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Interest as a Factor in Vocational Choice

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INTEREST AS A FACTOR IN VOCATIONAL CHOICE

by

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PREFACE

This is a report of a field study. While presented as a plan B paper, it includes both related literature and a report of the study itself.

INTRODUCTION

Background

As the complexities of modern life increase, greater caution has to be exercised in the selection of an appropriate vocational choice. Norris, Zeran and Hatch (1960, p. 5) state, "The dramatic changes which have taken place in the world during the past twenty-five years have created new demands on the training programs which furnish the skilled leaders in all vocational pursuits." The foregoing statement certainly points out the vocational implications of our changing society. Mortensen and Schmuller (1951, p. 199) report, "The entire area of interests is today receiving added emphasis." The study of interest continues to occupy an important position of investigation by school counselors and others involved in the area of vocations.

It is interesting to note that due to technological advances our work force has shifted. Norris, Zeran and Hatch (1960, p. 5) have observed:

> Not many years ago we were occupied primarily in farming, manufacturing, construction, and mining. Developments in technology have changed our work force so that the professionals, technicians, office workers, salespeople, and managers now make up its largest segment. This shift in our vocational pursuits has placed a premium on training and education . . . .
>
> The young man or woman of today faces two major obstacles in relation to a vocational choice. First, the changing pattern of the work world requires a constant analysis of future job opportunities. Second, the specialized demands of a diversified business, industry, or profession dictate careful course selection to avoid unnecessary content and guarantee maximum training in the pertinent areas. A youth must not only

> prove his proficiency in the areas of study, but he is expected to gain skill in the selection of his training program.

With the shift in the work force many of the vocations young people enter will require considerable training and they should certainly be aware of their interests before they embark on an extended training program. It is vital that young people make appropriate vocational choices. Money may be spent in attempting to achieve a desired goal, if it is determined that the choice is inappropriate then, perhaps, a new goal will have to be established. More important than the money that may be lost are the years that may be lost. This is expressed by Ghiselli (1966, p. 3) when he states, "It is possible to replace lost dollars with other dollars, but time lost from a man's life is utterly irreplaceable." The importance of vocational choice is again emphasized by Murphy (1963, p. 1):

> In a modern industrial society, a person's occupation is not just a way of making a living, but a way of life. Nearly half of man's waking hours for forty years or more are taken up with his work. This statement is equally true for the single woman, and in the future even the married woman with children is expected to work an average of thirty years. The experiences absorbed during these thousands of working hours affect every aspect of a person's life: his attitudes toward society, his friends and acquaintances, where he lives, what he does with his leisure time. In addition, his prestige in the eyes of others and his role in society are largely determined by his occupation. A young person's choice of a career is thus one of the two or three most important decisions of his life.

When faced with the decision of making a vocational choice, some young people have very definite ideas about their interests. Stewart and Warnath (1965, pp. 150-151) suggest some of the problems young people may have in making their decisions and what might help them in making an appropriate choice.

> It is true that many youth do have a well-defined set of likes and dislikes. They have evaluated their past experiences, and on the basis of such evaluation have decided that their personal satisfactions can be obtained from a restricted range of activities. Other students, however, have not been able to assess their experiences to this degree. They may be concerned because they have been unable to narrow their range of interests into a mainstream of activity, or they may have no conception of the kinds of satisfactions they are seeking in life or where such satisfactions can be found. With these students, interest inventories can help delimit areas of concern or can point up leads for exploration.

Interests should be studied and evaluated in order to help young people and adults make appropriate vocational choices and enhance their chances of ultimately achieving vocational success.

General Purpose

The purpose is to study factors relating to the making of vocational choice. To do this, the paper first reviews the literature relevant to interest as a factor in vocational choice and then this paper reports the results of a field study, using as instruments the Kuder Preference Record-Vocational and the Vector Analysis of the Self-Concept (VASC) as developed by Dr. David R. Stone and modified in 1968 for the purpose of this study.

Limitations

This study will be limited to interest as a factor in vocational choice. Factors involved in vocational choice such as individual ability, aptitudes and training or schooling will not be covered.

REVIEW OF RELATED LITERATURE

In reviewing the literature, considerable emphasis has been noted concerning the importance of interest to vocational achievement. Ohlsen (1955, p. 160) reports, ". . . ability to do the work involved is important in determining whether or not one achieves his vocational goals. . . sustaining interest in the vocation is also important to success." Interests should be recognized and evaluated even though they may appear to be unrealistic. Hoppock (1963, p. 12) points out that even though the preferences of students are often un-realistic, they are nevertheless important, because students will show little interest in exploring other occupations until they have examined their first choices.

Methods of Measuring Interest

Interests may be measured by a number of methods. McDaniel et al. (1959, p. 77) reports:

> One method provides for the individual to state his interests. Another technique includes observation of what the individual does, as an indication of manifest interest-what are his hobbies, his success experiences in school, his work experience, and so forth. The most common instrument used by counselors is the interest inventory, which appraises an individual's level of interest in a variety of types of activities.

