THE RELATIONSHIP OF CERTAIN SOCIO-CULTURAL AND COMMUNITY FACTORS AMONG SIXTH GRADE STUDENTS TO CREATIVITY IN ART

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THE RELATIONSHIP OF CERTAIN SOCIO-CULTURAL AND COMMUNITY FACTORS AMONG SIXTH GRADE STUDENTS TO CREATIVITY IN ART

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CHAPTER I

INTRODUCTION

The need for creative men and women has never been greater than it is at this time. International, national, and local problems are demanding original solutions. The most pertinent questions of this era could well be "Who are our problem solvers? Where are they found?" Problem solvers are creative people. They are everywhere for creativity exists in all people to some extent. Wilson states, "... the abilities involved in being creative are universal, i.e., everybody possesses these abilities to some degree; that these abilities are capable of being increased by training; and it is one of the school's legitimate functions to provide such training" (19, p. 33). Guilford (11), Arnold (1), Torrance (28), and Maslow (17) find agreement with Wilson. It is the educators' challenge to take this potential and nurture its development until it reaches productivity. It is not the exclusive concern of the educators, Rogers states,

In a time when knowledge, constructive and destructive, is advancing by the most incredible leaps and bounds into a fantastic atomic age, genuinely creative adaptation seems to represent the only possibility that man can keep abreast of the kaleidoscopic change in his world (19, p. 64).
Murray expresses the same concern: "An emotional deficiency disease, a paralysis of the creative imagination, . . . --this is the diagnosis I would offer to account for the greater part of the widespread desperation of our time" (18, p. 12). Creativity is now the concern of all.

As early as the late 1800's a few educators and psychologists were undertaking research in this area. This is evidenced by the work of Galton (7) and Dearborn (5). Even though creativity has been of continuing interest since these early beginnings, investigations were not undertaken on a grand scale until Guilford's address on creativity was delivered to the American Psychological Association in 1950 (10). Research has gained momentum; this is partially due to the fact that Guilford's factors of creativity gave a foundation for further research (11).

Higher education institutions are devoting vast amounts of time, energy, and money to research concerned with creativity. The University of Southern California, Pennsylvania State University, the University of Minnesota, the University of Ohio, the University of Buffalo, the University of Utah, and Harvard University all have well designed plans to investigate various aspects of the subject. Creative Problem-Solving Institutes, the Creative Education Foundation, The Ohio State University Conferences, and the six-year Research Conferences on the Identification of Creative Scientific Talent have all developed from
leadership furnished by these institutions. Other schools too numerous to mention have also initiated programs.

Private individuals, industry, and government all express concern for developing creative talent. The Rockefeller Brothers Report (23) listed creative talent as one of the nation's greatest natural resources. Grabo (9) calls creative imaginative genius the greatest of all natural resources. General Motors, General Electric, Ford, and many other industrial concerns have creativity programs. The government has spent vast sums on research in an attempt to find creative scientists and military personnel who could function in government space and military programs (19). Beittel (4) notes art education has received more federal funds during the years from 1964 than ever before. The government's support of the arts and creative endeavors was evidenced by the planned National Cultural Center, the National Foundation for Arts and Humanities, and the appointment of a Federal Advisory Committee in the arts. This committee will recommend ways to stimulate and support the arts.

The common man is also more concerned about personal creativity and art than ever before. This is shown by the greater number of people who are taking courses in painting, crafts, and art appreciation as leisure activities. Galleries, private schools, museums, public schools, libraries, and institutions of higher learning are all
extending their programs to include more courses of a creative nature to accommodate more students of all ages (16).

The earlier the nature of creativity is known, the better the educator's guidance of its development could be. Research focusing on environmental factors is needed (19, 23), especially at the elementary grade level. Socio-cultural factors affect the child and are a real concern for the school, for the school operates within the influence of these factors. Education could provide desirable experiences to supplement ones not available in the out-of-school cultural milieu. Only when it is known what socio-cultural factors are positively or negatively related to creative development, and to what extent and under what conditions, can a curriculum be planned which will prepare creative students capable of satisfactorily meeting new situations.

Statement of the Problem

An attempt will be made in this study to determine the relationship between sixth grade students' creativity in art (as measured by selected instruments) and certain socio-cultural and community factors.

Purposes of the Study

The purposes of this study are as follows:

1. To measure the selected sixth grade students' creativity in art.
2. To determine the relationship between the following factors and the degree of creativeness in art demonstrated by the subjects involved:

A. ethnic group
B. socio-economic group
C. community size
D. church activity
E. maternal occupational status

Hypotheses

The following hypotheses will be tested:

1. Regardless of the size of the community and ethnic group membership, sixth grade children from the higher socio-economic group will reflect greater creativity in art than will subjects of the lower socio-economic group.

2. Sixth grade Anglo-American children in all communities and both socio-economic groups will evidence greater creativity in art than will students of the Negro American or Latin American ethnic groups.

3. Sixth grade children of all ethnic groups (Anglo-American, Negro American, and Latin American) residing in large cities will evidence greater creativity in art than will subjects residing in small cities or rural communities.

4. No significant relationship will be found between maternal occupational status and sixth grade student's creativity in art.

5. No significant relationship will be found between church activity and the student's creativity in art at the sixth grade level.
As related to hypotheses one and two, children in the lower socio-economic and minority ethnic groups are expected to be less creative than children in the higher socio-economic and Anglo-American, the majority, ethnic groups. Such has been indicated by research and is hypothesized by leaders in the field of creativity (7, 19, 25). Most individuals will not deviate from patterns imposed by society until they have achieved a measure of status safety (19). Creativity demands divergent behavior. Man strives to gain a favorable place in his social order. The lower socio-economic parents typically stress the importance of the child's showing respect for and obedience to all adults (22). Conformity is valued by this group. The creative child typically displays behavior characteristics which are considered undesirable by many teachers. The child who is uncertain of his position cannot afford to jeopardize his position by questioning and displaying traits typically associated with the creative child (22, 27). Deprivation of approval is a threat to the child's creativity.

Tumin's following statement expresses the case for anticipating hypotheses one and two to be accepted:

. . . the capacity for and interest in one's creative self arises and is acted upon proportionate to the amount of status-assurance and security which the individual possesses . . . acceptance would mean that the individual felt integral to and within the social order and did not view his individual unique strivings for creative expression as undesirable
marks which might result in his losing the favorable status-definition he so urgently desires (19, pp. 107-108).

Morris Stein agrees with Tumin as evidenced by the following statement:

... the extent to which a variety of creative products are developed depends on the extent to which cultural influences permit the development of both freedom between the individual and his environment and freedom within the individual: or the extent to which the culture encourages diversity and tolerates the seeming ambiguity that such diversity suggests (25).

The marginal man is frequently mentioned in connection with creativity. Haimowitz suggests hypothesis two will not be accepted for marginality may be a precondition of creativity (13). Simmel defines "marginal man" or "the stranger" as one who is part of a culture, but not of it. He is not bound by local properties and customs (13). It would seem minority groups would more nearly represent marginality and would, therefore, be more creative. Research has not indicated this to be the case (6).

As related to hypothesis three, research has been minimal and inconclusive. Ford found students from small cities to be more creative than children from either rural communities or large cities (6). The researcher questioned this conclusion. The large city offers the creative child many cultural advantages. Museums, trained art teachers who typically value creative children, the theater, and clubs which focus on various creative pursuits are available. Through park or school programs many cities
sponsor free creative activities during the summer or after school. The scope of activities available in a large city is much broader than most smaller communities can afford to offer.

Research related to hypotheses four and five has also been minimal and inconclusive. No indication has been given that a significant relationship does exist at the elementary level.

As related to hypothesis four, Getzels and Jackson gave brief coverage to maternal occupational status and found the high IQ low creatives to have significantly more unemployed mothers at home. These mothers demanded that their children excel more than did the mothers of the high creatives (8).

As related to hypothesis five, church affiliation has not been investigated in relationship to creativity with children as subjects. Studies with scientists and other adults have dealt with religious considerations. McPherson states,

There is a disagreement about the emphasis on religious values. Some studies report that the more creative scientists place little emphasis on religious values. Other studies report that the creative scientists place religious values high in their value system. There is, however, agreement that the more creative scientists emphasize theoretical values and the less creative tend to prefer practical pursuits (26, p. 94).

