THE CHOICE OF EXTRA CURRICULAR ACTIVITIES OF SECONDARY SCHOOL STUDENTS AS A FUNCTION OF PSYCHOLOGICAL DIFFERENTIATION

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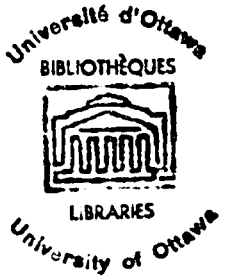
Thesis submitted to the School of Graduate Studies of the University of Ottawa in partial fulfillment of the requirements for the degree of Masters of Arts (Education)



Ottawa, Ontario, 1978

CURRICULUM STUDIORUM

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ABSTRACT

Rosenberg has demonstrated that the high school student is influenced by several factors in choosing an extra-curricular activity. Witkin, on the other hand, has shown that an individual's characteristic mode of perceiving the environment, that is his degree of psychological differentiation, can be reliably identified. A specific link between Rosenberg's notion of perceived choice of extra-curricular involvement and Witkin's psychological differentiation has yet to be established. Rosenberg identified two distinct types of perceived involvements, Inclusive and Exclusive. Witkin and others have developed measuring instruments to determine a subject's degree of psychological differentiation.

The purpose of the present study is to test the hitherto undetermined connection between the student's degree of psychological differentiation and his perceived choice of extra-curricular activities as measured on the continuum of Inclusivity-Exclusivity. In addition, a second purpose of the study is to develop a testing instrument to measure Inclusivity-Exclusivity.

In the current research, scores on the degree of psychological differentiation were measured by Jackson's version of Witkin's Embedded-Figures Test, the Hidden Figures Test-V (HFT-V). The constructed Inclusivity-Exclusivity

Questionnaire (I-E) was used to measure the perceived choice of activities.

The research sample included one hundred and fifty-one students from grades nine to thirteen.

The hypothesis that field-dependent subjects, as determined by the HFT-V, exhibit significantly higher scores on the I-E than field-independent subjects was supported.

The study concludes with the following suggestions for further research:

1. The Questionnaire could be further validated for the use of future research of student's perceived choice of activities by investigating its consistency as a measuring instrument across cultures, socio-economic groupings and with different races.

2. It would be of interest to do an exploratory investigation to determine some of the other factors involved in the choice of an extra-curricular activity.

3. A number of correlational studies of extra-curricular involvement with academic success, leadership, self-esteem, school completion, and career choice is suggested.

ACKNOWLEDGEMENTS

This thesis was prepared under the supervision of Professor Pierre Turgeon, Ph.D., of the Faculty of Education, University of Ottawa.

The writer appreciated the help of several professors of Ottawa University who served as assistants, judges and sources of encouragement during the research investigation. The writer also expresses appreciation to the administration and students of General Panet High School, Petawawa, Ontario, for their co-operation in the collection of data for this study.

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INTRODUCTION

The choice of extra-curricular activities by students has been a subject of concern to educators. This is not only due to the considerable amount of time spent by administrators and teachers planning and supervising extra-curricular activities but also because of the role of extra-curricular activities in the teaching-learning process. A review of the literature cites several authors who consider the practical aspects of forming clubs, raising funds for activities and developing leadership qualities but there is very little documentation explaining the possible implicit philosophy or psychology involved in students' choices of activities.

Rosenberg (1972) conducted an extensive study on the influence of several social factors which contribute to the development of the personality of the individual; one factor which he investigated was Club Membership in the High Schools. He has articulated two types of extra-curricular involvement, which he has termed Inclusive and Exclusive, and has established a relationship between students' self-esteem and observed type of activity involvement.

Witkin (1962) has examined individual differences in the characteristic ways which people perceive both the world and themselves and has evolved the personality construct termed psychological differentiation. As a result of many studies, a number of diverse personality traits have been found to be related to psychological differentiation.

The purpose of the present study is, first, to investigate the possible relationship of an individual's choice of an extra-curricular activity to his psychological differentiation and, second, to develop a testing instrument to operationalize Rosenberg's Inclusivity-Exclusivity membership involvement.

This study consists of three chapters and a number of appendices.

Chapter one contains a review of the literature concerning extra-curricular activities followed by a critical examination of Witkin's theory of psychological differentiation. The exploration of the possible relationship of Rosenberg's types of extra-curricular memberships to Witkin's psychological differentiation construct leads to the establishment of the theoretical rationale for the prediction that the student's perceived choice of an extra-curricular activity is a function of the subject's degree of psychological differentiation.

Chapter two is concerned with the Experimental Design used in the present study; the selection of the measuring instruments and the experimental procedure are detailed. A description of the sample is followed by a description of the Questionnaire developed to measure the individual's perception of his activity involvement. Justification for the selection of the instrument to measure psychological differentiation is given. In the final portion, the plan for the statistical analysis of data is presented.

In Chapter three a recapitulation of the Problem and Hypothesis is followed by the results of the data analysis and discussion of the findings. Suggestions for further research and the theoretical as well as the practical implications for extra-curricular activities in schools conclude the chapter.

Summarized in the final portion of the text are the particulars of the present study and the major conclusions which have been drawn.

CHAPTER 1

REVIEW OF THE LITERATURE

This research was designed to examine a possible relationship between psychological differentiation, as defined by Witkin, and the choice of extra-curricular activities by secondary school students. There is general acceptance by educators of the contention that extra-curricular activities are a vital and healthy part of the total school program (Frederick, 1965). However, there is little documentation which examines factors involved in determining specific choices of extra-curricular activities made by students. The present research investigates the possible link between the individual's degree of psychological differentiation, as put forward by Witkin and his colleagues, and making a choice of an extra-curricular activity by the individual, as seen by Rosenberg.

A review of the literature suggests a possible link between the choice of an extra-curricular activity by secondary school students and psychological differentiation and consequently a hypothesis is made to establish the existence of such a link.

1. Choice of Extra-Curricular Activities by Secondary School Students

Most secondary schools offer a wide variety of club and sport activities. Although there is considerable literature reporting the mechanics or, "how to" aspects of extra-curricular activities (Gruber & Beatty, 1954; Frederick,1965), little has been written concerning the "why" of their being.

Rosenberg (1972) in his research investigated the importance of club membership as one of the influencing factors on the self-esteem of the adolescent. His research supports a close correlation between club

membership and self-esteem. He states, "Interpersonal success in the high school is of course, both a cause and a consequence of self-esteem, probably involving a reinforcing and spiraling effect (Rosenberg, 1972, 191)". His research revealed a wide discrepancy in extra-curricular involvement. The determining factor appeared to be the self-esteem of the individual. For example, sixty-one percent of young people with high self-esteem were involved in one or more activities in high school while seventy percent of the students with the lowest self-esteem were involved in none (Rosenberg, 1972, 193).

Rosenberg found that there are primarily three social environments within which participation may occur and can be distinguished. These are: informal voluntary groupings, such as a small exclusive circle of people, gangs and friendship groups; formal voluntary groupings such as teams, clubs and other organizations; formal involuntary groupings such as academic classes (Rosenberg, 1972, 192). His study examined the second of these three, the formal voluntary groups and some of the factors involved in determining the choice of an extra-curricular activity by an individual. For the purpose of this study Rosenberg's definitions and characteristics of formal voluntary groups are being used.

According to Rosenberg (1972), extra-curricular activities may be divided into two types, Inclusive and Exclusive. The Inclusive activity is one which attempts to attract to its ranks the largest membership possible. Success by the members is measured by the degree to which the activity succeeds in attracting a large number of members (Rosenberg, 1972, 192). The Inclusive activity tends to be very social in nature with many planned or unplanned get-togethers and outings. The objective of this activity is primarily social and the members tend to belong to the same friendship groups. In this group

the individual member's contribution tends to be integrated in the collective effort (Rosenberg, 1972, 195). The members of an Inclusive activity tend to be more comfortable with a rigid set of guidelines governing their activities and leadership of the groups is apt to be directive (Rosenberg,1972,195).

The members of an Exclusive activity endeavour to keep its membership small in number. The membership is open to only those who have a specific skill or who wish to perfect one. There is little social involvement beyond the casual and the individual contribution of the members is unique and not submerged into the total group effort. The leadership of an Exclusive activity is apt to be non-directive as members prefer only a minimum amount of adult supervision.

The degree to which any one club or activity is Inclusive or Exclusive will depend on the tradition of that activity in the individual school, the stated purpose of the activity, the type of leadership given to that activity in any one year and the planned program of that activity. No one club will always be entirely Inclusive or Exclusive for it will vary from school to school and year to year depending on the aforementioned factors. It also varies with the individual's perception of his involvement. That is, one student may join an activity because of the specific skill involved, another will join the same activity because of the social aspect and the group participation. Therefore, for the purpose of this research it is the individual's perception of his involvement that is being investigated.

There is a lack of documented data available on this topic of extra-curricular involvement. Based on Rosenberg's research, seven broad characteristics were observed as being descriptive of Inclusivity and Exclusivity (Rosenberg, 1972, 191-195). These characteristics are concerned with the

size of membership, requirements for admission to the activity, the emphasis on social interaction among the members, membership by friendship groups, the type of desired leadership in the activity membership and the types of contributions encouraged from the membership. The procedure for developing the testing instrument based on these characteristics is outlined in the next chapter.