The literature indicates that the Strong Vocational Interest Blank and the Kuder Preference Record are the most frequently used interest inventories at the secondary school level.

Knowledge of Interests is Helpful

According to Ohlsen (1955, p. 162) some students may select certain goals or vocations because they want to be like an admired person, or obtain the prestige that may be involved and have little awarness of their own interests or abilities. Richards (1951, pp. 14-15) lists five reasons why a knowledge of interests is helpful:

> 1. Interest tests can be used to help pupils discover their interest and supplement their knowledge of interests.
> 2. Interest is a factor to be considered in academic guidance.
> 3. Interest is a factor to be considered in vocational guidance.
> 4. Interest is a factor to be considered in predicting academic success.
> 5. Interest is a factor in helping pupils adjust to their environment and develop their personalities.

Since interests are important in considering vocational choice, the question as to the permanence of vocational interests should be considered. Some early investigations indicated the possibility that interests were not too permanent; if this were the case there would be little use for the research conducted concerning interests and the use of interests inventories. More recent investigations support the permanence of interests. Darley and Hagenah (1955, pp. 36, 52-53) report:

> If occupational interests as measured are capricious, chaotic, or dissorderly, there is no sense in the attempt to use them in counseling individuals. But evidence indicative of stability of interest patterns has come increasingly in recent years as long range follow-up studies of individuals tested in earlier years have reported . . .
>
> Our reading and interpretation of the literature would stress, rather, the orderly development and substantial permanence of occupational interest in the life of the individual . . .

> Meanwhile, the burden of evidence as we read it, stresses permanence of vocational interests in the great majority of individuals.

Over the past years considerable time and effort have been expended in the study of interests and the development of interest tests or inventories to measure interests. Cottle and Downie (1960, p. 237) indicate that the greatest amount of research and publication in the area of interests has been done in relation to vocational interest. They report that in addition to the Strong Vocational Interest Blank, other major inventories in use today are the Kuder Preference Record-Vocational, the Allport-Vernon-Lindzey Study of Values, the Occupational Interest Inventory, and the Brainard Occupational Preference Inventory.

Definitions of Interest

General definitions

The question may be asked, what is an interest? Webster's New Collegiate Dictionary defines interest as: "Excitement of feeling accompanying special attention to some object." The "object" may be a vocation. Froehlich and Darley (1952, p. 277) defines interests as follows:

> Interests may be thought of as one of the forces that motivate activity. In other words, they represent a tendency to select one activity or thing in preference to something else, to choose one instead of another. Said even more simply, interests are likes.

Berdie (1951, p. 305) says the term interest, "is used to designate a concept pertaining to factors within an individual which attract him to or repel him from various objects, persons and activities within his environment."

Super's categories of interest

In reading the literature the student may become aware of the loose use of terms involving interests. Super (1957, pp. 218-219) defined and classified interests into four categories:

> Expressed interests are expressions or professions of specific interest; they are preferences. Thus a boy may say that he is interested in stamp collecting or in engineering.
>
> Manifest interests are expressed not in words, but in action, through participation in activities. Thus a high school girl manifests an interest in music by joining the glee club, by singing in the church choir, or by collecting classical records.
>
> Inventoried interests are estimates of interests based on responses to a large number of questions concerning likes and dislikes, or concerning the order or preference for groups of activities. These responses are then summarized by statistical methods which yield a score for each of a number of occupations or types of occupational activity. Widely used and rather well studied inventories include the Strong Vocational Interest Blank and the Kuder Preference Record, but even these are different enough in principle and method so that it is necessary, when using one of them, to know whether or not certain relationships have been established for that particular instrument. What holds for one may not hold for the other.
>
> Tested Interests are manifest interests but interests manifested under controlled rather than in life situations. Thus a test of the relative amounts of information retained about several occupations after seeing a variety of occupational pictures, or a test of the relative amount of time spent examining each of several pamphlets on as many occupations, would be an interest test. Although some interesting research has been done with such methods, no such tests are currently available.

Super (1957, p. 219) reports that early investigation of interests relied on expression of interests. Most of what we know about the role of vocational adjustment has come through work with interest inventories.

Facts About Interest

Considerable information has been collected concerning interest. Froehlich and Darley (1952, pp. 296-297) have summarized some of the important facts about interests:

1. On the basis of experimentation and logic, it appears that a wide range of occupations can be classified into about nine clearly defined interest types..
2. These interest types seem to be fairly well established in an individual in the age range 16 to 25--that is, before he has had an opportunity to build up any extensive occupational experience.
3. While in this age range, some persons may not develop clearly defined interest patterns; other persons may never develop a type of interest which enables them to make a stable or satisfactory job adjustment.
4. Interests do not appear to have a close relationship to aptitudes. The correlation between a measured interest and a measured aptitude, both in the same field, is positive but relatively low. For example, a person may have a high musical interest but little musical aptitude.
5. The interest test scores of students are not good predictors of their achievement in school. Students who are interested in a subject tend to persist in the study of it. They are no more successful, however, than students of equal ability who express little or no interest in that same subject.
6. Interest tests cannot predict occupational success except in a few fields of work, notably salesmanship. It appears, however, that men with high interest test scores in their occupations tend to continue in these occupations longer than those who have low interest scores in their field of work.
7. Scores on an interest inventory do, within limits, predict the amount of satisfaction a person will obtain from certain kinds of schooling and certain kinds of occupations.
8. Many people by virtue of their abilities, backgrounds and general interest make-up, can be satisfied in any one of a number of school courses and in any one of a number of jobs.
9. The best measurements of interests are those which attempt to get the student to express choices among a wide range of activities to which he has been exposed rather than to express preferences for specific occupations about which he has only limited information.

Topology

It is necessary to present a brief review of some of the elements of topology because the VASC, an instrument used in this study and described later, involves principles of topological representation.

Lewin's field theory

Topology and topological representation is based upon Lewin's field theory. Hall and Lindzey (1957, p. 223) report concerning topology:

> Topology deals with spatial relations. It is not concerned with size or shape, nor with magnitudes, distances, and other conventional characteristics of space. Topology involves such spatial relationships as "being included in," "part-whole," and "connectedness and disconnectedness." Since Lewin represents his structural concepts topologically he calls this part of his system topological psychology.

Valence

Lewin uses such concepts, among others, as "valence" and force or "vector" to explain his theory or system of topological psychology. Lewin (1935, p. 51) describes valence as an existing state of tension; he states:

> An already existing state of tension, which may go back to a purpose, a need, or a half-finished activity, is interested in a certain object or event, which is experienced as an attraction (or repulsion), in such a way that this particular tense system now obtains control of the motorium. We shall say of such objects that they possess a "valence."

Hall and Lindzey (1957, p. 228) explain the concept of valence in the following manner:

> A valence is a conceptual property of a region of the psychological environment. It is the value of that

> region for a person. There are two kinds of value, positive and negative. A region of positive value is one that contains a goal object which will reduce tension when the person enters the region. For example, a region that contains food will have a positive valence for a person who is hungry. A region of negative value is one that will increase tension. For a person who is afraid of dogs any region that contains a dog will have a negative valence. Positive valences attract, negative valences repel.

Vector

Lewin (1935, p. 81) defines force or vector as follows:

> A force is defined through three properties: (1) direction, (2) strength, and (3) point of application. The first and second properties are to be represented through the mathematical concept vector. The point of application is indicated in the figures (as is the custom in physics) by the point of the arrow.

Hall and Lindzey (1957, p. 229) interpret Lewin's psychological concept of force or vector by stating:

> The conceptual properties of force are direction, strength, and point of application. These three properties are represented mathematically by a vector. The direction in which the vector points represents the direction of the force, the length of the vector represents the strength of the force, and the place where the tip of the arrow impinges upon the outer boundary of the person represents the point of application.

Interactive vs. Ipsative Measurement

Knapp (1966, p. 482) somewhat simplifies the terms interactive and ipsative measurement by stating:

> Measurement of interests via the self-report type of inventory takes either of two forms--the interactive or "free-response" variety, or the ipsative or "forced-choice" variety. There are many differences between the two forms but little empirical evidence concerning the validity of one as compared to the other . . . despite the theoretical and practical differences in the two

> forms, neither holds any substantial advantage in statistical validity.

Cattell coined the term "ipsative" in 1944. Cattell (1944, p. 51) states: "The term ipsative (Latin ipse = he, himself) is suggested as a convenient one for designating scale units relative to other measurements on the person himself . . ." In discussing "interest intensity units" Cattell (1957, p. 496) reports, "that all interest test scores should first be reduced to ipsative scores, in order to be comparable, in terms of one unequivocal assumption, from person to person."

Bauernfeind (1962, p. 210) indicates that many counselors (both high school and college) attempt to measure interests with forced-choice techniques. Popular forced choice instruments include the Kuder Preference Record, the Lee-Thorpe Occupational Interest Inventory, the Edwards Personal Preference Schedule and the Allport-Vernon Study of Values.

It is interesting to note, according to Bauernfeind (1962, p. 211):

> Forced-choice instruments provide ipsative scores only . . . Interest inventories automatically produce ipsative scores if they involve systematic pairing of choices, systematic variation of triads from which choices are made, rank-ordering of all items, or control of distributions of responses to items for each student.

Bauernfeind's (1962, pp. 212-213) study lists a number of arguments favoring forced-choice and free-response measurements. Arguments in favor of forced-choice measurements are:

> 1. The forced-choice technique operates to keep inter-correlations among interest categories at a low level, thus providing the instrument a greater potential for validity.
> 2. The forced-choice technique parallels more closely actual life situations where one cannot do all things he would like to do, but rather where he regularly elects one course of action in preference to alternatives--even fairly attractive alternatives. In this sense, forced-choice testing functions as a realistic microcosm of everyday

behavior.