Walburg and Welch (31) found creative physics teachers to score higher on theoretical and aesthetic values but lower on religious values than other physics teachers. Clark hypothesized creativity often results from a combination of
faith and skepticism as sources of motivation together with the resulting tensions, so that more creative people of high ability might be both more religious and more skeptical than the less able (10). Results indicated there was creative interaction between religious belief and secular achievement, but with a significantly greater influence of belief on achievement than achievement on belief. Pope found the church to be a middle class institution primarily interested in supporting rather than breaking down class differences (20).

Definition of Terms

1. Creativity in Art refers to a combination of three abilities as shown by the Paper Shapes Test, Torrance's Tests of Creativity, Figural Form A, and the Barron-Welsh Art Scale. These abilities are: (a) the ability to produce an art product which demonstrates a new or fresh way of visualization; (b) the ability to demonstrate variability in fluency, flexibility, originality, and elaboration; and (c) the ability to make judgements of art products similar to those of recognized artists.

2. Ethnic Group designates any of the basic groups of mankind, as distinguished by customs, characteristics, language, etc. This paper considers three ethnic groups. They are Anglo-American, the Negro American, and the Latin American.
3. Large City School refers to a school located in a city having more than 90,000 population, drawing its students from the same general area of town.

4. Small City School refers to a school located in a community between 30,000 and 60,000 population.

5. Rural Community School refers to a school located in a community having a population less than 10,000 population.

6. Socio-Cultural Factors indicates those characteristics of ethnic group, socio-economic group, church activity, and maternal occupational status.

7. Higher Socio-Economic Group refers to subjects composite scores on the adaption of Hollingshead's two-factor Index of Social Position does not exceed thirty-nine points.

8. Lower Socio-Economic Group refers to subjects whose composite scores on the adaption of Hollingshead's two-factor Index of Social Position exceeds thirty-nine points.

Limitations of the Study

1. This study was limited to those functions measured by the instruments selected for use in this investigation.

2. This study was limited to Anglo-American, Negro American, and Latin American sixth grade students residing in North and Central Texas communities.
3. Generalizations of the findings of this study were limited to situations in which the variables (ethnic group, socio-economic status, community size, etc.) were similar to those of this investigation.

Basic Assumptions

1. The student sample was drawn from sixth grade populations with the appropriate backgrounds to meet the various stipulations required by the design of this study.

2. The students answered the questionnaire honestly.

3. The measurements utilized, (a) Torrance's Test of Creative Thinking, Figural Form A, (b) Barron-Welsh Art Scale, and (c) Paper Shapes Test, were a responsible means of evaluating artistic creativity differences.

4. The questionnaire adequately determined the student's socio-economic group, ethnic group, maternal occupational status, and church activity.

Instruments

The tests used in this study were selected because of their apparent relationship to creativity in art, and their suitability for sixth grade children. Guilford of the University of Southern California and Torrance of the University of Georgia recommended appropriate tests to be considered (12, 30). Each instrument selected serves a different function. The Barron-Welsh Art Scale, a psychological test, is based upon an individual's likes and dislikes.
Research indicates the preference for simplicity or complexity is not dependent upon level of training in art and scores based on such preferences can distinguish between artistic creative people and those who are not. Torrance's Test of Creative Thinking, Figural Form A measures the student's ability to be original, to elaborate, to be flexible and his fluency of ideas. These specific factors or intellectual abilities are considered by Lowenfeld, Guilford, Arnold, and Taylor to be valid measures of creativity (19). The Paper Shapes Test was selected because it gave the child an opportunity to produce a creative product. Taylor's concern for the product in the assessment of creativity is evidenced by his following statement:

In the area of developing criteria for the evaluation of degree of creativity, ... assessment of the product is much more important and acceptable ... than assessment of the process. One reason is that the product is far more tangible (26, p. 8).

Inglehart also believes accurate identification of gifted art students involves observation of tangible products by competent and knowledgeable artists or art teachers (15). The questionnaire (see Appendix A) used to determine the student's ethnic group, socio-economic group, and other pertinent information was designed to fit this study. The terminology and content were partially influenced by Hollingshead (14), Reiss (21), Ford (6), and Warner (32).
Description of Tests Used

The Barron-Welsh Art Scale (see Appendix B) has been used to distinguish creative people from noncreative people at various ages from preschool through adulthood. It is a non-verbal test and categorizes subjects according to their preference for complexity of experience, a factor considered of importance to creativity by Sprecher (19), Stein (25), Barron (2), Welsh (3), and Rosen (24). The subject is confronted with eighty-six black and white figures. "The figures range from simple geometric forms to complex and diverse patterns and designs. They were drawn with many variations to include differences in line quality, shape, content, and other aspects of design" (33, p. 5). On a separate sheet of paper the child marks whether he likes or dislikes each figure. In a cross validation study Barron and Welsh found the scale effectively differentiated with high reliability, artists and non-artists (3). Rosen found his data agreed closely with the observations of Barron and Welsh (3, 24). Rosen further stated that it was evident scores on the art scale did not increase as a function of level of training in art (24). This reason found the difference between artists and non-artists to be significant at better than the .01 level of significance. The Barron-Welsh scale correlated with originality ratings at the .02 level of significance.

Torrance's Tests of Creative Thinking, Figural Form A, includes three activities which elicit the subjects'
variability in fluency, flexibility, originality, and elaboration. In the first task, Picture Construction Activity, the primary motivation is for originality and the secondary motivation is for elaboration. In the second task, Incomplete Figures, flexibility or variety of type of response is added to originality and elaboration, and fluency is a minor consideration. In the third task, Repeated Figures, fluency is stressed as a motivation as well as originality, elaboration, and flexibility (see Appendix C). Although establishing validity is difficult with creativity tests, Torrance cites seven studies involving children which give support to the construct validity of the tests (29). The coefficients of correlations for these studies range from -.41 to .51. The negative correlation was made between attitudinal rigidity and the Torrance Tests; this would support the rationale upon which these tests were constructed. Concurrent validity is supported by studies involving children which correlate teacher nominations and Torrance Test scores. Torrance, Yamamoto, and Myers (29) found that teachers were able to differentiate on fluency ($F$-ration = 14.98 to $F$-ration = 15.95), flexibility ($F$-ration = 8.08 to 5.53) and originality ($F$-ration = 16.15 to 5.83). Peer nominations have also been used (29). A test-retest reliability coefficient of .88 has been reported for fifth grade pupils (29).

The Paper Shapes Test designed by Ford (6) is a group test recommended for use with elementary children in which
no reading is required and rating is done by people with experience with this age child. Each student is given an envelope of gummed and non-gummed colored paper shapes and is asked to create an imaginative design on the designated sheet within a twenty-five minute time period. Students may use the shapes in any manner as long as they do not use additional materials or tools. This test is still in the experimental state and does not have reliability, validity, or norms established (see Appendix D). A panel of judges score the tests individually on a three-point scale.

Summary

International, national, local, and personal problems cannot be solved with tried solutions for the challenges of today are unique with this period of time. To meet the demands of this age requires creative thought and practice. The survival of the race could be dependent upon man's ability to originate adequate responses to the everchanging world situation. Developing each individual's creative potential appears to be the most hopeful solution to the problem.

The researcher undertook this study believing through education the creative potential can be developed. Art education has been devoted to extending the creative impulse and to applying the same problem solving techniques as does the field of science. Using the scientific method and the creative impulse as complements could generate avenues of
approach to problems. Creative and divergent reasoning has value as does convergent reasoning. The earlier the attack is made against stifling creative or divergent thinking, the earlier another tool is available with which to meet the challenge of the era.

Chapter II (p. 20) will be concerned with research pertaining to the socio-economic and community factors which relate to this research.
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CHAPTER II

BACKGROUND AND SIGNIFICANCE OF THE STUDY

The Importance of Creativity and Art

Research on creativity is demanded and justified by the times. Mental health, personal and social adjustment, vocational success, and educational achievement have all been found to be related to creativity. Many authorities in various fields do not limit the importance of creativity and art to individual problems, but give it more momentous significance.

... the present development of the physical sciences is making an imperative demand upon us as individuals and as a culture, for creative behavior in adapting ourselves to our new world if we are going to survive (35, p. 72).