This chapter has been concerned with Rosenberg's notion of extra-curricular involvement and the definitions for Inclusive and Exclusive activity membership. Since it is proposed in the present study to investigate the relationship between the individual's perceived choice of Inclusive or Exclusive activity membership and psychological differentiation, the discussion will now be directed to Witkin's concept of Psychological Differentiation.

2. Witkin's Concept of Psychological Differentiation

Investigation in the last twenty-five years on cognitive styles have resulted in concepts and methods being applied to research on educational problems. Perhaps the most extensively studied cognitive style is that of field-dependence-independence dimension.

Man usually knows which way is up on the basis of the cues received from the visual environment around him and from sensations from within his body. Ordinarily, the standard derived from the visual field and the standard derived from the body coincide in direction and he has an accurate sense of the location of the true upright.

The earliest works of Witkin and his colleagues dealt with establishing the locus of spatial orientation (Asch & Witkin, 1948, 324-337, 455-477, 603-614, 762-783). The question under consideration was whether environmental

cues in the surrounding perceptual field or postural factors were responsible for a subject's ability to perceive the upright in space. The results indicated that there were consistent and stable differences in a subject's ability to orient himself in space. They also observed in the course of their experiments that an individual's perceptual style "is linked to a broad and varied array of personal characteristics involving a great many areas of psychological functioning (Witkin,Dyk,Faterson,Goodenough & Karp, 1962, 1)."

The way each person orients himself in space is reflected in his performance on any of the perceptual tests such as the Rod and Frame Test(RFT)(Witkin et al.,1962,36-37), the Tilting-room Tilting-chair Test(TRTC)(Witkin et al., 1962,37-39), and the Embedded Figures Test(EFT)(Witkin et al.,1962,39-40).

The Rod and Frame Test (RFT):The instrument for this test consists of a luminous square frame which surrounds a movable luminous rod, pivoted at the same centre as the frame. Both rod and frame can be tilted clockwise or counterclockwise, together or separately. The chair on which the subject sits is movable and the test is carried out in a completely darkened room.

Three series of eight trials each make up the standard administration of the test. At the beginning of the test, the subject is seated on the movable chair and is asked to close his eyes. The rod and frame remain in tilted positions. On opening his eyes, his task is to instruct the examiner to adjust the rod to the true upright. In the first series the subject and the frame are tilted to the same side as the rod, and at other times to the opposite side. In the second series, the subject's chair and the frame are tilted to opposite sides. In the third and final series, the subject sits in an upright position, while the frame and rod are tilted sometimes to the same side, at other times to opposite directions.

In order to perceive the rod as upright, some subjects tip it far towards the angle of tilt of the frame "thus determining its position mainly in relation to the visual field that immediately surrounds it (Witkin et al., 1962, 1 - 2)". Other subjects are able to bring the rod close to the true upright, perceiving it independently of the surrounding field and determining whether it is upright or not with reference to the tilt of the chair. Those subjects who perceive the rod independently of the surrounding field are said to be field-independent while those who rely on the visual field are field-dependent.

The Tilting-room Tilting-chair Test (TRTC): The TRTC tests are used to evaluate a person's perception of the position of his body and of the surrounding field in relation to the upright. A box-shaped room is suspended on a ball-bearing pivot in such a way that the room can be tilted left or right. inside the room, there is a chair for the subject. The chair can be tilted to the right or to the left independently of the room. The subject's task is to adjust himself to the true upright or perceive the room as upright. If he tilts himself far in the direction of the tilt of the room in order to perceive himself as upright, he is considered to make his judgement in term of his apparent relationship to the field; but, if he does not tilt himself in order to make his judgement, he is then considered to be more sensitive to his body influence.

The TRTC is administered in two parts. The room adjustment test (RAT) consists of eight trials. In the first four attempts, the room and the chair are tilted to opposite sides, and to the same side in the next four. The subject on each trial instructs the examiner to tilt the room until the subject is satisfied that the room is perceived as upright.

In the body adjustment test (BAT), six trials are made. Three of the trials are made with room and chair tilted to the same side, and the other three with room and chair tilted to opposite sides. The subject's task is to direct the experimenter to adjust the tilted chair to a position the subject perceives to be upright. The subject's score is the amount of tilt of body or chair, in degrees, when the subject reports that he perceives upright.

Witkin showed with the use of these two space orientation tests that individuals tend to be self-consistent in their perception over a long period of time. To be successful in the RFT and the TRTC the individual must be able to deal with a configuration analytically. The question of whether the distinctive features of a person's space orientation characterize him in a general way, in non-orientation situations, was examined. To determine whether this was a pervasive characteristic of a person's perception, the embedded-figures test was devised. It does not incorporate orientation toward the upright or body position in any way. It was found that perception of body position involves a "body factor" in addition to the "keeping-item-separate-from-field" factor that the space-orientation tests have in common with the embedded-figures test. This is a distinction of the proprioceptive versus the perceptive dimensions of psychological differentiation.

The Embedded Figures Test (EFT): This instrument tests the ability of the subject to find a particular simple figure within a larger complex figure. A simple figure is first shown to the subject. It is then removed and he must locate it in a complex design of which the simple figure is a part. While this situation does not involve space orientation, as the first

two, the objective of the task is essentially the same. Here, too, the subject is presented with an item -- a simple figure rather than the rod or the body -- which is contained in a complex, organized field. The Embedded Figures Test measures the extent to which the surrounding visual framework dominates perception of an item within it. The complex design is drawn in such a way that the simple figure seems no longer to be within it. For some subjects, the simple figure is easily traced out, while others take more time to find it. The subject's score is the time taken to locate the simple figure in the complex design.

The two orientation tests (the RFT and the TRTC) present the subject with all the main aspects of orientation towards the upright, and his score depends on the way in which he establishes the direction of an object within a visual field, as well as the direction of the field as a whole to the position of his body. They are designed to reveal the extent to which the subject is making these determinations, adheres to the axes of the visual field or resists the influence of the field through reference to the sensations of his body. Evidence gathered from the administration of these two tasks shows that subjects tend to be self-consistent in performance across the two tasks. Hence, those who perform well are said to be field-independent, while those who perform poorly are referred to as being field-dependent.

The Embedded Figures Test (EFT) operates on the same principle as the RFT and the TRTC, because in each case, the ability to separate a part from a whole, or a simple figure from a complex one is involved.

The performance of individuals in these perceptual tasks has become the basis for classifying them as relatively field-dependent or field-

independent, the former being those individuals who are less successful in the perceptual tasks, and the latter being those who perform well. Successful subjects are, in addition, described as analytical because they are able to perceive an item as discrete from the organized whole of which it is part. In other words, they have the ability to single out individual parts from the whole.

On the other hand, subjects who experience the item as fused with the whole, and are unable to isolate an item from its background, as the rod from the surrounding frame, are said to be field-dependent, and their perception is said to be global. They perceive the item and its surrounding fields as one fused whole.

The tests devised by Witkin for measuring the independent variable, psychological differentiation, are all individually administered and are therefore uneconomical for use on a large scale, although it may be sometimes necessary for such specific populations as young children. Subsequently, group versions have been developed for use with large samples. Jackson, Messick and Myers (1964) devised the Hidden Figures Test - V, as a group administered instrument. It correlates substantially with Witkin's EFT. Jackson et al., (1964, 187) have found a correlation of 0.84 ($p < 0.01$) between Form HFT-V and Witkin's original EFT. In addition, Stelmack (1970, 47) reports a test-retest reliability coefficient of 0.67 ($p < 0.01$) for the same instrument. The scores from the EFT and HFT are negatively and significantly correlated which reflects structural similarity yet also indicated that they are not equivalent or identical (Spotts and Mackler, 1967).

Witkin had not been able to explain his findings at a theoretical level. The concept of psychological differentiation did not originate with Witkin

and his colleagues. The differentiation hypothesis evolved from Werner's orthogenic principle. As stated by Werner, differentiation represents increased structuralization and specialization of functions and systems. In his orthogenic principle, Werner states that during development, "organization is less differentiated, more homogeneous at earlier levels than at more advanced stages (Werner, 1948, 56). The three important elements in Werner's framework are development, differentiation and integration or hierarchization. Werner contends that the development of differentiation proceeds from a relatively diffuse or global or undifferentiated state toward more differentiation and hierarchy integration. The less sophisticated modes of functioning are gradually built upon and taken over by more sophisticated modes. It is a total maturational process.

An appropriate extension of Werner's principle might be that an individual who is poorly differentiated would be expected to experience difficulty in perceiving an object or stimulus out of context of its surroundings or to have a clearly articulated concept of himself.

Witkin refers to differentiation in an all-inclusive sense as the complexity of a system's structure. A highly differentiated system has specialization as one of its characteristics, whereas at the other end of the continuum the less differentiated system tends to lump things together in an elementary fashion. As stated by Witkin, "A less differentiated system is in a relatively homogeneous structural state; a more differentiated system in a relatively heterogeneous state (Witkin et al., 1962, 9)".

Since these earliest studies multitudes of research experiments have been completed dealing with psychological differentiation. From these

a fairly comprehensive set of characterizations have been found for field-dependent and field-independent subjects. Witkin maintains that those who are field-independent experience their surroundings analytically so that objects are perceived to be discrete from their background (Witkin et al., 1962, 35). Therefore, field-independent subjects consistently perform more effectively on embedded tasks than field-dependent subjects. Also field-dependent people tend to have difficulty in picture completion and in the analytical section of intelligence tests whereas the field-independent tend to score higher on the analytical portion of intelligence tests (Witkin, 1962, 70).

