; he asks: ‘What sort of person do I want to be?’ and explores his subjective self; he asks, ‘How can I reconcile those selves?’ he relates his self-ideal to reality, and he reorganizes his picture of himself to bring about a better self-integration. He emerges from this process a more self-accepting, self-understanding individual, with an integrated set of values which makes it easier for him to select goals and move systematically toward their attainment.”

According to Super (1950), “the choice of an occupation is one of the points in life at which a young person is called upon to state rather explicitly his concept of himself, to say definitely ‘I am this or that kind of person.’” Super (1963) defined vocational self-concept as “The constellation of self-attributes considered by the individual to be vocationally relevant”. One measurement of self-concept is the Tennessee Self-concept Scale where an individual indicates with a five point scale whether each of the 100 descriptive statements is true or false about him/herself (Fitts, 1965).

According to Betz (1994), “self-concept, although having immense intuitive appeal, is simply too broad in its potential meaning to be useful either theoretically or practically without careful definition and specification.” In order to make the notion of

self-concept more operational, researchers tried to reduce it to two evaluative components, one being self-esteem, and the other self-efficacy. Korman (1967), noted that individuals lacking in self-esteem are less likely to make good matches between self and occupational role. Osipow's research on women's career development (1983), illustrates self-esteem and other self-concept features to be pivotal in the career development of women. According to Stein, Newcombe, and Bentler (1990), women pursuing advanced education or full-time work showed an increase in self-esteem, while those choosing either part-time or no outside employment showed a decrease. The component of self-esteem has also been delineated for specificity into academic self-esteem (Shavelson, Hubner, & Stanton, 1976) and performance self-esteem (Stake, 1979).

Self-efficacy is derived from Bandura's self-efficacy theory because researchers Hackett and Betz (1981) believed that it could make explicit the process by which traditional gender role socialization influenced women's (as well as men's) self-referent evaluations in relationship to career choices and behaviors. According to Betz (1994), "self-efficacy expectations are expectations or beliefs concerning one's ability to perform successfully a given behavior."

Hackett and Betz (1981) theorized that low expectations of self-efficacy with respect to many career areas, particularly those in traditionally male-dominated career areas, were a major mediator of gender differences in vocational choice and subsequent vocational behavior. "Although more research is needed (Lent & Hackett, 1987), self-efficacy theory provides one model application of Super's theory for several reasons (Borgen, 1991). First, it postulates a process by which specific self-concepts (in this case

perceptions of self-efficacy with respect to career-related domains of behavior) are related to (implemented in) career options, preferences, and other behaviors. Second, self-efficacy theory nicely combines Super's emphases on both the self-concept and learning theory. (Super [1990] has described his work as a 'loosely unified set of theories . . . held together by self-concept and learning theory.') Furthermore, unlike traditional trait-factor theory, career self-efficacy theory is based on subjective perceptions of, rather than objectively measured, characteristics--the important variable influencing individuals' perceived range of career options is not their measured abilities, but their beliefs concerning their competence in various behavioral domains. Thus, self-efficacy theory incorporates the phenomenological basis of Super's ideas about the self-concept. Finally, because it is embedded within a learning theory of its origins that is directly applicable to counseling interventions, self-efficacy theory has applied as well as theoretical utility" (Betz, 1994).

Gottfredson (1981) argues that the importance of self-concept is that it forces an integration of psychological and non-psychological (i.e., environmental) factors influencing career choice and development. Gottfredson's theory operationalized the processes by which self-concept and occupational concepts are compared, such as circumscription (narrowing) of career choice alternatives and compromise between preferences and employment realities. Central to both these processes were perceptions of self-job compatibility along three important dimensions: occupational sex-type, prestige, and field of work (Betz, 1994). Gottfredson and other researchers today agree that the self-concept must be differentiated into contents (what Gottfredson calls "identities")

versus evaluative components such as self-esteem (Betz, 1994).