Lowenfeld quotes the noted scientist Fred Hoyle's statement, "The nation that neglects creative thought today will assuredly have its nose ground in the dust of tomorrow" (29, p. 17). Torrance (44), Guilford (18), Parnes (35), and Taylor (42) concur with this estimation of the importance of creativity for personal and social adjustment. Maslow considers creativity essential for personal adjustment. In speaking of self-actualizing people he states that each one he observed, without exception, showed creativeness or inventiveness or originality (32). To Maslow
self-actualization is a basic need of man. He further contends that emotional blocks to creativity are blocks to self-actualization, the lack of which leads to poor physical as well as social being. John Rader Platt, the physicist, calls the need for novelty or change the fifth need of man, placing it behind the need for air, water, food, and protection in severe climates (35).

Creativity and Health

Physicians and psychiatrists evidence their concern for creativity in their work and writing. It is a rare book on mental health which does not mention creativity. Research in this area justifies the significance it is given. Hebeisen (23) found schizophrenics to have extreme inflexibility, improverished imagination, lack of originality, and inability to discover new solutions to problems. This evidence would indicate that creative persons have an abundance of certain abilities which schizophrenics lack. Mackinnon's work with highly creative architects showed them to manifest extreme imagination, flexibility, and independence (30). Patrick (36) found stifling creativity created dissatisfaction with life and created tension which led to breakdown. Creativity appears to be an asset in coping with daily problems.
Creativity and Vocational Success

Innovation has been indicated to be an asset to vocational success by research in many fields. Maizell found it to be an asset to research chemists (31). Wallace (45) found creativity to be positively correlated with sales productivity. MacKinnon (30) found the most eminent architects to be more creative than others in their field.

Creativity and Intelligence

Osborn, Stoddard, Guilford, Torrance, Taylor, Getzels, Jackson, and Stein (35) believe there is cause to consider creativity another dimension of intellectual talent and personality, one that is not measured by usual intelligence tests. Torrance advocates supplementing presently-used intelligence tests and personality measures with instruments involving creative thinking abilities and characteristics of the creative personality (44). Guilford introduced the concepts of convergent and divergent thinking and related them to approaches to learning (35). In their work with art students, Beittel and Burkhart (6) used the concept of divergency and came to the conclusion that discovery has been falsely considered to be related to problem-solving. Their evidence indicates discovery is distinct and singular from problem-solving not only as a strategy but as an end in itself. Getzels and Jackson provided research which indicated the school achievement of the highly creative and
the highly intelligent groups to be equally superior to the school population, despite the fact that there was a twenty-three point difference in average IQ between the groups (14). Yamamoto found no evidence to indicate overachievers are more creative than underachievers in any of the subject matters. He suggests creativity does not contribute to school achievement as measured by current achievement batteries (48). This is in disagreement with Getzels and Jackson (14) and Cline, Richards, and Needham (8). The intelligence test is a valid instrument, but it can no longer be considered the only measure of intelligence. The Foundation for Research on Human Behavior (13) and Moore (34) presented research which indicated high IQ and creativity do not necessarily occur together.

In order that educators may more effectively guide creative abilities evidence must be accumulated about all aspects of creativity.

There is considerable evidence to suggest that social-psychological factors such as socio-economic status, ethnic and religious background, educational level of the family, stability of the family structure, and the availability of educational and occupational models in the home and in the community, are related to achievement (15, p. 297).

Previous research in art, education, and psychology approached the study of creativity from one of four orientations. According to Mooney (35, p. 74), these were the creative person, the creative process, the creative product, or the environment in many cases. The socio-cultural factors of
the environment have received limited attention (43). When
the environment was investigated, the largest number of
studies has been in the area of peer relationships. It
cannot be denied that certain settings have and do encourage
or deter creativity (39). Certainly the Renaissance was a
time of creative fruitage just as ancient Greece was a site
of such development. Both spawned more than would be probable
of creative talent. Thurstone said, "Even though we are
ignorant about the nature of creative talent, we can be
pretty sure that it can be encouraged or discouraged by
environmental factors" (35, p. 61). Society encourages
development of those attributes which it values. With the
common man more aware of and more receptive to creativity
and art (9), it would seem the schools would meet with
success should they implement changes in their settings
which would stimulate creative growth.

Creativity, Art, and Education

Theory and research in art education have contributed
to the general knowledge of creativity. The research of
artists, educators, and psychologists has been mutually
supplementary and complementary. Lowenfeld has been a
major voice for art educators as have Beittel, Eisner, and
Burkhart. Lowenfeld said, "... when your child's art is
frustrated, all of the qualities which may make him another
Edison or Marconi or Einstein may become inhibited" (35, p. 11).
The Russian delegates at the International Society for
Education Through Art held in 1957 agree with this statement (29). They felt the child's creativity (as evidenced by his art work) must first be unfolded and then channelled and disciplined. It was their belief that qualities which are needed to make a creative artist are the same qualities needed for creative production in other fields should the child's interest and talent lie outside the field of art. Lowenfeld felt research indicated this to be true. The set of criteria for creativity which Lowenfeld and Beittel established for art students was found to be almost exactly the same as those found by Guilford for scientists (17, 19). This gives further credibility to the Russian concept of the nature of creativity. These eight criteria were: sensitivity to problems, fluency, flexibility, originality, ability to redefine and rearrange, analysis, synthesis, and coherence of organization. Tests of creativity have been built upon these criteria and a major contribution to knowledge of creativity has been made by artists, art educators, and art students. Torrance's Tests of Creative Thinking have been devised to evaluate the presence or absence of certain of these criteria on the elementary level. Though the work of Barron, Welsh, and Fischilli (3, 4, 11) has had a strong orientation toward art, it has been used successfully for measurement in other areas. Keiler calls creativity "the core of art education" (27) and rightly, for in art more than in other subjects,
divergency is valued. In art education it is desirable to master skills, but to be a conformist, the antithesis of a creative person, is not to be desired. The artist is not a mimic.

Ferguson believes creativity is produced by certain types of practice and depends little upon heredity (10). Guilford takes the position that heredity determines the upper and lower limits of creative ability, but that experience or learning may have considerable room within which to develop (35). It is a safe working assumption that education can do a great deal to promote the development of individuals in the way of preparing them to perform creatively, if not in the way of strengthening creative abilities. This research would deal with certain socio-cultural variables which may or may not affect creativity in art. The knowledge of the relationships of these variables to creativity, in either a positive or negative direction, would be an aid in future planning. Gowan states, "We consider creativity as responsive to environmental stimulation, and therefore dependent upon our education efforts" (16, p. 15).

Creative Development

The sixth grade level seems logically a point where significant factors could be observed. This grade was chosen for this research because it is generally considered one of the elementary grades two highest periods of
creativity (44,38). Torrance, in the Minnesota studies, found the frequency of creativity to be high for both males and females during the sixth grade (44). The developmental curve for creativity which Torrance depicts (44, p. 93) is almost totally consistent with research results reported by Kirkpatrick (28), Simpson (38), Barkan (2), and Wild (47). That there could be near agreement is remarkable for the earliest of these studies was executed in 1900 and the studies used a variety of instruments. This may be a point in the school process when socio-cultural factors become more significant than they have previously been.

There is general agreement that creative imagination reaches a peak between the ages of four and four-and-one-half years. Imagination grows from this time until the fourth grade, despite the fact that the child enters kindergarten and school and is, typically, channeled into more conforming behavior. At the beginning of the fourth grade there is a severe drop in creative development followed by a rise during the fifth and sixth grades. The seventh grade is a period of decline for girls and boys, followed by a steady and continuing rise for females. This rise continues until the tenth grade when a plateau of approximately one year is reached. From the eleventh through the twelfth grades, females continue to increase in creative development. Males show an increase after the initial seventh grade slump, they remain at a plateau in the eighth grade, and have rapid development in creativity
during the ninth grade. A sharp increase in creativity in the early tenth grade is followed by a slow decline in creative development throughout the remainder of the years in school. The males, who initially evidence a higher frequency of creativity than the females, lose the advantage during the fourth grade and apparently never reach the mean female level again (44). Wilt explains the decline in creativity in the fourth grade on the basis of conformity to peer group standards and the identifying with male-female roles (47). Weideman found fourth graders were also less creative in music, for they created fewer songs than any other grade from three through six in response to several motivating techniques (46). The decline in creative behavior apparently embraces all subjects in this culture.