3. The forced-choice technique tends to control "response set" differences in response enthusiasm between individuals and also from occasion to occasion within one individual. Additionally, the forced-choice technique is likely to be more resistant to faking than is the free-response technique.

4. The forced-choice technique usually provides higher reliabilities than the free-response technique. Kuder has shown that the forced-choice format evokes a high level of behavioral reliability in responding to the items, and the consistent evidence of high reliability for various forced-choice instruments is quite convincing.

5. The research literature indicates clearly that such instruments as the Kuder-Vocational yield useful validities in terms of discriminating among various vocational groups.

Arguments favoring the use of free-response instruments usually run as follows:

1. The forced-choice technique is frustrating to students in that it does not permit expressions of high enthusiasm for interest items that are especially appealing to them.

2. Because energy and enthusiasm undoubtedly represent basic components of human behavior, denial of energy and enthusiasm in forced-choice instruments creates artificial test scores. Granted that forced-choice scores show near-zero intercorrelations and high reliabilities, it is argued that the scores are spurious, contrived--that they fail to represent real-life behaviors. If free-response intercorrelations run moderately high, it is because human enthusiasms in real life probably show moderately high intercorrelations. Just as we expect (and find) positive correlations among achievement scores, aptitude scores and school grades, we should expect to find positive correlations among areas of interest.

3. Free-response instruments not only have a potential for validity in terms of discriminating among various occupational groups, but they also have a further potential for discriminating enthusiasms within occupational groups.

Summary

Interests may be defined in a number of ways and Super (1957) placed interests in four categories: expressed interests, manifest interests, inventoried interests and tested interests.

Interest inventories may use "forced-choice" and "free-response" techniques. There are a number of arguments in favor of both types of instruments.

METHOD

In order to further investigate interests, a field study was undertaken. In this section, the purpose of the study, the subjects, instruments used and the process of data gathering will be discussed.

Purpose

In counseling with high school students, it is apparent that many are very unrealistic in their proposed vocational goals. When vocations are discussed almost all have certain areas in which they say they have an interest but do not really know the vocation they would like to enter.

This study was undertaken to determine if any relationship existed between the interests of students as indicated by the Kuder Preference Record and the scores of these same students on the Vector Analysis of Self-Concept (VASC) as related to their final involvement in some vocation, perhaps, by necessity.

Hypothesis

It is hypothesized that the vocational area rankings obtained with the Kuder Preference Record will correlate positively with corresponding rankings obtained with the VASC.

Selection of Subjects

This study was based on 62 students in the Junior Class at Weber County High School. In the spring of 1968, students of two health

classes were administered the following two "tests:"

1. Kuder Preference Record-Vocational (1948) Form C Science Research Associates Catalog Number 7-291.

2. Vector Analysis of Self-Concept (VASC) Instrument developed by Dr. David R. Stone, Utah State University.

Students with doubtful verification scores on the Kuder, below 38 and above 44, were not included in this study. The total sample included 29 boys and 33 girls.

Instruments Used

Kuder Preference Record

The Kuder Preference Record-Vocational was developed by G. Frederick Kuder for the measurement of interests. The instrument is constructed for use with high school, college and adult groups.

Anastasi (1966, p. 536) states, "the items in the Kuder-Vocational are of the forced-choice triad type. . . the test provides 10 interest scales plus a verification scale for detecting carelessness and failure to follow directions." The administrator's manual for the Kuder lists the 10 areas of measurement and gives a description of each area. Following is the list and description of the 10 areas:

0. Outdoor: Indicates a preference for work that keeps one outside most of the time, usually dealing with animals and growing things.
1. Mechanical: Indicates a preference for work with machines and tools.
2. Computational: Indicates a preference for working with numbers.
3. Scientific: Indicates a preference for discovering new facts and solving problems.
4. Persuasive: Indicates a preference for meeting and dealing with people, and promoting projects or things to sell.

5. Artistic: Indicates a preference for doing creative work with one's hands. It is usually work that has "eye appeal" involving attractive design, color, and materials.

6. Literary: Indicates a preference for reading and writing.

7. Musical: Indicates a preference for going to concerts, playing instruments, singing, or reading about music and musicians.

8. Social Service: Indicates a preference for helping people.

9. Clerical: Indicates a preference for office work that requires precision and accuracy. (Administrator's Manual-Kuder Preference Record, Revised, July, 1960, p. 2)

Vector Analysis of Self-Concept (VASC)

The Vector Analysis of Self-Concept (VASC) was developed by Dr. David R. Stone of Utah State University and was modified by Dr. Stone and this writer for the purpose of this study. The VASC is based on Lewin's field theory.

Stone (1965, p. 1) reports, "Topological representation has found some application in sociometry, but little has been done in applying it to self-systems of personal dynamics." With this in mind it is apparent that additional research into this area is needed. As stated earlier, the VASC was modified in scoring for this study, but it is believed that the principles and the dynamics have been retained.