Conclusion: An evaluation of Holland's model

“The test of a classification lies largely in its usefulness in subsequent research and practice rather than in its particular method of construction” (Holland, 1966). More than thirty years after the inception of his model, Holland's words circa 1966, echo both the strength and the weakness of his model. According to Hyland and Muchinsky (1991), “over the past two decades, approximately 700 studies have been directed toward various aspects of Holland's (1973, 1985) theory. Those studies in which the structural validity of the theory that was addressed have been concerned with the correctness of the hexagon for modeling the structure of interests. . . . Findings supportive of the proposed structure were reported in a large percentage of these studies.” It is natural that given time and 700 subsequent studies, the “particular method of construction” would be de-constructed (Holland, 1973, 1985).

Just as Freud's theories can be said to be contextually specific to the era and area in which he lived, Holland's model as well is subject to contextually specific limitations (White America in the 60's). The ability of Holland's model to account for variables such as an ever-changing job market, the development of cultural diversification in America, and application across cultures, is in question and obviously would be considering its origins. Hansen (1992) asks, “If various minority and international populations have different structures of interests, do we need to develop inventories specifically for each population with whom interest inventories will be used?”

Researchers such as Epperson and Hammond (1981) and Gade, Fuqua, & Hurlburt (1984) suggest that local norms are necessary for adequate interpretation of interest inventories with homogeneous and divergent cultural groups. “Gati pointed out (1982) that if the same Holland calculus predictions are disconfirmed repeatedly across studies, the disconfirmations suggest changes in the theoretical model which may result in either a better universal model of the structure of interests or several models that more accurately reflect the individual differences of diverse populations” (Hansen, 1992).

Holland (1985) conceded that the hexagon is more of “a misshapen polygon”, but did not indicate where the deviations from regularity occurred, and did not alter his constructs of congruence and consistency to account for such deviations. However, “the deviations that have been reported in the literature have not been predictable and consistent within or across populations, and as a consequence model restructuring would not lead to an improved representation of the structure of interests” (Hansen, 1992).

Sensitivity to socio-economic class, particularly its lower echelons, is also problematic for Holland’s model. Upperman and Church (1995) could not identify any studies that have tried to differentiate working class occupations having the same first letter of the Holland codes. Examining these discrepancies is important in addressing the generalizability of Holland’s framework to the broader economy due to the fact that a very large percentage of occupations are coded by Holland as Realistic (65%) (Gottfredson et al., 1982). “If these occupations can not be distinguished using Holland codes, then the typology will have limited usefulness for differential placement within this large Realistic domain” (Upperman & Church, 1995).

The applicability of Holland's theory in relation to the fluctuating job market has also been questioned. According to Downes and Kroeck (1996), "little attention has been given to the normative interests of the population across the different occupational areas and the actual availability of jobs in those areas. No research to date has specifically linked occupational interests with the likelihood of employment." More research, as well as modifications to Holland's theory are imperative to reconciling these assessment differences and in order to lower the 23% of new hires that leave their jobs within a year due to lack of congruence (Bretz, Ash, & Dreher, 1989).

Obviously Holland did not incorporate cross-cultural factors into his theory. According to Leong et al. (1998), "many cross-cultural studies of Holland's theory have failed to focus on the dimensions of congruence, consistency, and differentiation as predictors of criteria (i.e., external validity). In addition, few studies of Holland's theory have examined measurement issues such as functional, conceptual, linguistic, and metric equivalencies (Leong, 1997). To further explore the cultural validity of Holland's theory, further investigations are necessary.

Summary

Congruence is the degree similarity between an individual's personality type and his or her environment. The limits of congruence measurement are related to the type of instrument used, as well as other external factors. One's knowledge of his or her personality type (self-concept) is essential to knowing the environments in which they would thrive.

Self-concept is a product of interaction of inherited abilities and an opportunity to play various roles. A large part of the career development process is developing and implementing a self-concept. The relationship between self-concept, vocational interests, and choice of academic major will enhance the career development process. A college level sample is the ideal group since they are at the peak of developing an ego identity, while at the same time are faced with the challenge of making significant, vocational decisions. It is, therefore, crucial to further evaluate this relationship in depth.

CHAPTER THREE

Design of the Study

Sample

The population base for this research was 5,703 freshmen and sophomore students, from a suburban community college, who had chosen an academic major. The sample drawn from this population was 60 freshmen or sophomore students (ages 18-26), randomly selected from the base population, who were enrolled in either English Composition I or English Composition II. Demographic information was also collected from each student. There were 12.4 percent African American, 3.4 percent Hispanic, 13.6 percent Asian, 5.4 percent Other, and 64.6 percent Caucasian participants.