Concern regarding decline in the creativity of elementary children is justified. If declines are developmental as are some aspects of growth, neither the children who never experience sharp declines nor the children who never regain their loss can be explained. Sullivan (40) attributes decreases to social pressure and reactions to new stresses encountered at particular levels of development. It is a matter of necessity to conduct research prior to entrance into junior high school where the child will meet with new pressures and stresses. New pressures could compound previous effects. The general pattern creativity takes in the lower grades is known, and the earlier necessary adjustments can be made, the better
will be the probability of lessening creativity losses. The questions which arise are many. What happens to the elementary child during the elementary experience that lessens his creativity? Are the periods of decline due to factors within the school or without? In either case, what can educators do to erase the regressions shown by the five, nine, and twelve-year-olds? If they are part of a normal growth pattern, what can be done to lessen the loss or more nearly hold development at a plateau? Should gifted children be accelerated during the elementary years when their potential creativity appears to be the greatest? The educator's role and the importance of environmental factors must not be underestimated. Means found that environment seemed to be substantially more important to an understanding of factors influencing creative production than knowledge of personal characteristics (33).

Creativity and Ethnology

Studies concerning ethnic groups present problems to investigators because there are many uncontrollable variables. These variables could be the reason studies of relationships of different ethnic groups to creativity in art have been rare. Ford (12) found no significant differences in the creativity of Latin American and Negro American students, but did find Anglo-American students to be significantly more creative than either the Latin Americans or the Negro Americans. Moore (34) states current research suggests
that intelligence is an essential factor in artistic creativity, but it is not apparently influential beyond a certain point. The Foundation for Research on Human Behavior (13) found in their studies of minority groups that nature had given them no lower IQ scores than the majority group. It would appear the breakdown was in the nurture, not the nature area. The marginal man is frequently mentioned in connection with creativity. Haimowitz suggests that marginality may be a precondition of creativity (20). Simmel defines "marginal man" or "the stranger" as one who is part of a culture, but not of it. He is bound very little, if at all, by local properties and customs (20). It would seem minority groups would more nearly represent marginality and would therefore be more creative, but such has not been shown to be the case.

Creativity and Socio-Economic Background

The socio-economic factors which this study would investigate have all been considered in relation to social class. A child's socio-economic background is determined by the family into which he is born. It is a variable over which he has very little control, but one which will probably control or influence every phase of his development. Patterns of speech, manner, attitudes, and even creativity are an outgrowth of experience. The act of living in a social class affords experiences specific to that setting (7, 21, 22, 24). "Each child brings to school a collection
of values, beliefs, and attitudes, plus behavior patterns through which the values and meanings are expressed. Cultural factors over which he has no control play an important part in making him what he is" (7, p. 247). Taylor and Holland hold a similar opinion regarding the home. This is evidenced by the following statement. "Home environments also may be regarded as external influences enhancing or hindering the development of those attributes which have been found to be predictors of creativity" (41, p. 29). Research related to social class has furnished evidence pertinent to the child's creativity. Gowan (16) believes creative development requires the child to have a base from which to venture and a climate which encourages curiosity.

Parental occupational status and education influence the child's social status. More reward is assigned some occupations than others (27). It is upon these two factors that Hollingshead has built the Index of Social Position (25). That different classes do exist and their offsprings do receive differential treatment cannot be denied for observation makes this evident. Research confirms that child-rearing practices and child response differ from class to class and culture to culture (5, 7, 21, 22, 24, 26). Studies agree that these differences are apparent in this culture.

1. Middle class parents have higher educational expectations of their children.
2. Lower class parents have more severe punishments in toilet training.

3. Middle class children are allowed more freedom of movement away from home during the day.

4. Higher socio-economic status is usually associated with greater achievement in school subjects.

5. The school favors the student from the middle class family.

6. Lower class families foster respect and obedience.

Alper's research substantiates the belief that child-rearing practices and the effect they have upon child response do affect the child's creativity (1).

The culture of this country rewards convergent reasoning and conforming behavior and frequently withholds rewards for nonconforming and divergent thinking. For this reason it is not surprising that minority groups wishing to enhance themselves may conform to the extent they stifle their creative potential (13). Neither is it surprising that upper middle class children are urged in the same pattern by their parents in an effort to secure their positions (14).

Many investigators have considered the effect of parental influence on creativity (12, 14, 21, 22, 30, 44). They have arrived at the following conclusions:

1. The parents of the more creative children were slightly lower in socio-economic status than the parents of the less creative children and were usually less educated.
2. The family of the creative child permitted more divergent behavior in their children. The child was secure in the family, and could express his feelings.

3. The fathers of creative children were usually in positions of employment which required them to be creative. Certainly evidence is sufficient to conclude one class fosters creative behavior and another does not. However, it does appear that the lower class child matures in an atmosphere which is not conducive to divergency or creative behavior.

Summary

The world of today demands recognition of the essentialness of creativity. Many believe creative adaption to be the key to survival. Mental health, personal and social adjustment, vocational success and educational achievement are aided by creative growth. Art fosters creativity by encouraging purposeful originality and divergency. Theory and research in art, education, and psychology have been supplementary and complimentary. General agreement exists concerning the developmental curve of creativity, the qualities essential for creative behavior, and the recognition of creativity as a unique dimension of intellectual talent and personality. It is further agreed creative potential is universal and its development is affected by environment. For educators to guide creative abilities more evidence must be accumulated
about environmental factors and their effects on creative growth. The elementary grades are of prime importance, for the earlier adjustments are made the better will be the probability of lessening creative losses.


The purpose of this study was to determine whether any relationship existed between the artistic creativity of sixth grade students and certain socio-cultural and community factors. Ethnic group, socio-economic group, church activity, and maternal occupational status were considered socio-cultural factors. Community size was considered a community factor. To accomplish this, three tests (previously described in Chapter I) and a questionnaire (see Appendix A) were administered to the participants in this study.

Description of Subjects

The students involved in this study were enrolled in the sixth grade of fourteen public elementary schools in North Texas and Central Texas during the 1963-1969 school year. Students who were over ten years of age but who were not yet thirteen years of age were eligible for use in the study. A total of 340 students were involved in the testing. Of the total tested, fifty-four students were ineligible to be included in the study due to age, mental retardation, or incomplete scores due to absence during the testing. Ninety subjects were randomly selected, as suggested by Senders (5), from the available population of those who met
the criteria variable requirements necessary in this investigation. In certain instances all subjects who met the criterion variables were used. All available small city, higher socio-economic, Negro Americans and all available rural community, higher socio-economic, Latin Americans were used in this study. These students were used to test hypotheses one, two, and three. Thirty children were Anglo-American, thirty were Negro American, and thirty were Latin American. On another dimension, thirty subjects came from each of the three community categories, large city, small city, and rural community. Forty-five subjects comprised the higher socio-economic group and forty-five comprised the lower socio-economic group. Concerning maternal employment and church activity the total number of subjects was categorized appropriately, according to their responses to the questionnaire.

Procedures for Collecting Data

The questionnaire and battery of three tests were administered by the researcher during December, January, and February of the 1968-1969 school year. The teachers involved were visited prior to testing and had received the same information concerning the study. The teachers introduced the study to the children prior to the arrival of the researcher. All tests were administered as near the time as possible, taking into consideration the scheduling of the schools. The testing was planned for one hour
sessions on two consecutive days. Six schools requested the testing be completed in one session. In these cases, a ten minute break was given following the first hour of testing. The subjects answered the questionnaire and completed the Barron-Welsh Art Scale during the first testing period. Bost instruments were untimed. They required approximately fifty minutes to complete. During the second period of testing, the students completed Torrance's Test of Creative Thinking, Figural Form A and the Paper Shapes Test. The time required to complete the tests after instructions had been given was fifty-five minutes. The same testing order, time restrictions, and instructions were followed as nearly as possible with all subjects. Questions which arose were answered according to the manual or the researcher's discretion. The researcher or teacher marked the ethnic group on the questionnaire after the student had completed the form. If a student were absent one day, his scores were discarded. Tests were not given more than once in any one school.

A pilot study was conducted during the spring semester of 1968 in order to determine the adequacy of the instruments and to devise proper procedures. The questionnaire was revised on the basis of the information gained from the study. The pilot study provided opportunity to revise rating procedures of the Paper Shapes Test according to the author's recommendation (2).
Procedures for Treating Data

Hypotheses one, two, and three were tested through the use of a three-dimensional \((2 \times 3 \times 3)\) analysis of variance (see Figure 1).