This particular instrument consists of two parts (see Appendix): the lower half has a five-point scale for ranking the ten vocational areas as listed on the VASC. The student is forced to rank the ten vocational areas according to his interests and likes, through favorable, mostly favorable, undecided, mostly unfavorable and unfavorable. As Marsden (1966, p. 53) reports this is in keeping with Lewin's (1935, p. 81) concept of positive valence (+), those effecting approach; and the negative (-), or those producing withdrawal or retreat.

The upper half of the VASC is a diagramatic model of circles as Marsden (1966, p. 53) explains, "for placing topological figures representing and showing the relationship among one's self-concepts." Marsden (1966, p. 53) explains the use of the VASC model by reporting:

> The subject first places an X in the center of the chart to represent himself. Then the symbol and number representing the variable as charted on the lower half of the chart are placed on the top half in terms of anticipated realistic involvement. The vector value is determined in terms of the distance a symbol is placed from the self or center of the chart.

The chart has a six point scale with the value of six being assigned to the radius nearest to "ME" or "SELF," and the value of one being assigned to the radius which is most remote from "ME." Again Marsden observes that this is in accord with Lewin's (1935) concept of vector which is defined in terms of direction, strength (or force) and point of application.

Administration

The Kuder and the VASC were administered in the Spring of 1968. The Kuder was administered to the first group and the VASC to the second group on the same day. The following day the order of presentation was reversed. The inventories were scored after both groups had completed the tasks.

The Kuder was administered according to instructions in the administrator's manual for the Kuder Preference Record.

When taking the VASC the following procedures and instructions were complied with.

The students were given a copy of the VASC and a brief explanation of what they were to do, preliminary questions were answered and then

the students were verbally given the following instructions:

1. Look at the list of occupational areas.

2. In the 10 blanks at the bottom of the page please place the areas in order of choice.

++ means that you are favorable to the occupational area.

o+ means that you are mostly favorable to the occupational area.

oo means that you are undecided about the occupational area.

o- means that you are mostly unfavorable to the occupational area.

-- means that you are unfavorable to the occupational area.

3. Notice that you are ranking your choices from 1 to 10.

4. Look at the coding system:

5. Place each of the choices, with it's number and symbol on the graph:

1 2 3 4 etc.

6. Using "ME" as the center, and avoiding the lines, place each one as you predict you will find yourself in the future.

7. For example, if you know that you will have to be doing one of the occupations you will place it close to "ME."

8. Remember, the future may not be the same as your preferred choices; predict the best you can.

9. Put what you think will be, not what you hope will be.

When the above instructions and explanations were completed, the students were allowed to complete the VASC.

Marsden (1966, pp. 54-55) explains the scoring procedure by reporting:

> A subject evaluates his self-concepts along two dimensions: valence-involving attraction towards or repulsion from, and vector-involving direction and

> strength of psychological properties in the environment. A composite valence-vector score is then obtained for each variable by multiplying the valence score by the vector score. Thus, three scores are obtained on the VASC for each self-concept or variable evaluated on this topological model . . .
>
> The rational for the valence scale being multiplied by the vector scale was to show intensity as well as kind.

Securing the Data

Data for this study were collected by this researcher. The Kuder Preference Record-Vocational was administered under standard testing conditions as outlined in the administrator'a manual. The VASC was administered according to instructions presented earlier in this paper.

Data from the answer sheets for the respective instruments were transferred to scoring sheets (see Appendix). At Utah State University the data was key-punched into ADP cards and the correlations were calculated on ADP computers at the U.S.U. Computer Center.

RESULTS

Introduction

In reviewing the literature it is apparent that the study of interests will continue to play an important role in psychological research. It is necessary to continue to evaluate interests by both old and new methods in order to be able to help young people and adults make appropriate vocational choices.

Considerable research has been involved with some of the more popular interest inventories such as the Kuder Preference Record and the Strong Vocational Interest Blank. This section will present the results of data obtained from the use of the VASC in conjunction with the Kuder Preference Record.

The vocational preference areas obtained from the Kuder Preference Record and the VASC were ranked from 1 through 10. The vocational area ranked 1 was considered the "most preferred" and the vocational area ranked 10 was considered as being the "least preferred" vocational area. Correlations of these rankings were obtained and provided the following:

1. Total VASC Rank vs. Valence Rank
2. Total VASC Rank vs. Vector Rank
3. Total VASC Rank vs. Kuder Rank
4. Valence Rank vs. Vector Rank
5. Valence Rank vs. Kuder Rank
6. Vector Rank vs. Kuder Rank.

Correlations obtained from the data are presented in Table 1.