Measures

The two standardized instruments used in this study were the Self-Directed Search (SDS), and the Tennessee Self-Concept Scale (TSCS). Both scales have shown adequate reliability and validity and can be used with confidence.

The Tennessee Self-Concept Scale (TSCS) is a hundred item self-description scale, organized into two forms: a counseling form, Form C, and a clinical form, Form C&R. Ninety items assess the self-concept and ten items assess self-criticism (which are all

MMPI Lie Scale items) (Fitts, 1965). For each item, the student chooses 1 out of 5 responses labeled “completely false” to “completely true.” Items of the scale fall under the following categories of the self: Identity, Self-Satisfaction, Behavior, Physical Self, Moral-Ethical Self, Personal Self, Family Self and Social Self. In addition, major additional scores are derived: Total Positive Score, reflecting the overall level of self-esteem; Variability Scores, reflecting the amount of consistency from one area of self-perception to another; and Distribution Score, a measure of extremity response style. Finally, the Clinical and Research form yields scores for True/False ratio, a measure response style; Net Conflict Score, reflecting responses to positive vs. negative items, Empirical Scales for group discrimination of various kinds; and Number of deviant Signs Score, a measure of the deviant features on all other scores. Thirty scores are derived and reported on the profile sheet.

The Tennessee Self-Concept Scale was normed on a sample of 626 people of varying age, sex, race, and socioeconomic status (Fitts, 1965). Retest reliability ranges between .80 and .91, and several scores from the scale have high correlations with other measures of personality functioning (e.g. MMPI) (Fitts, 1965). Studies of internal consistencies have reported coefficients around .90, suggesting that the total score remains stable over time. Concerning the validity of the TSCS, correlations with the Piers-Harris Children’s Self-Concept Scale have been found to range between .51 and .80; correlations with the Coopersmith Self-Esteem Inventory were found to be between .64 and .75 (Fitts, 1965). Because these scales tap academic and peer domains not measured by the TSCS, these correlations provide strong support for the validity of the scale.

The Self-Directed Search (designed by John L. Holland) is a vocational interests scale that is used widely by guidance counselors, school personnel, and human resources. Subjects assess themselves within a number of categories including : occupational daydreams (aspirations), activities, competencies, occupations, and self-estimates (Holland, 1994). The SDS is a paper and pencil test that takes subjects 20 to 30 minutes to complete. It lists activities that are categorized by Holland's personality dimensions (i.e. Realistic, Investigative, Artistic, Social, Enterprising, and Conventional). Test takers are to check off an "L" for "like" and "D" for "dislike" accordingly. The lists of competencies presented are arranged by personality dimensions as well. Students are to check off "Yes" or "No" depending upon their competency in a given area. The subjects' self-estimates in regards to these personality dimensions are also rated. A rank ordering of the resultant summed sub-scales produces a three-letter Holland summary code, which is said to represent the subject's vocational personality type.

The SDS is an instrument that is intended to be a vocational intervention by which subjects are encouraged to utilize the information obtained to explore compatible occupations (Holland, 1994). Predictive validity has been demonstrated for female and male college students. A median test-retest reliability of $r = .61$ for males and $r = .64$ for females has been reported for the sub-scales of college students over a 3-4 week period. Retest reliabilites for highest code rank (summary code scale) ranged from $r = .63$ to $r = .95$ over the span of one year (Holland, 1994).

Congruence measures the extent to which a subject's SDS summary interest code agrees with the Holland code of his or her expressed current occupational aspiration. It is

operationally defined as a score which ranges from 0 to 10 on the Zener-Schnuelle index, 10 indicating a perfect match (Robins, Thomas, Harvey, and Kandefer, 1978). The index score was derived by first assigning the student's academic major a three letter Holland code. Congruence was determined by matching the three letter codes of the academic major to the SDS results.

Design

The design of this study was descriptive in nature. It was correlational and the Pearson r correlation was the statistical method used to measure the relationship between the independent variable, self-concept, and the dependent variable, congruence.

Testable Hypotheses

Null hypothesis: Students with a high self-concept score will not have a high congruence score between academic major and vocational interest.