Field-dependent subjects have been found to be very observant, as a whole, to things around them and have no problem at recognizing faces that they have seen only briefly (Witkin et al., 1962, 3). Studies have indicated that field-dependent subjects tend to seek guidance as to how to do a task whereas field-independent subjects define their individual roles and proceed with greater confidence. Field-independent people have been found to have a more stable self-view whereas people who are field-dependent have been found to be more sensitive to the evaluations that others make of them (Ruden & Stagner, 1958, 213-225).

The nature of controls and defenses of field-dependent subjects tend to be the use of massive repression whereas field-independent subjects use more complex forms of defenses such as isolation or intellectualization (Witkin et al., 1962, 157).

Other characteristics borne out by research are as follows. The field-dependent subject lacks a well developed sense of his own identity and separateness from others. He fails to internalize a stable set of standards with which to interpret and react to the world. He has difficulty maintaining his own direction in the face of contradictory expressions from other people and looks to others for support and reassurance. He is highly vulnerable to external influence particularly from authoritative figures. The field-independent person is guided by his own standards, values and needs and is aware of his own motives and feelings. He may appear to be somewhat detached and "over-controlled" (Spotts and Mackler, 1967, 142; Witkin, Moore, Goodenough and Cox, 1977).

The field-dependent subject is said to be conventional, submissive to authority, blandly unaware of his inner feeling life. He fears, denies and has poor control over such impulses as sex and aggression. The field-independent person strives for independence and positions of leadership. He copes actively with his environment and is aware of his inner life and impulse. The field-dependent person is superior over field-independent in attending to and remembering verbal messages that are social in content and he tends to rely on external social standards. He has highly developed social skills and shows a strong preference for domains that feature interpersonal relationships and in which day to day work requires involvement with people (Eagle, Breitman and Goldberger,

1969, 903-910; Witkin, Moore, Goodenough and Cox, 1977, 1-64; Witkin and Goodenough, 1977, 661-189).

Witkin and his colleagues carried out many investigations to consider the developmental aspects of the field-dependent-independent concept. It was found that there are clear age-related changes in field-dependence over the life span. Developmental curves for the EFT, RFT, and BAT, covering the eight to twenty-four year period, show a marked, continuous increase in field-independence between eight and fifteen years, although in this period the rate of change slows down with increasing age (Witkin, Goodenough and Karp, 1967).

Another consistent finding has to do with sex differences. Witkin found that males tend to be relatively more field-independent than females in perceptual situations (Witkin et al., 1962, 214). The explanation for these differences as expressed by Witkin suggests that the reason is the result of biological differences in males and females (Witkin et al., 1962, 220). However, other work shows that the difference due to sex factors is an inherited one (Harlage, 1970, 610). Others ascribe the sex difference in field-dependence entirely to cultural norms. A study by Sherman suggests that sex differences in perceptual style could be due to sex typing from early age (Sherman, 1967, 290-299). In his earlier writings Witkin et al., (1954)

states that the analyses of sex difference suggests the conclusion that in societies where women assume a dependent role, they will have more field-dependent perceptual characteristics than the men but in societies where women are allowed independence, sex differences will disappear (Witkin et al., 1954, 153-171). Also, Fennema (1974) claimed that in the area of field-dependence, when sex differences were found, such differences were often of relatively insignificant magnitude. In a later study by Witkin and his colleagues, they found that in western societies there are small but persistent sex differences in field-dependence-independence beginning in adolescence, however the difference in means between sexes is quite small compared to the range of scores within each sex; in other words, the distributions of the two sexes show considerable overlap (Witkin, Moore, Goodenough and Cox, 1977, 7).

Criticisms

There has been some criticisms of Witkin's work (Gruen, 1957, 73-93; Gardner, 1963, 198). However these criticisms have been empirically examined and successfully refuted. A major criticism expressed by Zeigler (1963, 135) questions whether many of the empirical relationships found between Witkin's perceptual measures and certain other tests are not simply due to the common relationship between all the

scores and "general intelligence", as defined by standard intelligence tests. He implied that if the general intelligence variable was taken out, then the magnitude of certain significant relationships reported would remain relatively undisturbed, certain others would be reduced and still others would be eliminated (Zeigler, 1963, 133-135).

A number of research projects were completed which examined the connection between general intelligence variables and psychological differentiation and the results indicate that the criticism is not valid. For example, it was found that the correlations between total intelligence scores and measures of psychological differentiation ranged from 0.20 to 0.57 (Dubois and Cohen, 1970, 411-416; Spotts and Mackler, 1967, 249-268; McCarrey, Dayhaw and Chagnon, 1971, 141-149). Another set of investigations found that correlations between scores on verbal measures of intelligence and measures of psychological differentiation ranged from 0.06 to 0.47 (Elliott, 1961, 30; Bieri, Bradburn and Galinski, 1958, 1-12; Spotts and Mackler, 1967, 240. Correlations between scores on quantitative measures of intelligence and measures of psychological differentiation ranged from 0.09 to 0.51 (Elliott, 1961, 30; Bieri et al., 1958, 11; Spotts and Mackler, 1967, 245; Dubois and Cohen, 1967, 414). Correlations between total intelligence and measures of psychological differentiation are generally

lower for females than for males (Corah, 1965, 300-309; Jackson, 1957, 458).

Other authors have defended Witkin from his critics, for example, McCarrey points out that,

> Despite the possible earlier methodological weakness and possible over-extension of the breadth of the psychological differentiation construct, its value as a heuristic model is paid tribute by the sheer abundance of data it articulates and synthesizes. (McCarrey, 1969, 32).

Werner, who wrote the foreword to Witkin's Psychological Differentiation text, praises the work as being in the "new spirit" of developmental theory. Werner comments that Witkin's differentiation hypothesis:

> ...becomes capable of channeling the inquiry toward significant particular questions, as well as recruiting powerful and relevant experimental methods; moreover, in spite of its generality, the hypothesis is sufficiently incisive to be validated and tested against the findings without undue ambiguity (Witkin et al., 1962, vi).

Witkin and his colleagues have assembled considerable data to support their approach to the study of psychological functioning. On the bases of their studies the dimension of field-dependence-independence is assumed to reflect the extent of psychological differentiation.

The question now to be investigated is as follows: Is the student's choice of extra-curricular activities a function of psychological differentiation?

3. The Choice of Extra-Curricular Activities and Psychological Differentiation

The term "sense of separate identity" is one which is

used to describe an analytic or field-independent person. The term applies to the person's awareness of his own needs, feelings and attitudes and his identification of these as distinct from the needs, feelings and attitudes of others. An individual with a well-developed sense of separate identity is capable of functioning with relatively little need for guidance and support from others. He maintains more firmly his own direction in the face of contradicting attitudes, judgments and values of others and has a relatively stable view of himself in varying social contexts since these contexts are less needed for self-definition. In contrast to the field-dependent person, the field-independent individual exhibits a lack of interest in people. He tends to experience others in terms of deeper attributes which reflects greater awareness and ability to maintain the aloofness necessary for objective evaluation (Witkin et al., 1962).

Research indicates that the field-independent person functions with relatively little need for guidance and support from others and is less dependent on authority figures. He strives for independence, special skills and competencies in them. The field-dependent person requires external social standards and is more sensitive to the evaluations that others have of him; therefore, he tends to seek direction in his activities. He has highly developed social skills and prefers domains that feature inter-personal relationships and active involvement with people.

From these research findings a possible link is implied to Rosenberg's Inclusive and Exclusive Activity Memberships. Rosenberg states that the Exclusive-activity membership tends to appeal to students who prefer leadership which is non-directive and who prefer to plan their own program with limited direction from the leader. It appeals to the individual regardless of whether his friends join or not and any social interaction is of a casual nature. The Exclusive activity is designed for those who have a special skill or those who wish to perfect one and the objective is skill oriented. The Inclusive-activity membership tends to appeal to students who prefer leadership that is more directive and authoritative, and where there is a great deal of social activity among the members.

Witkin states that the field-independent person may not be particularly interested in being active although he may have an active approach to the world. "Active" is defined in a broad, psychological sense to describe a quality of interest in being active, in striving, in being assertive. It may be manifested not only in behavior of a physical kind but in social and intellectual pursuits as well. The field-dependent person who is active may put his activity into the service of winning and maintaining dependent relations with others, which a limited developed sense of separate identity is apt to make necessary (Witkin, 1962, 178).

The choice of an extra-curricular activity by the individual is determined by many factors. The preference for

a skill-oriented activity rather than a socially-oriented activity is a function of the personality of the individual as well as of the accumulated modifying external influences placed upon him. There have been little documented data available which investigates this topic. Field-independence-dependence is one dimension that can be investigated as a possible determining factor in the individual's choice of an activity. On examination it would seem that the characteristics of the field-dependent and field-independent persons can be linked to the characteristics of Inclusive and Exclusive activity memberships that the individual considers when making a choice of an activity. Therefore, it is hypothesized that the choice of an extra-curricular activity as perceived by the individual, is a function of his psychological differentiation.

Specific approaches to testing that hypothesis are indicated in the next chapter. Outlined in Chapter Two are the procedures for the collection of data to test the hypothesis, the description of the subjects used to generate the data and the reasons which dictated the choice of the measuring instruments.