Table 1. Correlations: VASC vs. Kuder Preference Record

Vocational area	Total rank vs. Valence rank	Total rank vs. Vector rank	Total rank vs. Kuder rank	Valence rank vs. Vector rank	Valence rank vs. Kuder rank	Vector rank vs. Kuder rank
OUTDOOR						
Females	.890	.844	.524	.630	.596	.409
Males	.933	.932	.698	.792	.671	.698
Combined	.930	.900	.559	.760	.579	.527
MECHANICAL						
Females	.911	.959	.194	.815	.249	.130
Males	.886	.895	.663	.710	.706	.530
Combined	.949	.960	.322	.872	.357	.263
COMPUTATIONAL						
Females	.905	.812	.486	.672	.579	.300
Males	.925	.772	.541	.626	.500	.459
Combined	.906	.788	.476	.629	.536	.305
SCIENTIFIC						
Females	.968	.942	.584	.877	.622	.585
Males	.832	.903	.223	.603	.314	.130
Combined	.933	.923	.426	.780	.471	.372
PERSUASIVE						
Females	.832	.838	.372	.579	.494	.253
Males	.876	.821	.157	.620	.036	.180
Combined	.851	.831	.294	.609	.325	.228

Table 1. Continued

Vocational area	Total rank vs. Valence rank	Total rank vs. Vector rank	Total rank vs. Kuder rank	Valence rank vs. Vector rank	Valence rank vs. Kuder rank	Vector rank vs. Kuder rank
ARTISTIC						
Females	.885	.333	.592	.364	.762	.245
Males	.899	.849	.560	.576	.544	.559
Combined	.891	.348	.582	.339	.666	.252
LITERARY						
Females	.869	.704	.116	.461	.216	.198
Males	.906	.920	.308	.804	.308	.218
Combined	.910	.847	.110	.704	.164	.140
MUSICAL						
Females	.850	.352	.546	.297	.485	.108
Males	.890	.878	.583	.735	.562	.522
Combined	.878	.307	.596	.257	.554	.053
SOCIAL SERVICE						
Females	.909	.815	.485	.664	.580	.255
Males	.938	.839	.466	.743	.509	.435
Combined	.938	.859	.485	.755	.543	.370
CLERICAL						
Females	.932	.826	.530	.676	.565	.450
Males	.913	.856	.049	.719	.148	.012
Combined	.943	.871	.373	.758	.425	.328

Females: N = 33
Males: N = 29
Combined: N = 62

Ranking Correlations

Following are some of the correlations listed in Table 1 for each of the six previously mentioned rankings.

1. Total VASC Rank vs. Valence Rank: for the ten vocational areas used, r's ranged from a low of .832 to a high of .968. The highest r of .968 was observed for females in the scientific area. Two r's of .832 were observed, one in the scientific area and the other in the persuasive area.

2. Total VASC Rank vs. Vector Rank: r's for the most part, remained very high for these rankings. The range is more extreme, from a low r of .307 for the combined ranking (males and females) in the musical area to a very high r of .960 for the combined ranking in the mechanical area.

3. Total VASC Rank vs. Kuder Rank: this appeared to be a group of r's mostly in the moderate range; however, the range extended from a very low r of .049 for males in the clerical group, to a high r of .698 for males in the outdoor group. The r's for the females extended from a very low r of .116 in the literary group to a moderate r of .592 in the artistic group.

4. Valence Rank vs. Vector Rank: it is interesting to note that correlations of this ranking were higher, in general, than on the ranking correlations of the "total VASC vs. Kuder." The range of r's for males extended from a moderate r of .576 in artistic to a high r of .804 in literary. For females the range extended from a low r of .297 in musical to a very high r of .877 in scientific.

5. Valence Rank vs. Kuder Rank: again, most r's were moderate. The range for males extended from a very low r of .036 to a high r of .706.

These r's were in the persuasive and mechanical groups, respectively. Correlations for females ranged from a low r of .216 in literary to a high r of .762 in artistic. The range for combined r's went from an r of .164 in literary to a high r of .666 in artistic.

6. Vector Rank vs. Kuder Rank: of the derived correlations in this study, the correlations of these two rankings appear to be lowest. The lowest r of .012 is for males in the clerical group and extends to a high r of .698 in outdoor. For females the lowest r is .108 in musical and the high is .585 in scientific. Range of r's for combined ranking is .053 in musical, to .527 for outdoor.

Summary

Over-all correlations appear to be highest for the Total VASC rank vs. valence rank and lowest over-all correlations for the vector rank vs. Kuder rank. Total VASC rank vs. Kuder rank produced over-all correlations in the moderate range.

All correlations were positive; thus, it may be concluded that the findings confirm the hypothesis. However, correlations were not uniformly high. Notably, the Vector-Kuder r's were lower and showed a wider range. In other words, when students estimated their "true" prospective involvement, the correlations were considerably reduced over "stated" interests.

DISCUSSION

VASC Combines Elements of Forced-choice and Free-response

The Kuder Preference Record is a forced-choice instrument. Bauernfeind (1962, p. 210) states, "Forced-choice instruments in popular use today include the Kuder Preference Record. . . ." From numerous activities, in the Kuder inventory relating to activities of vocations, individuals are forced to designate which of the activities they like "least" and which of the activities they like "most." Out of three activities the individual is forced to select two. The VASC is an instrument that combines elements of both the forced-choice technique and to some degree, the free-response technique.