![Three-dimensional analysis of variance](image)

Fig. 1—Three-Dimensional analysis of variance design \((2 \times 3 \times 3)\).

This was the basic design in which the three major variables and their principle conditions were:

A. Socio-Economic Group, distinguished as higher socio-economic group and lower socio-economic group.

B. Ethnic group, distinguished as Anglo-American, Negro American, and Latin American.

C. Community size, distinguished as large city, small city, and rural community.

A test of hypotheses one, two, and three was achieved by applying the \(F\) statistic to determine if variation existed. Analysis of variance was applied to composite scores based on the three measuring instruments. Duncan's New Multiple Range was the procedure used to indicate which factors were variant. A further analysis was made on the basis of the
separate creativity instruments. The interpretation of this additional analysis is presented in Chapter V.

The second part of the study examined hypotheses four and five, the secondary variables were:

A. Maternal occupational status outside the home, distinguished a four-point continuum which ranged from maternal unemployment outside the home through full time employment away from the home (see Appendix A, page 103).

B. Church activity, distinguished as very active in the church, moderately active in the church, or inactive in any church (see Appendix A, page 103).

These variables were tested through the use of simple analysis of variance. These techniques contrasted each of the secondary independent variables with the dependent variable to determine their influence. The dependent variable was the score of creativity in art for each creativity test. The independent variables were maternal occupational status and church activity. The $F$ test was used to determine possible significance of main effects. When the $F$ ratio was significant, Duncan's New Multiple Range was used for comparison of mean differences. The data for each subject used was punched on cards and computations were made by the Data Processing Center of North Texas State University.

Derivation of Socio-Cultural and Community Factors

Four socio-cultural factors were derived from the questionnaire: ethnic group, socio-economic group, maternal
occupational status, and church activity. The community factor, population, was derived from the 1968-1969 Texas Almanac (1).

**Ethnic Group**

The three ethnic groups considered in this study were Anglo-American, Negro American, and Latin American. They were divided numerically as follows: Anglo-American, 180 students; Negro Americans, 72 students; Latin Americans, 42 students. The ninety subjects used to test hypotheses one, two, and three were randomly drawn from the total available population. Of these, thirty were Negro Americans, thirty were Latin Americans, and thirty were Anglo-Americans. All eligible subjects were used to test hypotheses four and five.

**Socio-Economic Group**

To determine the socio-economic group of each student, an adaptation of Hollingshead's two factor Index of Social Position (3) was used. This adaptation has been used in previous research by Ford (2). The Index of Social Position is derived from the father's occupation and his educational level. These factors are each separated into seven-point scales, ranging from one (high) to seven (low).

Education, with regard to the scale, is simply the number of years schooling which a person has completed. The educational scale assigned points as follows:

1 point—graduate professional training
2 points—college graduate
3 points—partial college (at least one year)
4 points—high school graduate
5 points—partial high school
6 points—junior high school
7 points—less than eight years of school

Due to the fact that Hollingshead's occupational scale (3) was not definitive enough to categorize the range of occupations which Ford's data yielded (2), the researcher elected to use Ford's adaptation (2). This adaptation was a variation of the Hollingshead scale using the National Opinion Research Center (NORC) scale. This classified occupations into a continuum.

An index developed by Reiss (4) organizes occupations into occupational groups used by the Bureau of Census in 1960, and gives them a NORC score. See Appendix E, a partial listing suggested by Ford (2). The ranking of the occupational scale used is as follows:

1 point—86 to 94 NORC score
2 points—81 to 87
3 points—74 to 80
4 points—67 to 73
5 points—60 to 66
6 points—49 to 59
7 points—34 to 48

The number of points for the education scale was multiplied by a weight of four. The number of points on
the occupation scale was multiplied by a weight of seven. The products of the two scales were added to yield a composite score which ranged from eleven (the top of the higher socio-economic group) to seventy-seven (the bottom of the lower socio-economic group). When the combined scores yielded a total which did not exceed thirty-nine points, the subject was placed in the higher socio-economic group. When the combined scores exceeded thirty-nine points, the subject was placed in the lower socio-economic group.

Community Size

The five rural communities from which participants were drawn for this study ranged in size from 1,807 to 9,300 population. The rural communities were located in rural areas which were noticeably lacking in cultural opportunities. The majority of the population worked in light industry and agricultural pursuits of the area or commuted to other areas to work. The three small cities from which participants were drawn ranged in size from 26,100 to 43,900 population. These cities offered more educational and cultural opportunities. The people tended to be employed more centrally in the area than did the inhabitants of the rural communities. The remaining students who participated in this study were from two large cities with population in excess of 165,000. Fifty-two students tested were from large cities. The large city classes tested were predominately composed of students of one ethnic group. The cities
were retail trade centers with a broad diversity of manufacturing. The patrons of the school seldom commuted outside the city to work. One-hundred-twenty-two students tested were from rural communities. The remaining 166 students were from small cities. All subjects were from North Central Texas.

Maternal Occupational Status

Maternal occupational status outside the home was distinguished along a four-point continuum which ranged from maternal unemployment outside the home through full time employment away from the home. See Appendix A. Response A to question seven was considered partial absence of maternal supervision. Response B or C was considered minimum absence of maternal supervision. Response D was considered maximum absence of maternal supervision. No attempt was made to determine the type or quality of supervision given the child. Only the employment and the presence or absence of the mother in the home was considered.

Church Activity

The rating of church activity was distinguished as very active in the church, moderately active in the church, or inactive in any church. These categories were selected in preference to more definitive categories due to the reluctance of school officials to have mention of the church made. Had the classifications been more definitive
certain systems could not have accepted the questionnaire. One system refused to participate in the study unless the questionnaire was revised and excluded the question of church activity. All school officials involved in this study conceived of the church as being a teaching institution which might or might not affect the creativity of the child. Response A to question eight was considered very active in the church. See Appendix A. Response B was considered moderately active in a church. Response C was considered inactive in any church.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

STATISTICAL ANALYSIS OF DATA

The data obtained in this study were analyzed to determine whether any relationship existed between certain socio-cultural and community factors and the artistic creativity of the sixth grade students involved in this study. Statistical procedures and methods were followed as outlined in Chapter III. The results reported in this chapter are in terms of the hypotheses presented in Chapter I. Hypotheses one, two, and three were tested through the use of a three-dimensional analysis of variance. The $F$ statistic was applied to determine if variation existed. Duncan's New Multiple Range was the procedure used to indicate which factors were variant. Hypotheses four and five were tested through the use of simple analysis of variance. Duncan's New Multiple Range was used for comparison of mean differences between groups. Prior to processing the data, the .05 level of significance was arbitrarily decided upon as the basis for rejecting or accepting all hypotheses. The scores of the three creativity tests are treated separately in Chapter V, but for the purpose of accepting or rejecting hypotheses a composite score was used. When simple correlation was applied to the
composite score and the three independent test scores the resulting coefficients were as follows: the Barron-Welsh Art Scale correlation reached .528; the Torrance's Test of Creative Thinking, Figural Form A reached .513; the Paper Shapes reached .56231. The high multiple correlation coefficient, .9985, which resulted when the composite score and the three independent test scores were subjected to analysis, indicated the composite score was representative. All hypotheses were accepted or rejected on the basis of the composite score which was derived from the raw scores which had been converted to T scores.

Table I shows the means and standard deviations for the three tests used. A comparison of the mean test scores and standard deviations for the students used and for the norming groups on the tests indicates sixth grade students from Texas who participated in this study performed favorably, but with inconsistency on the Torrance Test. The "norms" for the Barron-Welsh Art Scale were obtained from a group of six- and eight-year-olds. Previous research indicated creative development reaches its peak for the elementary grades at the sixth grade level (1, 2, 3). This suggested the mean for the group used in this study should have been higher than the norm mean. Such was the case. On this test the adult-non-artists group mean score was twenty-two, and college art students averaged forty.
In comparison to the adult mean for non-artists, the study group mean reflects favorable creative likeness.