CHAPTER II

EXPERIMENTAL DESIGN

The purpose of this study was first to examine the choice of extra-curricular activities by the secondary school student as a function of psychological differentiation and second, to develop a testing instrument to measure Inclusivity-Exclusivity as perceived by the individual. The theoretical rationale underlying the current research was presented in Chapter One. This chapter details the selection of the measuring instruments and the experimental procedure. A description of the sample is followed by a delineation of the Questionnaire used to measure the individual's perception of his activity involvement. Considered in the final portion is the plan for the statistical analysis of the data.

1. The Subjects

One hundred and fifty one students from the General Panet High School in Petawawa were selected as subjects. For ease of school administration, mathematics classes at all ability levels and from grades nine to thirteen were used as a means of obtaining a random selection across the spectra of ability and grade level represented in that school population. The subjects ranged in age from fifteen to nineteen years. The mean age was 16.6 years with a standard deviation of age of 1.16 years.

2. The Measuring Instruments

Since there was no testing instrument available for the

dependent variable, a priority for this research was to develop an instrument for measuring Inclusivity-Exclusivity of extra-curricular involvement as perceived by the individual. Since there has been little research dealing with the factors that influence extra-curricular activities, discussions were held with educators involved in the planning and supervising of extra-curricular activities. In these discussions, Rosenberg's characteristics of extra-curricular activities served as the basis for formulating a list of all such characteristics for extra-curricular activities in the High School setting. Questions were then prepared and these were classified as Inclusive or Exclusive according to the definitions. This was basic to the development of the testing instrument to measure the student's perception of his extra-curricular involvement.

On the basis of Rosenberg's definitions seven broad characteristics were accepted. They are as follows:

Inclusive Activities -

1. attempt to attract a large number of members
2. individual's skills are not of prime importance for admission, the skill will be taught if necessary
3. tends to be very social with a lot of interacting members - a number of outings or social events could be planned each year
4. members tend to belong to the same friendship groups
5. leadership tends to be very directive - leadership may come from either the teacher-advisor or a committee of members
6. the action of the group is carried out as a group effort - no one has to work independently
7. the objective sought is of a social nature

Exclusive Activities -

1. the number of members is not of priority
2. admission is restrictive - individuals must have a specific skill or interest in learning a skill
3. social interaction is minimal and of a casual nature
4. members join for individual skills or interests independent of friendships
5. leadership tends to be non-directive - it may come from the teacher-advisor or a committee of members
6. individuals tend to do their own things - emphasis is on the individual's particular skill or contribution
7. the objective is either an intrinsic or extrinsic reward resulting from improving in a skill

The set of questions was prepared within the confines of each characteristic (Appendix 1) which would determine the subject's choice of membership in extra-curricular activities. Approximately five questions for each characteristic from the Inclusivity-Exclusivity continuum were developed. Five judges, consisting of four professors from Ottawa University and the Head of a Guidance Department at one of the Carleton Board High Schools, interested in the investigation and willing to assist, were chosen to examine the entire set of questions and determine whether each question would reliably differentiate between Inclusive characteristics or Exclusive characteristics.

Each judge was given the complete set of forty-six questions typed on individual cards and placed in random order. Each judge was also given the defintion of an Inclusive Activity and an Exclusive Activity. (Appendix 2)

The completed cards were evaluated for consensus of opinion. If there was disagreement on a particular question, which would indicate possible lack of validity, note was taken for consideration when the format for the final Questionnaire was to be drawn up.

The forty-six questions were then arranged in a random order in a Questionnaire and a pilot study completed. (Appendix 3)

For purposes of marking, a Likert-type scale was used (Oppenheim, 1966). Likert scales tend to perform very well when it comes to a reliable, rough ordering of people with regard to a particular attitude. Oppenheim (1966) states that sets of questions are more reliable than single opinion items mainly because the vagueness of question wording will affect only particular items and thereby eliminate bias, whereas the underlying attitude will be common to all the items in a set or scale. The reliability of a scale can be assessed in the usual way by a split-half correlation coefficient without having to ask the same question twice. He also states that a Likert scale provides construct validity for measuring something that is beneath the surface, and giving it a more precise formulation by indicating which sub-variables it pulls together and how it must be relatd to other attitudinal or perceptual variables and to different aspects of behavior.

Apart from the relative ease of construction of the scales, they have two other advantages. Firstly,they provide more precise information about the respondent's degree of agreement or disagreement (respondents usually prefer this to a simple agree-disagree score) and secondly, it becomes possible to include items whose manifest content is not obviously related to the attitude in question; therefore, subtler and deeper manifestations of an attitude may be explored (Oppenheim, 1966).

Consistent with this approach, each question was answered by circling any one of the five words, ALWAYS, SOMETIMES, SELDOM, NEVER and UNDECIDED. Each question was graded on the continuum from 1 - 5. Questions numbered 15, 16, 19, 20, 21, 25, 33, 37, 40, 42, 44, 45 and 46 were worded in such a way that they tested for Exclusive membership and were therefore graded ALWAYS +1, SOMETIMES +2, SELDOM +4, NEVER +5, and UNDECIDED +3. All others were worded to test for Inclusive membership and were graded ALWAYS +5, SOMETIMES +4, SELDOM +2, NEVER +1 and UNDECIDED +3. The possible range of scores were from forty-six to two hundred and thirty on the continuum with the lower scores measuring Exclusivity and the higher scores measuring Inclusivity.

A pilot-study of the Questionnaire was completed in a Carleton Board of Education High School in Nepean Township. Care was taken that these subjects would be representative of the population used for the actual collection of data and that no bias was introduced. Both schools, one used for the pilot-study and the other used for the collection of data, are located in relatively urban areas -- a subdivision area of Ottawa and the armed forces base of Petawawa. Both schools served a number of armed service families. The subjects for the pilot-study consisted of twenty-two students from grades nine to thirteen, involved in extra-curricular activities.

On completion of the Questionnaire each item was scored and a total score was obtained. An item analysis was computed to find correlation coefficients and mean scores for each item. (Appendix 4) This is known as the internal-consistency method of item analysis (Davis, 1974)

The data was analyzed and the coefficient alpha value (Thorndike, 1971) was determined. The coefficient alpha gives a measure of the summed vari-

ability of the individual questions in relation to the total variability of the raw scores. This showed a test reliability of 0.82 and a split-half reliability of 0.74 for the Questionnaire respectively. (Appendix 5)

During the process of validation for the measuring instrument, the following four procedures were used for the detection of questions which were to be included in the final Questionnaire to be used in the main investigation:

1. The mean scores for the forty-six questions ranged from 1.73 to 4.73. Questions which generated mean scores less than 2.5 and greater than 3.5 were deleted. It was felt that these values were a reflection of the extremes and to that extent were not within norms. Questions which gave scores between 2.5 and 3.5 inclusive were consequently incorporated into the final Questionnaire.

2. The correlation coefficients computed ranged in value from a negative correlation coefficient of -0.48 to a positive coefficient of 0.75. Consequently correlation coefficents , of each question with the total test scores, equal to or greater than 0.20 were considered as valid. The procedure is consistent with Franzblau (1958, 81).

3. A count for similiarity of responses to any one question was carried out. Scores thus obtained were arranged in a matrix with the number of the questions arranged in columns and the subjects' responses in rows. Thus, a cell contained a subject's score on a particular question. A frequency count of the scores of a particular question was taken. If in any column the same score appeared fifteen of the possible twenty-two times, it was considered for deletion for it was felt that the question did not discriminate well between subjects.

4. The items determined by the Judges to be ambigious were also considered

as non-valid and therefore were deleted.

As a result of this process ten questions were deleted as being not valid. Each question had been indicated as not being valid by one or more of the above four criteria. In evaluating particular questions for purposes of inclusion within the Questionnaire, maximum weightage was given to the correlation coefficient values (Oppenheim, 1966). The following Table presents the correlation coefficient for each of the ten questions deleted and also indicated when any one of those questions was also rejected by one or more of the other criteria.

TABLE I

CRITERIA FOR REJECTION OF VARIOUS QUESTIONS IN PRELIMINARY QUESTIONNAIRE

Correlation coefficient of each question with the total test scores	Question Number	Other Criteria used as bases of deletion
.0291	2	Mean score 2.0455
.2314	3	Rejected by Judges and by Visual Count
.4826	6	Mean score 3.5909. Rejected by Judges
.3689	9	Mean score 2.1818. Rejected by Visual Count
.0019	28	
.0827	30	
.0699	34	Rejected by Judges
.0943	36	Rejected by Judges
.3083	39	
.0594	43	Mean score 1.9091. Rejected by Judges

The final format of the Questionnaire used for the collection of data for the dependent variable, Inclusive-Exclusive Activity involvement, therefore, consisted of thirty-six questions. (Appendix 6) The scores ranged from thirty-six to one hundred and eighty on a continuum with the lower scores measuring Exclusivity and the higher scores measuring Inclusivity.

The HFT-V Test was chosen as the instrument to measure psychological differentiation for this research, consistent with the findings discussed in Chapter I. Form V used black and white achromatic design with a memory format composed of sixteen embedded figures in a booklet with complex designs presented on one side of a page and simple figure on the obverse side. (Appendix 7) The administration of the test is similiar to Witkin's EFT. The scores indicated the number of the figures correctly identified with a ten minute test period. The range of scores is from zero to sixteen. High scores were indicative of field-independence and low scores of field-dependence. The total time for administration of the list including directions and performance was fifteen minutes.

3. The Procedure for Collection of Data

The students were tested in groups of twenty to fifty. Both measuring instruments, the I-E and the HFT-V that were used to measure the dependent and independent variables were completed in one sitting. One hundred and fifty-one subjects completed both tests. Copies of the directions for administering these instruments are found in Appendices 7 and 8 respectively.