Alternate hypothesis: Students with a high self-concept score will have a high score congruence between academic major and vocational interest.

CHAPTER FOUR

Analysis of Results

The purpose of this research was to determine if self-concept moderates congruence between student's vocational interest profile and the selection of an academic major. Self-concept was measured by using the Tennessee Self-Concept Scale and vocational interests was measured by using the Self-Directed Search on a population of 60 college freshmen and sophomores (ranging from ages 18-26). The null hypothesis stated that students with a high self-concept score will not have a high congruence score between academic major and vocational interest. The alternate hypothesis stated that students with a high self-concept score will have a high congruence score between academic major and vocational interest.

Table 4.1 presents a summary of the means and standard deviations for the congruence scores, which is the dependent variable, and the self-concept scores, the independent variable. Here, the congruence mean score was 5.65 with a standard deviation of 2.54, and a range of scores from 0 to 10. The self-concept mean score was 48.2 with a standard deviation of 25.51, and the range of scores was from 8 to 95 percent.

As shown in Table 4.2, a Pearson Correlation resulted in a correlation coefficient of .594, which at the .01 level (2-tailed) proves to be significant. Since the correlation

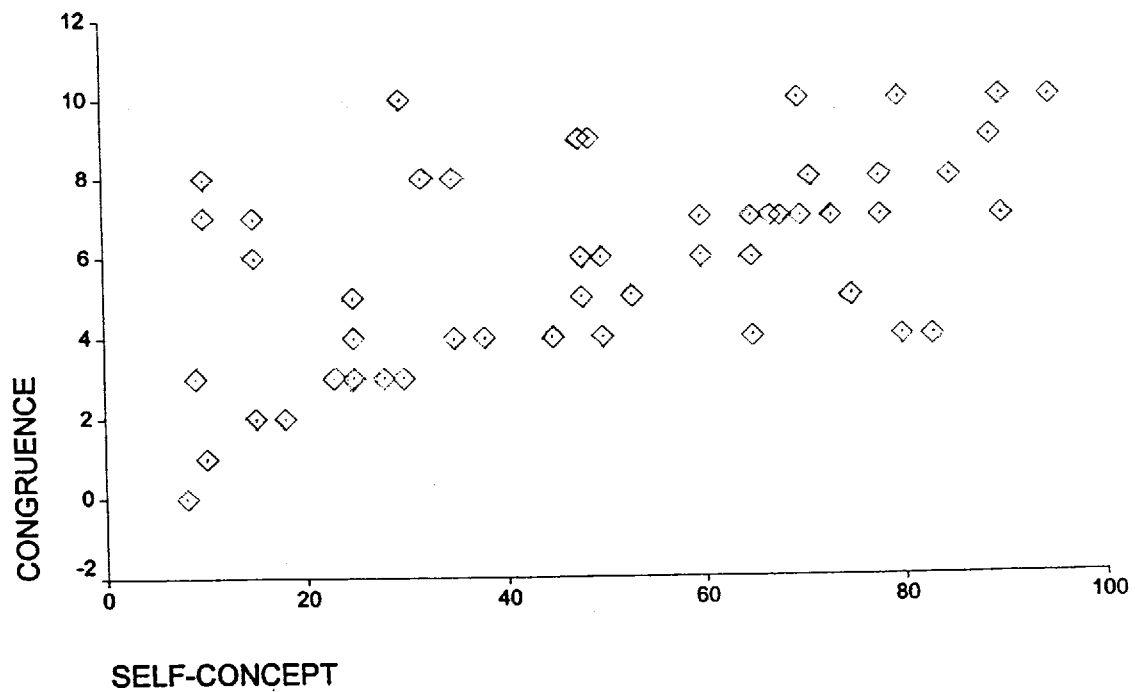
Table 4.1 DESCRIPTIVE STATISTICS					
	N	Minimum	Maximum	Mean	Standard Deviation
CONGRUENCE	60	0.00	10.00	5.6500	2.5367
SELF-CONCEPT	60	8.00	95.00	48.2000	25.5076
NUMBER OF SUBJECTS (valid N listwise)	60				

Table 4.2 CORRELATIONS		
	CONGRUENCE	SELF-CONCEPT
CONGRUENCE		
Pearson Correlation	1.000	.594**
Sig. (2-Tailed)	.	.000
N	60	60
SELF-CONCEPT		
Pearson Correlation	.594**	1.000
Sig. (2-Tailed)	.000	.
N	60	60

****.** Correlation is significant at the 0.01 level (2-tailed).

coefficient was statistically significant, an examination of the independent variable and its relationship to the dependent variable is justified. The null hypothesis was not supported by this data. In table 4.3, a scatter-gram depicts these results.