**TABLE I**

**COMPARISON OF MEANS AND STANDARD DEVIATIONS FOR THREE TESTS USED FOR TEST NORMS**

<table>
<thead>
<tr>
<th>Test</th>
<th>Present Study</th>
<th>Norming Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Barron-Welsh</td>
<td>26.09</td>
<td>12.15</td>
</tr>
<tr>
<td>Paper Shapes</td>
<td>2.06</td>
<td>.5</td>
</tr>
<tr>
<td>Torrance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td>19.36</td>
<td>7.61</td>
</tr>
<tr>
<td>Flexibility</td>
<td>15.14</td>
<td>5.52</td>
</tr>
<tr>
<td>Originality</td>
<td>19.61</td>
<td>9.25</td>
</tr>
<tr>
<td>Elaboration</td>
<td>79.59</td>
<td>35.13</td>
</tr>
</tbody>
</table>

*No figures are available since this test was scored in a revised manner recommended by the creator of the test.

The Torrance Test "norms" were established with sixth grade students in Pennsylvania as subjects. In fluency, originality and flexibility, the students in this study did not reach the norm of the Pennsylvania group; however, the differences in flexibility and fluency scores were not extreme. The elaboration score of the study group exceeded the Texas group norm by 40.39 points and exceeded all sixth grade norms (seven sets) reported by Torrance (4). As Table II indicates, the study group compared favorable with other sixth grade students from Texas. The mean scores of students involved in this study were higher than those reported by Torrance for other sixth grade Texans for three of the four abilities.
Findings Related to Hypotheses One, Two, and Three

The three hypotheses tested by a three-dimensional analysis of variance were

1. Regardless of the size of the community and ethnic group membership, sixth grade children from the higher socio-economic group will reflect greater creativity in art than will subjects of the lower socio-economic group.

2. Sixth grade Anglo-American children in all communities and both socio-economic groups will evidence greater creativity in art than will students of the Negro American or Latin American ethnic groups.

3. Sixth grade children of all ethnic groups (Anglo-American, Negro American, and Latin American) residing in large cities will evidence greater creativity in art than will subjects residing in small cities and rural communities. Results of the multiple analysis of variance are represented in Table III. See Table III.
TABLE III

ANALYSIS OF VARIANCE TABLE OF COMPOSITE CREATIVITY SCORE
RESULTS FOR THREE-DIMENSIONAL DESIGNS INVOLVING ETHNIC
GROUPS, COMMUNITY SIZES, AND SOCIO-ECONOMIC GROUPS

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Groups (E)</td>
<td>47.07000</td>
<td>2</td>
<td>23.53500</td>
<td>.89854</td>
<td>NS</td>
</tr>
<tr>
<td>Community Size Groups (CS)</td>
<td>43.14000</td>
<td>2</td>
<td>21.57000</td>
<td>.82352</td>
<td>NS</td>
</tr>
<tr>
<td>Socio-Economic Groups (SE)</td>
<td>7.53000</td>
<td>1</td>
<td>7.53000</td>
<td>.28748</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS</td>
<td>189.58000</td>
<td>4</td>
<td>47.39500</td>
<td>1.80950</td>
<td>NS</td>
</tr>
<tr>
<td>E-SE</td>
<td>7.09000</td>
<td>2</td>
<td>3.54500</td>
<td>.13534</td>
<td>NS</td>
</tr>
<tr>
<td>CS-SE</td>
<td>9.64000</td>
<td>2</td>
<td>4.82000</td>
<td>.18402</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS-SE</td>
<td>142.75000</td>
<td>4</td>
<td>35.68750</td>
<td>1.36252</td>
<td>NS</td>
</tr>
<tr>
<td>Within</td>
<td>1885.84000</td>
<td>72</td>
<td>26.19222</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2332.64000</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis one stated that children from the higher socio-economic group would reflect greater creativity in art than would children from the lower socio-economic group regardless of their ethnic group and community membership. An examination of the socio-economic data presented in Table III indicates the means of the two groups did not differ significantly. Hypothesis one must be rejected for the F of .28748 indicates children from the higher socio-economic group do not reflect greater creativity in art than the children from the lower socio-economic group.

Hypothesis two stated that Ango-American subjects in all communities and both socio-economic groups would evidence greater creativity in art than would subjects of
the Negro American or Latin American ethnic groups. An examination of the ethnic groups data in Table III indicates the means of the three groups did not differ significantly. Hypothesis two must be rejected for the $F$ of $0.89854$ indicates the three groups do not differ in their creativity in art due to their ethnic group membership.

Hypothesis three predicted sixth grade students of all ethnic groups (Anglo-American, Negro American, and Latin American) residing in large cities would reflect greater creativity in art than would subjects residing in small cities and rural communities. An examination of the community data in Table III reveals the means of the subjects residing in the three community size categories do not differ in creativity in art. Hypothesis three is rejected for the $F$ of $0.82352$ indicates the three groups do not differ. Sixth grade students of all ethnic groups who reside in large cities do not reflect greater creativity in art than do those subjects who lived in small cities and rural communities.

Table III further indicates there was no significant variance between the three variables ($E-CS-SE$). Neither was the difference between means significant when the variables ($E$, $CS$, and $SE$) were compared with all others. Because of the low value of $F$ which resulted when means between groups were compared, no interaction between ethnic group, socio-economic group and community size appears to affect the sixth grade student's creativity in art.
Table IV indicates no significant differences in means appeared when all eighteen groups were jointly subjected to multiple analysis of variance. See Table IV.

TABLE IV
ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN COMPOSITE CREATIVITY SCORES FOR EIGHTEEN GROUPS

<table>
<thead>
<tr>
<th>Kind Variation</th>
<th>Sum Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>446.8000</td>
<td>17</td>
<td>26.2823</td>
<td>1.0033</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>1885.9800</td>
<td>72</td>
<td>26.1941</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2332.7800</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Findings Related to Hypothesis Four

Table V shows the analysis of variance of mean differences in creativity for four groups which differ in maternal occupation outside the home. Hypothesis four predicted there would be no significant relationship found between maternal occupational status and the sixth grade student's creativity in art. Since the F ratio in Table V was 2.0838 (non-significant), the hypothesis was retained. No significant relationship was found between maternal occupational status and the sixth grade student's creativity in art.
TABLE V

ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN COMPOSITE CREATIVITY SCORES FOR FOUR GROUPS DIFFERING IN MATERNAL OCCUPATIONAL STATUS

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>233.8</td>
<td>3</td>
<td>77.9333</td>
<td>2.0838</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>10135.11</td>
<td>271</td>
<td>37.3989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10368.91</td>
<td>274</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Findings Related to Hypothesis Five

Hypothesis five stated no significant relationship would be found between church activity and the student's creativity in art at the sixth grade level. The F ratio of 1.0891 (See Table VI) was non-significant, indicating that church activity and creativity in art at the sixth grade level are not related. Therefore, null hypothesis five was accepted.

TABLE VI

ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN COMPOSITE CREATIVITY SCORES FOR THREE GROUPS AS RELATED TO CHURCH ACTIVITY

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>85.03</td>
<td>2</td>
<td>42.5150</td>
<td>1.0891</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>10383.52</td>
<td>266</td>
<td>39.0357</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10468.55</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Summary

In summation the null hypothesis was retained for hypotheses four and five. There was no relationship between a student's creativity in art and his mother's occupational status or his creativity and his church activity. Hypotheses one, two, and three were rejected. Hypothesis one predicted children from the higher socio-economic group would reflect greater creativity in art than would children from the lower socio-economic group regardless of the size of the community in which they lived and ethnic membership. The creativity scores of this group were not of sufficient statistical import for this hypothesis to be accepted. Hypothesis two predicted sixth grade Anglo-American children in all communities and both higher and lower socio-economic group would evidence greater creativity in art than would students of the Negro American or Latin American ethnic groups; however, the statistical treatment indicated this was not the case. Hypothesis three predicted sixth grade students of the ethnic groups investigated who lived in large cities would evidence greater creativity in art than students living in small and rural communities. Statistical results indicated no significant differences in creativity in art appeared to exist between children of this age regardless of where they lived.
CHAPTER BIBLIOGRAPHY


CHAPTER V

PRESENTATION AND INTERPRETATION OF INDIVIDUAL TEST DATA AND DISCUSSION

Chapter V is divided into four major sections. The first section is an introduction to non-hypothesized data which each test used in this study yielded. Section two is concerned with the statistical analysis of the non-hypothesized data, and a discussion of information pertinent to each specific test. Section three is concerned with the discussion of the hypothesized data presented in Chapter IV and the relationship of the hypothesized data to the data based on the separate instruments used. Section four is a synthesis of the material presented in the previous sections.