Complete free-response could conceivably consist of asking an individual to express his interests and then let him do so, either verbally or in writing. The VASC forces the individual to confine his considerations to certain interests in ten vocational areas. The individual has to place these areas within certain graphically structured limits. The individual is free to respond or is involved in the free-response technique when he is free to consider how he will place these vocations in relation to the interaction of the vocational areas and his perception of involvement.

Consideration of Variations in Correlations

The correlations presented in Table 1 suggest a number of interesting comparisons. For example, compare the very low correlation of .049 for males in the clerical area with the somewhat higher or moderate r of females in the same area. Does this suggest that the males find fewer activities on the Kuder Preference Record, in the area of clerical vocations, interesting to them and perceiving little involvement for them on the VASC, make selections which combine to produce low correlations? This same discrepancy is observed in the vector rank vs. the Kuder rank correlations. The males are avoiding the clerical area in future involvement, but have apparently marked items on the Kuder which reflect clerical interest.

When considering interest in the mechanical areas in which males appear to be more involved, we find that the males have a high r (.663) in the total VASC rank vs. the Kuder rank and the females have a very low r (.194) in this same area. Again this variation is expressed in the vector vs. Kuder correlations.

It is extremely interesting to note that in the correlations of the valence rank vs. the Kuder rank that most correlations are moderate or lower. This may suggest that if individuals were given a list of vocations and asked to rank them that their ranking would be somewhat unreliable. The Kuder would seem to give a more stable estimate of present interests.

This writer suggests that the high correlations in the total VASC rank vs. valence rank and the total VASC rank vs. vector rank may be due to individuals ranking their areas of interest, and then placing

them on the VASC close to themselves because they perceive that they are going to be involved in the vocational area that they ranked as most favorable. There seems little, if anything, to be gained from multiplying vector x valence.

Suggestions for Further Research

In the use and design of the VASC for future research in the area of interests, it is believed that the following two suggestions will help improve the effectiveness of the instrument.

1. In the lower section of the VASC (see Appendix) there are five boxes and the individual is requested to rank the area of vocations that he would prefer under such terms as, favorable, mostly favorable, undecided, mostly unfavorable and unfavorable. It is suggested that these headings be changed to read: most desired, desired, undecided, undesired and least desired. Since the individual is forced to choose, it is believed that the latter headings would help reduce the negative feelings produced by being required to place certain vocational areas in an unfavorable block. Some individuals may have no serious objections concerning any of the vocational areas that they rank.

2. In the upper section of the VASC, where values are assigned to each of the circles, it is suggested that dotted circles be placed within each of the circles. By use of the dotted circles within the circles it is believed that the individual will be able to more precisely ascertain the amount of involvement that he wants to assign to each of the vocations and their symbols. The dotted circles will also help to be more precise in the scoring for the vector ranking.

SUMMARY AND CONCLUSIONS

The purpose of this study was two-fold: (1) to review the literature relevant to interest as a factor in vocational choice and, (2) to report the results of a field study involving the use of the Kuder Preference Record-Vocational and the VASC.

A review of the literature indicates that interest has a vital role in the selection of an appropriate and satisfactory vocation.

It is apparent that as the complexities of modern life increase, more caution and wisdom will have to be exercised in selecting a vocation. In our industrial society more emphasis is being placed on education and training and before substantial expenditures are made in time and money, the individual should be quite certain of his vocational goal.

Many individuals have a definite understanding of their interests and are aware of their vocational goals; others are not quite so certain and need more help with their problems of vocational choice. Both groups need a continuing assessment of their interests and the role that interest has in the selecting of an appropriate and satisfactory vocation.

Interests may be classified into a number of categories. Super (1957) categorized interests as: expressed interests, manifest interests, inventoried interests and tested interests. In research, inventoried interests have received the greatest emphasis.

A field study was undertaken to determine what relationship existed between the ranking of vocational interest areas as measured by the Kuder Preference Record and the ranking of vocational interest areas as measured by the VASC (see Appendix).

The Kuder Preference Record is a forced-choice instrument with which the individual has to decide, out of a number of activities, which activities he likes least and the activities he likes most. The VASC is based on Lewin's Field Theory and involves principles of vector and valence for topological representation. The VASC utilizes elements of both free-response and forced-choice techniques.

The Kuder Preference Record and the VASC were administered to students of two 11th grade health classes at Weber High School in Ogden, Utah. The two classes consisted of 33 females and 29 males.