4. The Plan for the Statistical Analysis

The hypothesis being tested is that the choice of extra-curricular

activities as perceived by the individual is a function of psychological differentiation. To test this hypothesis, therefore, it was predicted that field-dependent subjects as determined by the HFT-V will exhibit significantly higher scores on the I-E than field-independent subjects.

A "t-test" will be computed to determine whether the two extreme groups used in the experiment are significantly different with respect to their Inclusivity-Exclusivity. The hypothesis tested involves only two normally distributed populations, namely field-independent and field-dependent. Since these two populations are large, it was reasonable to assume equality of variances and normality of distributions. These characteristics of the populations dictated the choice of the "t-test" as the valid and meaningful test to evaluate differences.

In order to further establish the reliability of the Questionnaire a coefficient alpha will be computed from the main data using the methodology described previously. (Appendix 5) The Questionnaire will be subjected to a factor analysis and the results of a critical investigation presented of pertinent data available which may relate to future use of the Questionnaire.

The results generated from the Questionnaire and the HFT-V are presented in the next chapter.

CHAPTER III

PRESENTATION OF RESULTS

This chapter contains a review of the problem and a statement of the hypothesis to be tested. The results of the data analysis are also presented and discussed. A number of suggestions for further research are given and the application of the results from this study to extra-curricular activities in the high schools are also considered.

1. Review of the Problem and Hypothesis

The present investigation resulted from a study of the available literature on students' choice of extra-curricular activities and Witkin's work on psychological differentiation. A review of the literature revealed possible links between Rosenberg's research on extra-curricular activities and the work of Witkin et al., on psychological differentiation. It was therefore postulated that the choice of extra-curricular activities as perceived by the individual is a function of the individual's psychological differentiation. Specifically, it was hypothesized that field-dependent subjects as determined by the HFT-V exhibit significantly higher scores on the I-E Questionnaire than field-independent subjects.

2. Results of Testing and Discussion of the Findings

The test scores measuring psychological differentiation for the total sample were analyzed. The mean score was 4.89 with a standard deviation of 4.27.

To test the hypothesis the extreme groups were identified on the field-independence-dependence continuum. The forty-five subjects who scored seven or higher on the HFT-V were designated as field-independent and the forty-

two who scored zero or one were designated as field-dependent. The mean score for the field-independent group was 10.53 and the mean score for the field-dependent group was 0.60.

A "t-test" was computed to examine the significant difference between the field-dependent and field-independent groups on the Inclusivity-Exclusivity Questionnaire. The results of this are shown in Table II.

TABLE II

MEANS, STANDARD DEVIATIONS AND "t-TEST" VALUES FOR FIELD-DEPENDENT AND FIELD-INDEPENDENT SUBJECTS ON THE I-E QUESTIONNAIRE

	Field-Dependent Subjects n 42	Field-Independent Subjects n 45
Mean	110.36	102.87
Standard Deviation	11.33	12.01
Calculated Value of T	2.99	
Number of Degrees of Freedom	85	
Critical Value of $0.95^{t}85$	1.66	

Examination of the calculated value of T, ($p < 0.05$) indicates that there is a significant difference between field-independent and field-dependent groups on I-E. Moreover since the mean score on the I-E for the field-dependent is greater than the mean score on the I-E for the field-independent, the directional research hypothesis is supported. It is therefore concluded that, as hypothesized, field-dependent subjects, as determined by the HFT-V, do exhibit significantly higher scores on the I-E

than field-independent subjects.

To further establish the reliability of the measuring instrument for the dependent variable, a coefficient alpha was computed on the Questionnaire and a value of 0.64 established, ($p < 0.05$). (Appendix 5)

The Questionnaire on Inclusivity-Exclusivity was answered by a total of one hundred and fifty-one students. The results were compiled and grouped according to field-dependent and field-independent responses. There were forty-two students who scored zero or one on the HFT-V and were categorized as field-dependent while forty-five other students with scores from seven to sixteen were categorized as field-independent. The results of the remaining sixty-four students who scored from two to six on the HFT-V were not included in the analysis because the magnitudes of the scores did not permit them to be grouped into either category.

The Questionnaire consisted of thirty-six questions and the students had any one of five possible scores from one to five for each question. Based on their responses to these thirty-six questions the students within each of the dependency groupings mentioned earlier, were classified into each of these five scores. A tabular presentation of these classified scores is given here in Table III.

TABLE III

SUBJECT'S RESPONSES FROM 1 - 5 ON THE INCLUSIVITY-EXCLUSIVITY QUESTIONNAIRE

	The number of times the answers from 1-5 were given				
	1	2	3	4	5
Field-Dependent HFT-V 0 or 1 n 42	193	476 (669)	123	472	248 (720)
Field-Independent HFT-V 7 to 16 n 45	223	608 (831)	103	531	153 (684)

In accordance with the directional hypothesis, field-dependent subjects as determined by the HFT-V gave significantly higher scores on the I-E Questionnaire than field-independent subjects. It can be observed that the majority of students within the field-independence category scored 1 and 2 (Exclusivity).

After analysing each question, it was found that the following questions clearly distinguished between Inclusivity and Exclusivity: 1, 2, 3, 4, 5, 7, 8, 9, 10, 18 and 25. Questions that did not distinguish between Inclusivity and Exclusivity were: 11, 12, 15, 16, 17, 20, 21, 27, 28, 29, 31, 32, 34 and 35. Those that were consistent, that is, they always measure either as Inclusive or as Exclusive were as follows: Exclusive - 24, 30 and 36; Inclusive - 6, 13, 14, 19, 22, 23, 26 and 33.

It should be noted that of those that were found not to distinguish between Inclusivity and Exclusivity, the following were worded so as to

test only for Exclusivity: 11, 12, 15, 16, 17, 21, 28, 29, 31, 33, 34, 35 and 36. The fact that so many of those questions that did not distinguish between Inclusivity and Exclusivity were worded in reverse to the others would indicate that perhaps the subjects had difficulty interpreting the questions in that format.

There were seven characteristics which describe Inclusivity and Exclusivity. Each characteristic was represented by a number of questions in the questionnaire. The following table will show the questions that were testing for each characteristic. Those question numbers circled distinguished between Inclusivity-Exclusivity. Those questions with a line over them measured consistently Inclusive. Those questions with a line under them measured consistently Exclusive.

TABLE IV

DESCRIPTIVE ANALYSIS OF THE INCLUSIVITY-EXCLUSIVITY QUESTIONNAIRE

Characteristic	Question Numbers on the I-E Questionnaire								
1	(1)	(4)	[11]	(18)	24	26	[29]	[33]	[35]
2	12	[19]	[30]						
3	6	13	20	(25)	27	36			
4	[(2)]	[(7)]	14	21	31				
5	[(3)]	[(8)]	15	22	28				
6	[(9)]	[16]	23	32	34				
7	[(5)]	[(10)]	17						

The results of a factor analysis indicated that there was a natural clustering of some of the questions. However there is inconsistency between those questions structured for a specific characteristic and the groupings produced by the factor analysis. Although there were some questions in common between the characteristic questions and the factor analysis grouping, there was considerable discrepancy which suggests an overlap from one characteristic to another in measuring Inclusivity and Exclusivity. The questions in Table IV enclosed in a box are those which are in common both to the factor analysis grouping and that of the characteristics.

Although the questions did not measure distinctively throughout, each characteristic did have one or more questions which appeared to serve the intent. Characteristic one has questions 1, 4 and 18 which distinguish between the two choices of Inclusivity or Exclusivity and have in common with the factor analysis grouping questions 11, 29, 33 and 35. Characteristic two has questions 19 and 30 in common with the factor analysis grouping. Characteristic three has question 25 which distinguished between Inclusivity-Exclusivity. In Characteristic four, questions 2 and 7 distinguished between Inclusivity-Exclusivity and were in common with the factor analysis grouping. In Characteristic five, questions 3 and 8 distinguished between Inclusivity-Exclusivity and were in common with the factor analysis grouping. Characteristic six has question 9 which distinguished between Inclusivity-Exclusivity and 9 and 16 which were in common with the factor analysis grouping. In Characteristic seven, questions 5 and 10 distinguished between Inclusivity-exclusivity and were in common with the factor analysis grouping. From this assessment it is reasonable

to assume that there were a sufficient number of questions that were valid for testing Inclusivity-Exclusivity.

It has been established the student's choice of an extra-curricular activity is a function of his degree of psychological differentiation. The mean scores of the field-dependent students were found to be significantly greater than the mean scores of field-independent students on the I-E Questionnaire.

3. Suggestions for Further Research

Having supported the hypothesis that the student's choice of extra-curricular activity is a function of his degree of psychological differentiation and that field-dependent subjects, as determined by the HFT-V, will exhibit significantly higher scores on the I-E than field-independent subjects, a number of possible studies now are suggested.

The Questionnaire developed for this investigation was tested on a random sampling of students from predominantly white, middle-class areas. The Questionnaire could be further validated for the use of future research dealing with student's choice of activities by investigating its consistency as a measuring instrument using both rural and urban subjects, minority groups and different racial groups.

Another facet of investigation could deal with the many variables which influence a student's choice of an extra-curricular activity. It would be of interest to identify some of these variables, and determine the extent of their

influence on the student's choice. For example a mathematical formula approach such as the following could be studied:

$$IEP = F (P, SA, S, A, IQ)$$

Where IEP = Inclusive-Exclusive Activity Preference, F = factor, P - psychological differentiation, SA = self-actualization, S = sex, A = age and IQ = intelligence quotient.