Introduction to Data Based on the Separate Instruments

All the hypotheses of this study were accepted or rejected on the significance of a composite score which represented the student's work on three separate tests of creativeness in art. In an effort to use the data in a more comprehensive way each test was also analyzed separately to determine if discrepancy existed. Sets of individual test scores were subject to the same statistical analysis as applied to the composite score. In this manner, each
hypothesis tested by the composite score was also tested on each individual test. The individual results are presented in the following section. For clarity and cohesiveness to the study the presentation is made in terms of the hypotheses as they related to the composite scores.

Statistical Analysis of Data Based on the Separate Instruments

Barron-Welsh Art Scale

The Barron-Welsh Art Scale was scored according to the scale set up by the test author. The raw score was obtained by placing the appropriate template over the completed answer sheet and counting the number of marks that appeared in the openings of the template. Tests which required value judgements were not used in this study.

When the three-dimensional analysis of variance was applied to hypotheses one, two, and three, having the Barron-Welsh Art Scale score as the dependent variable, no significant differences were revealed. See Table VII. In Table VII, the blocks represent the socio-economic groups. Hypothesis one stated that regardless of the size of the community and the ethnic group membership, sixth grade students from the higher socio-economic group would express greater creativity in art than would children of the lower socio-economic group. The low value of $F$ for the socio-economic group comparisons indicated the groups did not differ in creativity in art as a function of their
socio-economic classification. Hypothesis two stated that sixth grade Anglo-American children in communities of all sizes and both socio-economic groups would evidence greater creativity in art than would student of the Negro American or Latin American ethnic groups. An examination of the $F$ ratio for the three ethnic groups data indicates a significant relationship does not exist between the student's Barron-Welsh creativity score and his ethnic group membership.

**TABLE VII**

**ANALYSIS OF VARIANCE TABLE OF RESULTS FOR BARRON-WELSH ART SCALE SCORES FOR THREE-DIMENSIONAL DESIGN INVOLVING ETHNIC GROUPS, COMMUNITY SIZES AND SOCIO-ECONOMIC GROUPS**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>$F$</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Groups (E)</td>
<td>29.15000</td>
<td>2</td>
<td>14.57500</td>
<td>.17310</td>
<td>NS</td>
</tr>
<tr>
<td>Community Size Groups (CS)</td>
<td>469.72000</td>
<td>2</td>
<td>234.89000</td>
<td>2.78974</td>
<td>NS</td>
</tr>
<tr>
<td>Socio-Economic Groups (SE)</td>
<td>9.64000</td>
<td>1</td>
<td>9.64000</td>
<td>.11449</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS</td>
<td>473.18000</td>
<td>4</td>
<td>118.29500</td>
<td>1.40496</td>
<td>NS</td>
</tr>
<tr>
<td>E-SE</td>
<td>136.59000</td>
<td>2</td>
<td>68.29500</td>
<td>.81112</td>
<td>NS</td>
</tr>
<tr>
<td>CS-SE</td>
<td>369.47000</td>
<td>2</td>
<td>184.73500</td>
<td>2.19406</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS-SE</td>
<td>427.07000</td>
<td>4</td>
<td>106.76750</td>
<td>1.26805</td>
<td>NS</td>
</tr>
<tr>
<td>Within</td>
<td>6062.24000</td>
<td>72</td>
<td>84.19777</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7977.12000</td>
<td>89</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

Hypothesis three predicted sixth grade students, of all ethnic groups, residing in a large city would evidence greater creativity in art than would students living in small cities and rural communities. A non-significant $F$ of
2.78974 indicates that community size was not a factor in the creative development in art. Hypothesis three was rejected for no significant differences in scores on the Barron-Welsh Art Scale were noted.

Table VII further indicated there was no significant relationship between the ethnic groups, community sizes, and socio-economic groups. Neither was the difference between means significant when the three variables (E, CS, and SE) were compared one with all others. Because of the non-significant value of $F$ which resulted when the means between groups were compared, no interaction between ethnic group, socio-economic group, and community size appeared to affect the sixth grade students' creativity in art as reflected by his Barron-Welsh Art Scale score. Table VIII indicates no significant differences in means appeared when all eighteen groups were jointly subjected to multiple analysis of variance. See Table VIII.

**TABLE VIII**

**ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN BARRON-WELSH ART SCALE SCORES FOR EIGHTEEN GROUPS**

<table>
<thead>
<tr>
<th>Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>$F$</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>1914.8800</td>
<td>17</td>
<td>112.6400</td>
<td>1.3377</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>6062.4000</td>
<td>72</td>
<td>84.2005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7977.3200</td>
<td>89</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
Table IX graphically depicts the analysis of variance of mean differences in Barron-Welsh Art Scale scores for four groups which differ in maternal occupational status outside the home. It was predicted by hypothesis four, no significant relationship would be found between maternal occupational status (see Chapter I for description) and the sixth grade student's creativity in art. Since the $F$ ratio did not reach a magnitude great enough to indicate mean differences were significant, the null hypothesis was accepted.

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>$F$</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>238,4400</td>
<td>3</td>
<td>79.4800</td>
<td>.7779</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>27637.2500</td>
<td>271</td>
<td>102.1669</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27925.6900</td>
<td>274</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Apparently no significant relationship exists between maternal occupational status and the sixth grade student's creativity in art as measured by the Barron-Welsh Art Scale. See Table IX. Furthermore, when the mean scores of each maternal occupational category were compared with the mean scores of all other maternal occupational categories, no significant differences became apparent. Differences in
maternal occupational status were not related to the sixth grade student's creativity in art as reflected by the Barron-Welsh Art Scale. This finding is in agreement with the finding based on the use of a composite score of creativity.

Hypothesis five stated no significant relationship would be found between church activity and the sixth grade child's creativity in art. See Chapter I for descriptions of church activity levels. The low $F$ ratio of .1038 was non-significant, indicating church activity and creativity in art at the sixth grade level are not related. See Table X.

### Table X

**ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN BARRON-WELSH ART SCALE SCORES FOR THREE GROUPS DIFFERING IN CHURCH ACTIVITY**

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>$F$</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>21,4200</td>
<td>2</td>
<td>10.7100</td>
<td>.1038</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>27433.3600</td>
<td>266</td>
<td>103.1329</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27925.6900</td>
<td>274</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The null hypothesis was accepted on the basis of Barron-Welsh scores. When the mean scores of each church activity group category was compared with the mean creativity scores of all other church activity categories, no significant differences were found in scores on the Barron-Welsh Art Scale.
Paper Shapes

The Paper Shapes instrument on artistic creativity was judged by a panel of five persons experienced in art education. It was scored in the revised manner recommended by the author of the test (3). The judges included an art supervisor in a large city school system, a college art teacher, a practicing artist who is head of a gallery and art school, a cultural coordinator for a large city public school system, and a doctoral student in art. All judges had experience in teaching art to elementary children. Each judge independently rated each test on a three-point scale, with a scoring sequence as follows: three points was considered high in creativity; two, average in creativity; one, below average in creativity. High Creative was defined as a design in which the use of lines, colors, and shapes achieved an expression which was unique and individual; it was imaginative; it was pleasing to the eye; it incorporated the principles of design: balance, harmony, relatedness of parts, and emphasis. After the judges had rated the test, all scores were totaled and divided by five in order to obtain the average of each child. The inter-reliability of the judges' ratings was determined by a simple correlation which was found to be .71.

When the three-dimensional analysis of variance was applied to hypotheses one, two, and three, having the Paper Shapes score as the dependent variable, no significant
differences were discovered. This was in complete agreement with the findings resulting from the use of Barron-Welsh. See Table XI. Hypothesis one stated regardless of the size of the community and ethnic group membership, sixth grade children from the higher socio-economic group would reflect greater creativity in art than would children of the lower socio-economic group. The hypothesis is rejected due to the non-significant value of $F$ for socio-economic groups comparisons. A sixth grade child's creativity in art (as measured by Paper Shapes) does not appear to be related to his socio-economic group membership as defined in this study. Hypothesis two stated that sixth grade Anglo-American children in all communities and both socio-economic groups would evidence greater creativity in art than would students of the Negro American or Latin American ethnic groups. An examination of Table XI reveals that a significant relationship does not exist. Hypothesis two is rejected for sixth grade Anglo-American children involved in this study were not found to be more creative as measured by Paper Shapes than sixth grade Negro American or Latin American children. Hypothesis three predicted that sixth grade children of all ethnic groups, and both socio-economic groups, residing in a large city would evidence greater creativity in art than would subjects living in small cities and rural communities. Table XI indicates community size, showed a non-significant $F$ of .35849 when variation in creativity in art as result of
community size was subjected to analysis of variance.
Hypothesis three was rejected for differences in creativity in art scores (as measured by Paper Shapes) do not appear to be related to the size of the community in which the child lives.