Principal findings of the field study were as follows:

1. The over-all correlations ranged from a very low r of .012 to a very high r of .968.

2. Valence estimates lowered r's for males in clerical and females in mechanical interest areas.

3. Lowest correlations were found with the vector rank vs. Kuder rank.

4. Moderate correlations were obtained with the VASC valence rank vs. Kuder rank.

The conclusions of this study are:

1. Correlations between the VASC and the Kuder are positive, indicating that self estimates tend to vary in the same direction with Kuder measured interests. This indicates that ranking of interests may be accomplished by the use of topological representation, but with some loss as compared to measured Kuder interests. The results indicate a moderate relationship only, between ranking of interests by self-estimates and ranking of inventoried interests.

2. Expectations do influence estimates of future involvement to the extent of lowering correlations with Kuder measured interests in some areas. This is seen in the lower r's for vector as compared to valence correlations.

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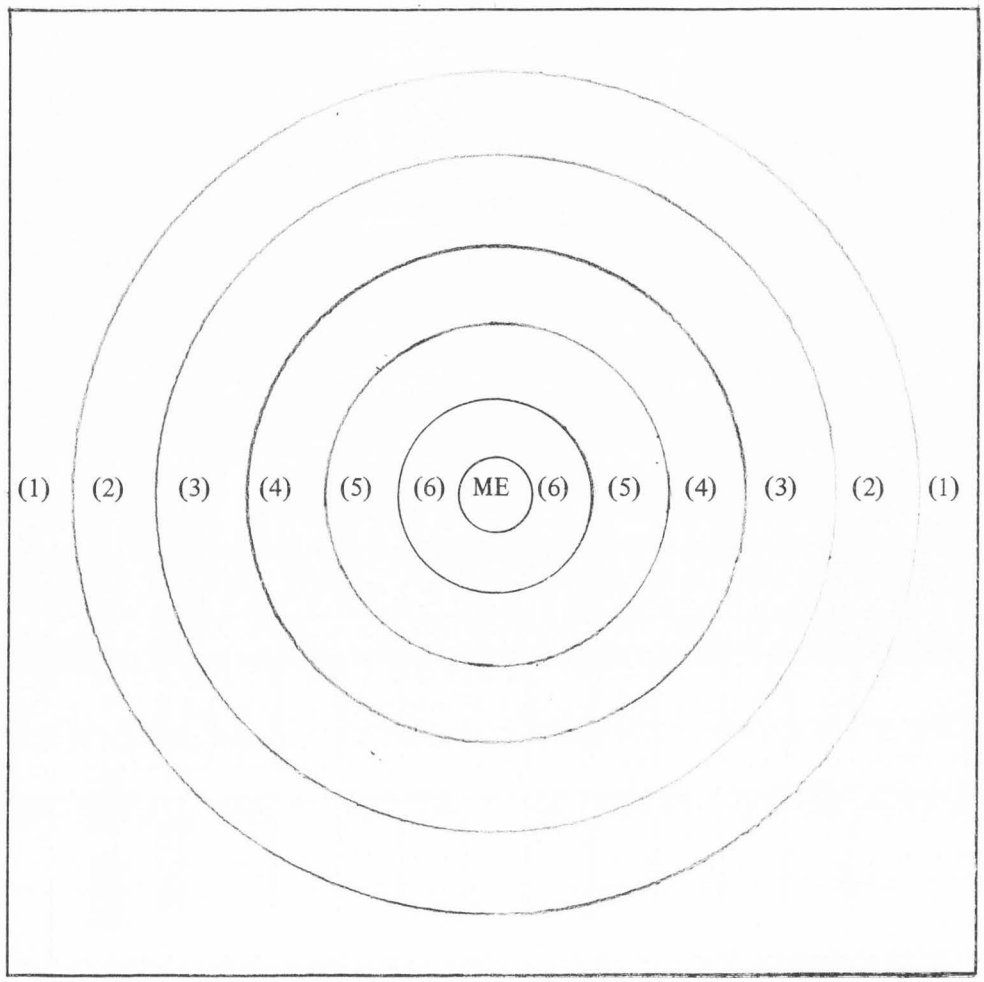
APPENDIX

NAME _____ SEX _____ AGE _____



○	✳	▭	▦	△
FAVORABLE	MOSTLY FAVORABLE	UNDECIDED	MOSTLY UNFAVORABLE	UNFAVORABLE
+ +	+ ○	○	○ −	− −
1.	3.	5.	7.	9.
2.	4.	6.	8.	10.

NAME_____ AGE_____ SEX_____

	VOCATIONAL AREA		SCORE DATA VALENCE	SCORE DATA VECTOR	SCORE DATA TOTAL V x V	RANK DATA (1) TOTAL RANK VxV	RANK DATA (2) VALENCE RANK	RANK DATA (3) VECTOR RANK	RANK DATA (4) KUDER RANK
1.	OUTDOOR	(O)							
2.	MECHANICAL	(M)							
3.	COMPUTATIONAL	(C)							
4.	SCIENTIFIC	(Sc)							
5.	PERSUASIVE	(P)							
6.	ARTISTIC	(A)							
7.	LITERARY	(L)							
8.	MUSICAL	(Mu)							
9.	SOCIAL SERVICE	(So)							
10.	CLERICAL	(Cl)							

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