Another investigational aspect could consider the students who do not beocme involved in extra-curricular activities and determine the factors which influence their lack of involvement. Recognized and outlined in literature is the importance of extra-curricular activities in a healthy school program and various methods to be used to encourage student participation are discussed. It would therefore be of interest to do a series of correlational studies of extra-curricular involvement with academic success, leadership, self-esteem, school completion and career choice.

4. Extended Application of Results

It has been determined that the student's choice of an Inclusive or Exclusive activity is a function of the student's degree of psychological differentiation. Having established the characteristics of the field-independent and field-dependent individual, it is now possible to apply this information both in theory and in practice to the development of activities that will appeal to the two groups. For example, the educator who is able to recognize field-dependent

characteristics in a student will be better able to advise that student in the choice of an activity that has characteristics of inclusivity and which will probably appeal to that student. On the other hand, the student displaying field-independent characteristics can be encouraged to consider participation in skill oriented activities which may be of greater interest to him.

If the field dependence of an individual having difficulty interacting socially can be identified, the educator can then assist that student in his selection of a number of clubs which have characteristics that could meet his needs.

The understanding of the results from this study can serve as a guide to determine the priority of the activities in the extra-curricular program. A balance between the number of Inclusive and Exclusive activities planned would be the ideal. Such aspects as type of leadership - directive and non-directive; objectives - skill or social; type of membership - large or small, should be given consideration so that the maximum number of students can become involved.

The teacher-advisor of any extra-curricular program should be aware of the theoretical implications of field dependence and its influence on the activity choice of the individual. This knowledge would enable group leaders to better understand their membership. With some appreciation of these links between extra-curricular involvement and the

degree of psychological differentiation, the advisor can assist the group to plan a program that will meet the needs of its members. For example, projects should be planned that will be done as a group effort and others planned for individual participation, projects to encourage social interaction and others for skill involvement, and projects that require direct leadership and others that minimize the amount of adult supervision.

Considered in this chapter are the analysis of the data and the discussion of the results with the suggestions for future research. The report will now conclude with the Summary and Conclusions of the present study.

SUMMARY AND CONCLUSIONS

A review of the literature showed that extra-curricular involvement could be divided into two distinct types, Inclusive and Exclusive. Witkin et al. have demonstrated that a person's characteristic mode of perceiving can be identified and measured on a continuum of field dependence. Many personality characteristics appear to be correlated with an individual's score on the testing instruments such as the HFT-V.

The purpose of the present study was to examine a possible link between the student's degree of psychological differentiation and his choice of extra-curricular activities as measured on a continuum of Inclusivity-Exclusivity. It was hypothesized that the choice of extra-curricular activities was a function of psychological differentiation. In addition, a second purpose of the study was to develop an instrument to measure Inclusivity-Exclusivity. Specifically, the purpose of the current study was to test the following hypothesis: Field-dependent subjects, as determined by the HFT-V, exhibit significantly higher scores on the I-E than field-independent subjects.

A Questionnaire was developed by the writer and a pilot study completed. Analysis of the data resulted in a coefficient alpha value of 0.82 for the Questionnaire.

The data was collected with the co-operation of one hundred and fifty-one high school students from the ages of fifteen to nineteen years. The group had a mean age of 16.6 years with a standard deviation of 1.16 years. The dependent variable, namely extra-curricular activity involvement, was measured on the Inclusive-Exclusive Questionnaire (I-E) and the independent

variable, namely psychological differentiation, was measured by the Hidden Figures Test-V (HFT-V).

The results of applying a "t-test" indicated a significant difference and the directional hypothesis was supported ($p < 0.05$). That is, field-dependent subjects as determined by the HFT-V did exhibit significantly higher scores on the I-E than field-independent subjects.

Several suggestions for further research are given. Such suggestions involve extended application of the Questionnaire and other factors which influence a choice of an activity.

It is suggested that these findings are applicable to several aspects of extra-curricular activities. If the educator is aware of the theoretical bases of psychological differentiation and its influence on the individual's choice of extra-curricular activity, he will be better able to plan an extra-curricular program that will appeal to the maximum number of students.

Knowing the characteristics of Inclusive and Exclusive activities, the educator may direct individuals who display field-dependent characteristics to the inclusive activity which may best meet his needs and the field-independent individual to the exclusive activities. Such aspects as type of leadership, activity objectives, size of membership and type of contribution should be given consideration when planning an activity to ensure that a wide variety of activities are available and the maximum number of students can become involved.

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APPENDICES

APPENDIX 1

Questionnaire Items
Classified by Characteristics

The items used in the Questionnaire, classified by the characteristics they tested are listed here. Indication of Inclusivity or Exclusivity are also given.

Characteristic 1: Inclusive activities attempt to attract a large number of members. The number of members is not of priority in the Exclusive activity.

When I am joining an extra-curricular activity at school I choose one

...in which there is a large membership (Inclusive)

...that attracts a number of students (Inclusive)

...that has a small membership (Exclusive)

...with one of the largest memberships in the school (Inclusive)

...that is known for its number of members (Inclusive)

...that a number of students have joined (Inclusive)

...with a limited number of members (Exclusive)

...in which I am one of only a few members (Exclusive)

When I am joining an extra-curricular activity at school the number in the club is not important to me (Exclusive)

Characteristic 2: In Inclusive activities individual skills are not of prime importance for admission. The skill will be taught if necessary. In Exclusive activities admission is restricted to those who have a specific skill or interest in perfecting a skill.

When I am joining an extra-curricular activity at school I choose one

...that will teach me a specific skill or help me to improve one that I already have (Exclusive)

...that does not require a specific skill for membership (Inclusive)

...that does not require any special skills for admission (Inclusive)

Characteristic 3: Inclusive activities tend to be very social with a lot of interacting socially among the members. A number of outings or social events could be planned each year. In the Exclusive activity social interaction is minimal and of a casual nature.

When I am joining an extra-curricular activity at school I choose one

...that has many outings and parties (Inclusive)

...that is known for being a lot of fun (Inclusive)

...in which the members like having a good time together (Inclusive)

...in which the members get together often for social events (Inclusive)

...in which social involvements are not important (Exclusive)

When I am joining an extra-curricular activity at school having a good time is not the main reason for joining (Exclusive)

Characteristic 4: Inclusive activity members tend to belong to the same friendship groups whereas Exclusive activity members join for individual skills or interests independent of friendships.

When I am joining an extra-curricular activity at school I choose one

...in which I know well many of the members (Inclusive)

...in which many of my friends are members (Inclusive)

...in which several of the members are my friends (Inclusive)

...in which the skill involved may mean I join without my friends (Exclusive)

When I am joining an extra-curricular activity at school whether my friends join or not does not influence my decision to join (Exclusive)

Characteristic 5: Inclusive activity leadership tends to be very direct. Leadership may come from the teacher-advisor or a committee of members. Exclusive activity leadership tends to be non-directive. It

may come from the teacher-advisor or a committee of members.

When I am joining an extra-curricular activity at school I choose one

...in which there is a lot of leadership (Inclusive)

...in which there is a minimal amount of leadership provided (Exclusive)

...in which we are given assistance on what to do and how to do it (Inclusive)

...in which we have a strong program committee (Inclusive)

...in which each individual is responsible for his own program (Exclusive)

Characteristic 6: Inclusive activities tend to carry out action as a group effort. No one has to work independently. In the Exclusive activity individuals tend to do their own thing. Emphasis is on the individual's particular skill or contribution.

When I am joining an Extra-curricular activity at school I choose one

...in which I will work as a member of a team on projects (Inclusive)

...in which most of the work is done as a group effort (Inclusive)

When I am joining an extra-curricular activity at school

...I want to get a chance to "do my own thing" on a project (Exclusive)

...I don't want to be expected to do something different from the other club members (Inclusive)

...I want to be able to work alone on a project if I wish (Exclusive)

Characteristic 7: The Inclusive Activity objective sought is of a social nature. The Exclusive Activity objective is either an intrinsic reward or extrinsic reward resulting from improving in a skill.

When I am joining an extra-curricular activity at school I choose one

...in which the objective is to meet new people and make friends (Inclusive)

...in which people seek to enjoy themselves (Inclusive)

When I am joining an extra-curricular activity at school I like to feel that I will reach a goal I have set for myself (Exclusive)

APPENDIX 2

Definitions of Inclusivity and Exclusivity and Instructions to the Judges

INSTRUCTION TO THE JUDGES AND THE DEFINITIONS FOR THEIR USE

The following definitions are descriptions of two types of club memberships:

Inclusive Activity: The Inclusive activity is one which attempts to attract to it's ranks the largest number of members possible. These activities count themselves successful in the degree to which they succeed in attracting a large number of members. Individual members' contribution does not tend to be unique but tends to be integrated in the collective effort. The Inclusive activity tends to be very social in nature with many planned and unplanned get-togethers and outing. The objective of the activity is primarily social and the members tend to belong to the same friendship groups. Members tend to be more comfortable with a rigid exterior structure, therefore the leadership of the group is apt to be directive.

Exclusive Activity: The Exclusive activity seeks to keep its numbers small. Membership is open to those who have a specific skill or to those who wish to perfect a skill. The individual's contribution is uniquely his own. There is little social interaction beyond the casual. The individual plans his own program within the loose exterior structure of the club. Leadership is apt to be non-directive and members prefer only a minimum amount of structure.