Table 4.3
Relationship Between Congruence of
College Major and Vocational Interests
And Self-Concept



CHAPTER FIVE

Summary and Conclusions

Summary

The hypothesis that college students with high self-concepts tended to have a high congruence score between their vocational interest profile and selection of an academic major was supported by the analysis of data. On the other hand, those college students with low self-concepts had a tendency to have a low congruence score between their vocational interest profiles and selection of a college major. The results are consistent with the findings of the study done by Wallace and Walker (1990).

Conclusions

It is important to examine these results from theoretical and practical standpoints. Theoretically, the data supports the theory proposed by Korman (1970, 1976), which stated that people who have high self-concepts are more likely to experience congruence between personal characteristics and employment preference than those students who have low-self-concepts. Moreover, the notion that the choice of academic major is a form of commitment to a career is supported by the research results. Students tend to sort themselves into fields, or majors, which are congruent with their interests and personalities. The research demonstrated that Holland's classification system could be

utilized in categorizing academic majors as occupational classifications. As seen in other studies, it is possible to explore discrepancies between college students and their preference of an academic major in light of congruent or incongruent personality variables.

In terms of practical applications, the results may be applied to various aspects of academic counseling. Walker and Wallace point out that if choosing a college major is a form of commitment to a career, it would greatly benefit students to consider their selection of a major when they first start college (1990). The career development center, for instance, may work in conjunction with academic advisors to develop a program in which students would be advised to complete the Self-Directed Search or other comparable inventories, along with any of the available self-concept scales. This sort of intervention would enable students to make more appropriate choices of an academic major. Selections, such as those mentioned above, would most likely be in alignment with their interests and personality type. Ultimately, this would result in greater academic achievement and fulfillment with their college experiences and later on in their future career paths.

Wallace and Walker suggest one idea that may facilitate early exploration and selection of an academic major (1990). "A Personal Profile Assessment Program" might be proposed on either a formal or informal basis to encourage students to take a series of vocational and personality inventories similar to those previously mentioned (Walker and Wallace 1990). The information gathered would be used for developmental purposes, instead of diagnostic purposes. During freshman year, academic-advising seminars might

be made regularly available in order for students to examine the relationship between interests, personality and the selection of an academic major. These seminars would serve the dual purpose of strengthening students' self concepts, while presenting information regarding career options. Certain seminars should focus on the special needs of individuals whose scores indicate lower levels of self-concept. One example of how this might operate is providing these students with the opportunity to partake in an internship or work-study program. In doing so, the students would gain the strength and experiences needed to build self-confidence and engender a sense of accomplishment.

In conclusion, the concept of "career counseling" should not be taken for granted. In terms of the results of this study, special attention should be paid to the selection of an academic major as a commitment to a vocation, which would then result in choosing more appropriate academic majors. The better the congruence between students' interests and academic choices, the more likely they will excel and be satisfied with their college experiences.

Implications for Future Research

Further research on this subject may follow up on students who participate in studies such as the present one. The individuals who took part in this specific study were freshmen and sophomore students. Future exploration may involve looking at whether or not the students have continued with the major that aligned with their vocational interests, and whether their level of self-concept has developed at all. This would validate the

effectiveness of the career seminar that was discussed earlier. In addition, those students with low self-concepts and low congruence scores should participate in vocational counseling with longitudinal follow up. In the present study, gender and ethnic origin were not included in the statistical analysis. Future research may incorporate these variables and observe whether or not there is significance in taking them into account.

College is a particularly crucial experience in anyone's life. The decisions one makes regarding academic major is a precursor to a lifetime of employment. It is therefore imperative to take into account personal factors, such as vocational interests and self-concept. If careful attention is paid to these elements early on, the individual will have a more satisfying college experience, and will be able to better adapt to the ever-changing job market.

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