. . . . . .

The set of cards you have been given contain questions which will be used to measure the individual's perception of his club membership, whether it is INCLUSIVE or EXCLUSIVE. From the descriptive definitions given above please access each question separately and in the bottom right hand corner

indicate the type of membership this question will measure.

Use I for Inclusive

E for Exclusive

U for Undecided (should you feel that it does not measure one or the other distinctly)

APPENDIX 3

QUESTIONNAIRE ON INCLUSIVITY-EXCLUSIVITY USED FOR THE PILOT STUDY

QUESTIONNAIRE

MEMBERSHIP IN EXTRA-CURRICULAR ACTIVITIES

1. When I am joining an extra-curricular activity at school I choose one in which there is a large membership.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

2. When I am joining an extra-curricular activity at school I choose one that is based on a specific skill that I can learn or improve.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

3. When I am joining an extra-curricular activity at school I choose one that is fun to belong to.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

4. When I am joining an extra-curricular activity at school I choose one in which I know well many of the members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

5. When I am joining an extra-curricular activity at school I choose one in which I will work as a member of a team on projects

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

6. When I am joining an extra-curricular activity at school I choose one in which the members plan the program with little advice from adults.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

7. When I am joining an extra-curricular activity at school I choose one that attracts a number of students.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

8. When I am joining an extra-curricular activity at school I choose one in which the objective is to meet new people and make friends.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

9. When I am joining an extra-curricular activity at school I choose one that will provide an opportunity for me to demonstrate a skill I have.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

10. When I am joining an extra-curricular activity at school I choose one that has many outings and parties.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

11. When I am joining an extra-curricular activity at school I choose one in which many of my friends are members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

12. When I am joining an extra-curricular activity at school I choose one in which most of the work is done as a group effort.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

13. When I am joining an extra-curricular activity at school I choose one in which there is a lot of leadership.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

14. When I am joining an extra-curricular activity at school I choose one in which people seek to enjoy themselves.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

15. When I am joining an extra-curricular activity at school I choose one that has a small membership.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

16. When I am joining an extra-curricular activity at school I choose one that will teach me a specific skill or help me to improve one that I already have.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

17. When I am joining an extra-curricular activity at school I choose one that is known for being a lot of fun.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

18. When I am joining an extra-curricular activity at school I choose one in which several of the members are my friends.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

19. When I am joining an extra-curricular activity at school I want to get a chance to "do my own thing" on a project.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

20. When I am joining an extra-curricular activity at school I choose one in which there is a minimal amount of leadership provided.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

21. When I am joining an extra-curricular activity at school I like to feel that I will reach a goal I have set for myself.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

22. When I am joining an extra-curricualr activity at school I choose one with one of the largest memberships in the school.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

23. When I am joining an extra-curricular activity at school I choose one that does not require a specific skill for membership.

ALWAYS SOMESTIMES SELDOM NEVER UNDECIDED

24. When I am joining an extra-curricular activity at school I choose one in which the members like having a good time together.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

25. When I am joining an extra-curricular activity at school I choose one in which the skill involved may mean I join without my friends.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

26. When I am joining an extra-curricular activity at school I don't want to be expected to do something different from the other club members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

27. When I am joining an extra-curricular activity at school I choose one in which we are given assistance on what to do and how to do it.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

28. When I am joining an extra-curricular activity at school I choose one in which the objective is to improve a skill.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

29. When I am joining an extra-curricular activity at school I choose one that is known for its number of members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

30. When I am joining an extra-curricular activity at school I choose one that makes no special skill requirement of me.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

31. When I am joining an extra-curricular activity at school I choose one in which the members get together often for social events.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

32. When I am joining an extra-curricular activity at school I choose one that a number of students have joined.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

33. When I am joining an extra-curricular activity at school I choose one in which social involvements are not important.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

34. When I am joining an extra-curricular activity at school knowing the members is not the most important reason for membership.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

35. When I am joining an extra-curricular activity at school I want to be able to work alone on a project if I wish.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

36. When I am joining an extra-curricular activity at school I choose one in which approval or recognition from the leader is often given.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

37. When I am joining an extra-curricular activity at school I choose one with a limited number of members.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

38. When I am joining an extra--curricular activity at school I choose one that does not require any special skills for admission.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

39. When I am joining an extra-curricular activity at school I choose one that bases its activities on other than social events.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

40. When I am joining an extra-curricular activity at school whether my friends join or not does not influence my decision to join.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

41. When I am joining an extra-curricular activity at school I prefer one in which we have a strong program committee.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

42. When I am joining an extra-curricular activity at school I choose one in which I am one of only a few members.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

43. When I am joining an extra-curricular activity at school I consider the objectives of the club more important than the social events.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

44. When I am joining an extra-curricular activity at school I prefer one in which each individual is responsible for his own program.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

45. When I am joining an extra-curricular activity at school the number in the club is not important to me.
ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

46. When I am joining an extra-curricular activity at school having a good time is not the main reason for joining.

APPENDIX 4

PILOT STUDY STATISTICS (MEANS AND CORRELATION COEFFICIENTS FOR EACH ITEM OF THE I-E QUESTIONNAIRE)

Variable	Mean	Correlation coefficient of each question with the total test scores
1	2.0455	0.6192
2	2.0455	0.0291
3	4.5455	0.2314
4	3.2273	0.3835
5	3.2727	0.5240
6	3.5909	-0.4826
7	2.4545	0.6051
8	3.4545	0.4459
9	2.1818	-0.3689
10	2.2727	0.5312
11	3.0000	0.5106
12	4.0000	0.5158
13	2.8636	0.3359
14	4.7273	0.4592
15	3.3636	0.1796
16	2.0000	0.4323
17	3.3636	0.4524
18	3.2273	0.6859
19	2.3636	0.0677
20	3.2727	-0.0785
21	2.5455	-0.1632
22	1.7273	0.5057
23	3.0909	0.2818
24	4.6364	0.4620
25	2.5909	0.4792
26	3.1364	-0.1802
27	3.2727	0.2081
28	2.5455	-0.0019
29	2.0000	0.2774
30	3.1818	0.0827
31	2.9091	0.7473
32	2.2273	0.3737
33	2.8636	0.4909
34	2.9091	0.0699
35	2.6818	0.2414
36	3.1818	0.0943
37	3.4545	-0.3095
38	3.3636	0.3397
39	2.5455	-0.3083
40	2.3636	0.2111
41	3.1364	0.4185
42	3.5909	0.0561
43	1.9091	0.0594
44	3.0455	0.3124
45	2.6364	0.3058
46	3.5909	0.3828

APPENDIX 5

COEFFICIENT ALFA

$$\text{COEFFICIENT ALFA} = \frac{K}{K-1}\left(1 - \frac{\Sigma\sigma_i^2}{\sigma_t^2}\right)$$

Where K = number of items

σ_i^2 = variance of each item

σ_t^2 = total test variance

APPENDIX 6

INCLUSIVITY-EXCLUSIVITY QUESTIONNAIRE AS USED IN THE MAIN STUDY

Questionnaire
Membership in Extra-Curricular Activities

1. When I am joining an extra-curricular activity at school I choose one in which there is a large membership.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

2. When I am joining an extra-curricular activity at school I choose one in which I know well many of the members.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

3. When I am joining an extra-curricular activity at school I choose one in which I will work as a member of a team on projects.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

4. When I am joining an extra-curricular activity at school I choose one that attracts a number of students.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

5. When I am joining an extra-curricular activity at school I choose one in which the objective is to meet new people and make friends.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

6. When I am joining an extra-curricular activity at school I choose one that has many outings and parties.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

7. When I am joining an extra-curricular activity at school I choose one in which many of my friends are members.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

8. When I am joining an extra-curricular activity at school I choose one in which most of the work is done as a group effort.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

9. When I am joining an extra-curricular activity at school I choose one in which there is a lot of leadership.

   ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

10. When I am joining an extra-curricular activity at school I choose one in which people seek to enjoy themselves.

    ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

11. When I am joining an extra-curricular activity at school I choose one that has a small membership.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

12. When I am joining an extra-curricular activity at school I choose one that will teach me a specific skill or help me to improve one that I already have.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

13. When I am joining an extra-curricular activity at school I choose one that is known for being a lot of fun.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

14. When I am joining an extra-curricular activity at school I choose one in which several of the members are my friends.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

15. When I am joining an extra-curricular activity at school I want to get a chance to "do my own thing" on a project.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

16. When I am joining an extra-curricular activity at school I choose one in which there is a minimal amount of leadership provided.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

17. When I ma joining an extra-curricular activity at school I like to feel that I will reach a goal I have set for myself.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

18. When I am joining an extra-curricular activity at school I choose one with one of the largest memberships in the school.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

19. When I am joining an extra-curricular activity at school I choose one that does not require a specific skill for membership.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

20. When I am joining an extra-curricular activity at school I choose one in which the members like having a good time together.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

21. When I am joining an extra-curricular activity at school I choose one in which the skill involved may mean I join without my friends.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

22. When I am joining an extra-curricular activity at school I don't want to be expected to do something different from the other club members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

23. When I am joining an extra-curricular activity at school I choose one in which we are given assistance on what to do and how to do it.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

24. When I am joining an extra-curricular activity at school I choose one that is known for its number of members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

25. When I am joining an extra-curricular activity at school I choose one in which the members get together often for social events.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

26. When I am joining an extra-curricular activity at school I choose one that a number of students have joined.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

27. When I am joining an extra-curricular activity at school I choose one in which social involvements are not important.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

28. When I am joining an extra-curricular activity at school I want to be able to work alone on a project if I wish.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

29. When I am joining an extra-curricular activity at school I choose one with a limited number of members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

30. When I am joining an extra-curricular activity at school I choose one that does not require any special skills for admission.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

31. When I am joining an extra-curricular activity at school whether my friends join or not does not influence my decision to join.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

32. When I am joining an extra-curricular activity at school I prefer one in which we have a strong program committee.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

33. When I am joining an extra-curricular activity at school I choose one in which I am one of only a few members.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

34. When I am joining an extra-curricular activity at school I prefer one in which each individual is responsible for his own program.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

35. When I am joining an extra-curricular activity at school the number in the club is not important to me.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

36. When I am joining an extra-curricular activity at school having a good time is not the main reason for joining.

ALWAYS SOMETIMES SELDOM NEVER UNDECIDED

APPENDIX 7

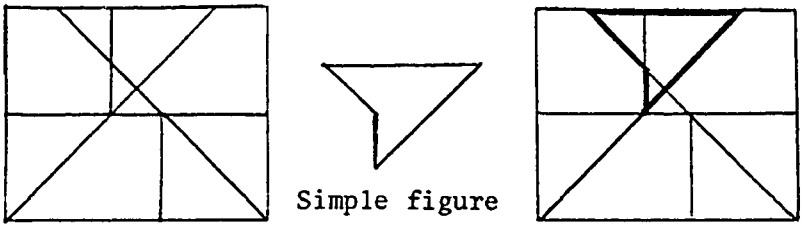
SAMPLE ITEM AND INSTRUCTIONS FOR ADMINISTRATION OF THE HFT-V

INSTRUCTIONS TO SUBJECTS

Hidden Figures Test-V

Each problem in this test is made up of two designs, a complicated figure on the first page and a simple figure on the next. In each problem the simple design is contained in the complicated design. You are to find where the simple design is contained in the larger design and sketch it in over the lines of the figure.

Here is an example of a complicated figure, a simple figure, and the complicated figure shown again with the simple figure sketched in.



Complicated figure

Simple figure

Simple figure sketched in

The smaller figure is always present in the larger figure and always in the upright position. Be sure the figure you find is exactly the same as the simple figure, both in size and proportions. Work carefully and as systematically as you can. If you feel that you cannot solve one of the figures, you may skip it and come back to it later if you have time, but you will waste time if you keep skipping from figure to figure. Do not worry about erasing completely if you have one or two incorrect lines but be sure that you have all the correct ones clearly indicated.

The subjects were allowed ten minutes to complete the test after which time the booklets were collected.

APPENDIX 8

DIRECTIONS FOR ADMINISTRATION OF THE I-E QUESTIONNAIRE

After dispersing copies to the subjects the following instructions were given:

The aim of the Questionnaire is to explore the way you feel about membership in extra-curricular activities. There are of course, no right or wrong answers. Sometimes people tend to answer questions like these in terms of what they think a person should be like. That is not what is wanted here. We would like to know how you actually feel. Some items may seem similiar to others. However, each item is different so please answer each one without regard to the others. At the top of the page please print your first and last names, sex and date of birth.

(Sufficient time is allowed to complete this)

Each statement describes a certain behavior or feeling and you are asked to circle one of the words ...ALWAYS..SOMETIMES..SELDOM..NEVER.. UNDECIDED... according to how you usually behave or feel in comparison to that statement. There can be only one word circled for each statement. Are there any questions? You will have sufficient time to complete the questionnaire. You may begin.

(When the alloted time is over the examiner will say)

Thank you for your co-operation in completing the Questionnaire. Please remain seated while the questionnaires are being collected and your second paper is passed out.

APPENDIX 9

RAW SCORES ON THE QUESTIONNAIRE AND THE HFT-V

Subject	Sex	Day/Mo/Yr	Score on Questionnaire	Score on Hidden Figures V
1	M	28/12/61	66	5
2	M	12/05/60	105	2
3	M	16/05/61	66	4
4	M	08/12/62	104	0
5	M	08/11/60	121	12
6	M	29/01/61	102	10
7	F	30/09/60	104	5
8	F	20/09/59	117	7
9	F	07/04/62	101	3
10	F	08/07/60	106	2
11	M	09/01/59	109	4
12	M	06/05/60	87	2
13	F	31/07/60	115	9
14	F	23/11/62	111	1
15	F	16/09/61	98	3
16	F	30/07/59	100	6
17	F	10/08/58	101	10
18	F	18/08/61	100	2
19	F	19/09/61	121	1
20	M	04/04/61	111	1
21	F	28/03/61	120	2
22	F	05/08/58	103	0
23	M	18/01/61	102	3
24	M	24/11/61	102	3
25	M	12/05/60	94	2
26	M	26/01/61	120	0
27	M	18/10/58	99	4
28	M	19/11/58	78	9
29	M	20/12/61	103	5
30	F	17/12/61	120	1
31	F	06/05/61	124	1
32	M	21/08/62	69	10
33	M	01/10/59	96	15
34	M	03/09/58	118	7
35	F	09/01/60	95	13
36	F	10/05/60	98	5
37	M	03/10/58	98	9
38	M	01/05/61	96	4
39	F	11/06/60	118	5
40	M	03/02/62	113	5
41	M	30/05/61	120	1
42	M	22/08/62	103	11
43	M	16/09/62	89	14
44	F	09/11/61	89	9
45	M	02/06/60	94	13
46	M	27/01/59	110	9
47	F	30/12/61	107	6
48	M	04/06/61	96	0
49	M	16/09/60	109	3
50	M	31/07/60	107	2

Subject	Sex	Day/Mo/Yr	Score on Questionnaire	Score on Hidden Figures V
51	M	22/07/59	103	8
52	M	15/06/59	98	7
53	F	07/12/62	126	4
54	M	10/09/61	97	5
55	M	15/11/60	94	0
56	M	10/11/62	120	4
57	F	29/07/60	120	6
58	F	25/04/59	107	4
59	M	09/07/61	107	3
60	F	26/03/62	99	4
61	F	26/04/59	101	2
62	F	24/08/62	105	0
63	F	31/07/61	98	1
64	M	29/09/60	118	10
65	M	20/03/61	114	2
66	F	09/07/60	114	1
67	F	18/05/60	107	4
68	F	06/09/61	96	1
69	M	04/09/61	126	0
70	F	23/11/58	102	5
71	M	30/01/58	105	13
72	F	04/09/59	113	1
73	F	05/06/61	104	5
74	M	25/06/62	102	9
75	F	02/12/61	119	12
76	F	04/11/62	112	9
77	F	27/05/59	98	9
78	F	26/10/61	112	1
79	M	07/09/62	109	1
80	M	26/01/61	115	5
81	M	05/05/62	103	10
82	M	11/05/59	113	1
83	M	04/03/62	114	5
84	M	13/11/60	107	0
85	M	24/09/61	93	2
86	M	07/07/61	135	1
87	M	05/03/62	119	10
88	M	22/01/61	118	7
89	M	03/05/62	114	4
90	F	18/08/61	114	0
91	F	19/08/61	112	0
92	M	20/03/62	115	11
93	M	02/06/59	91	13
94	F	08/01/61	122	0
95	M	07/10/59	83	6
96	F	26/10/61	103	0
97	M	05/11/62	90	4
98	M	13/12/61	106	8
99	F	23/04/59	59	6
100	F	24/11/61	93	1

Subject	Sex	Day/Mo/Yr	Score On Questionnaire	Score On Hidden Figures V
101	M	28/03/61	88	9
102	M	09/04/61	121	14
103	M	12/09/60	116	2
104	M	29/12/62	98	5
105	M	10/08/59	102	7
106	M	03/09/59	99	1
107	M	19/06/60	109	1
108	M	02/05/59	123	1
109	F	15/10/60	111	10
110	M	29/07/59	114	10
111	F	04/06/61	113	2
112	F	15/11/61	118	2
113	M	09/09/59	92	7
114	M	25/10/59	110	0
115	M	09/05/61	95	1
116	M	05/08/60	102	3
117	F	20/02/62	142	1
118	M	26/11/61	103	2
119	M	05/08/61	116	1
120	F	23/11/58	109	2
121	F	05/01/61	103	1
122	F	13/06/61	111	2
123	F	05/10/62	96	0
124	M	07/11/62	117	1
125	M	30/05/61	99	1
126	M	03/04/61	110	2
127	M	01/11/58	94	0
128	F	11/12/61	98	3
129	F	31/05/62	118	0
130	F	01/02/61	102	5
131	M	10/01/59	97	6
132	M	11/10/59	111	2
133	F	25/01/59	94	14
134	M	28/06/61	105	14
135	F	22/03/59	111	1
136	M	08/11/61	83	15
137	F	11/06/60	115	11
138	M	09/02/62	103	14
139	F	31/12/60	109	6
140	F	21/12/60	104	7
141	M	08/08/59	100	16
142	M	28/07/60	126	6
143	F	10/04/60	122	6
144	M	16/04/59	92	4
145	F	09/06/61	92	16
146	M	06/06/61	118	4
147	F	05/06/59	107	0
148	F	30/06/60	102	4
149	F	02/05/60	101	2
150	F	02/06/61	103	7
151	M	26/01/61	129	3