**TABLE XI**

**ANALYSIS OF VARIANCE TABLE OF RESULTS FOR PAPER SHAPES TEST SCORES FOR THREE-DIMENSIONAL DESIGN INVOLVING ETHNIC GROUPS, COMMUNITY SIZES, AND SOCIO-ECONOMIC GROUPS**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Groups (E)</td>
<td>108.09000</td>
<td>2</td>
<td>54.04500</td>
<td>.81941</td>
<td>NS</td>
</tr>
<tr>
<td>Community Size Groups (CS)</td>
<td>47.29000</td>
<td>2</td>
<td>23.64500</td>
<td>.35849</td>
<td>NS</td>
</tr>
<tr>
<td>Socio-Economic Groups (SE)</td>
<td>21.51000</td>
<td>1</td>
<td>21.51000</td>
<td>.32612</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS</td>
<td>603.38000</td>
<td>4</td>
<td>150.84500</td>
<td>2.28707</td>
<td>NS</td>
</tr>
<tr>
<td>E-SE</td>
<td>69.67000</td>
<td>2</td>
<td>34.83500</td>
<td>.52815</td>
<td>NS</td>
</tr>
<tr>
<td>CS-SE</td>
<td>92.07000</td>
<td>2</td>
<td>46.03500</td>
<td>.69797</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS-SE</td>
<td>343.15000</td>
<td>4</td>
<td>85.78750</td>
<td>1.30068</td>
<td>NS</td>
</tr>
<tr>
<td>Within</td>
<td>4748.80000</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6033.9600</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table XI further indicates there was no significant variance between the three variables (E, CS, SE). Neither was the difference between means significant when ethnic, community size, and socio-economic groups were compared one with all others. Because of the non-significant value of F which resulted when means between groups were compared, no interaction between ethnic group, socio-economic group, and
community size appeared to affect the sixth grade students creativity in art as reflected by his Paper Shapes score. Table XII indicates no significant differences in means were apparent when all eighteen groups were jointly subjected to multiple analysis of variance.

**TABLE XII**

**ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN PAPER SHAPES CREATIVITY SCORES FOR EIGHTEEN GROUPS**

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>1285.1600</td>
<td>17</td>
<td>75.5976</td>
<td>1.1461</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>4748.8000</td>
<td>72</td>
<td>65.9555</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6033.9600</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis four predicted no significant relationship would be found between maternal occupational status and the sixth grade student's creativity in art. Examination of Table XIII indicates the four groups which differed in maternal employment status did not differ significantly in creativity, as measured by the Paper Shapes. The low value of $F$ indicates that differences in Paper Shapes creativity scores are not significant. See Table XIII. When the mean scores of each maternal occupational category were compared with the mean scores of all other maternal occupational categories, no significant differences were detected.
This finding was in agreement with the finding based on the use of the composite score of creativity.

TABLE XIII

ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN PAPER SHAPES SCORES FOR FOUR GROUPS DIFFERING IN MATERNAL OCCUPATIONAL STATUS

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>186.1100</td>
<td>3</td>
<td>62.0366</td>
<td>.7206</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>23328.9100</td>
<td>271</td>
<td>86.0845</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23515.0200</td>
<td>274</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hypothesis five predicted no significant relationship would be found to exist between church activity and the student's creativity in art at the sixth grade level. The F value of 1.3306 (see Table XIV) was non-significant. This indicated church activity and creativity in art, as measured by the Paper Shapes, are not related at the sixth grade level. The null hypothesis is retained. When each of the Paper Shapes mean scores (of the three church activity groups) was compared each with all others to determine if a significant relationship existed between any two groups, no significant relationship was found to exist between any two groups in this study.
### TABLE XIV

ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN PAPER SHAPES SCORES FOR THREE GROUPS DIFFERING IN CHURCH ACTIVITY

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>326.6300</td>
<td>2</td>
<td>163.3150</td>
<td>1.8306</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>23730.4600</td>
<td>266</td>
<td>89.2122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24057.0900</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Two interesting observations were made by the researcher while administering this test. Neither Anglo-American nor Negro American students expressed any desire or interest in trading pieces of the tests with other students. In every group tested which raised the question of trading pieces, a Latin American raised the question or asked permission to trade. In the large city group of Latin American children, many of the group attempted to trade pieces despite the fact they were told this was not permissible. This could suggest cooperative group work might be successful with sixth grade Latin American children. The other interesting observation concerned working in three-dimensions. The Anglo-American and Negro American students showed little inclination to create three-dimensional designs. Seven per cent of the Anglo-Americans produced three-dimensional products. Eight per cent of the Negro Americans produced three-dimensional products. In contrast, thirty-eight...
per cent of the Latin American subjects produced three-dimensional products. This could suggest that Latin Americans work or think more in terms of three-dimensions than do the other groups in this study.

Torrance's Test of Creative Thinking, Figural Form A

The Torrance Tests used to test hypotheses one, two, and three were scored by the Personnel Press Scoring Service. This service was recommended by the author of the test. The remainder of the tests were scored by the researcher and an assistant who had previously worked together scoring material used in the pilot study. Both are teachers and followed the training procedures recommended by Torrance (10). Torrance states, "The mean Pearson product-moment coefficients between the scoring of trained scorers and untrained teachers for the figural tests are: fluency, .96; originality, .86; and elaboration, .91" (10, p. 8). Following this statement he adds, "... it is not necessary to have special training in scoring these tests to assure reliable results. What does appear to be necessary is that the scorer read and follow the scoring guide as precisely as possible, accepting the standards of the guide as a basis for judgement" (10, p. 8).

When the three-dimensional analysis of variance was applied to hypotheses one, two, and three, having the Torrance Test of Creative Thinking, Figural Form A score as the dependent variable, two significant differences
were revealed. See Table XV. Hypothesis one stated that regardless of the size of the community and the ethnic group membership, sixth grade students from the higher socio-economic group would express greater creativity in art than would children of the lower socio-economic group.

TABLE XV
ANALYSIS OF VARIANCE TABLE OF RESULTS FOR TORRANCE'S TEST OF CREATIVE THINKING, FIGURAL FORM A SCORES FOR A THREE-DIMENSIONAL DESIGN INVOLVING ETHNIC GROUPS, COMMUNITY SIZES, AND SOCIO-ECONOMIC GROUPS

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Groups (E)</td>
<td>958.68000</td>
<td>2</td>
<td>479.34000</td>
<td>5.24414</td>
<td>.01</td>
</tr>
<tr>
<td>Community Size Groups (CS)</td>
<td>267.27000</td>
<td>2</td>
<td>133.63500</td>
<td>1.46201</td>
<td>NS</td>
</tr>
<tr>
<td>Socio-Economic Groups (SE)</td>
<td>46.23000</td>
<td>1</td>
<td>46.23000</td>
<td>.50577</td>
<td>NS</td>
</tr>
<tr>
<td>E-CS</td>
<td>378.05000</td>
<td>4</td>
<td>94.51250</td>
<td>1.03399</td>
<td>NS</td>
</tr>
<tr>
<td>E-SE</td>
<td>165.29000</td>
<td>2</td>
<td>82.64500</td>
<td>.90416</td>
<td>NS</td>
</tr>
<tr>
<td>CS-SE</td>
<td>658.19000</td>
<td>2</td>
<td>329.09500</td>
<td>3.60061</td>
<td>.05</td>
</tr>
<tr>
<td>E-CS-SE</td>
<td>738.93000</td>
<td>4</td>
<td>184.73250</td>
<td>2.02103</td>
<td>NS</td>
</tr>
<tr>
<td>Within</td>
<td>6581.15000</td>
<td>72</td>
<td>91.40486</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9793.79000</td>
<td>89</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

An examination of the socio-economic groups data presented in Table XV indicates the means of the two groups do not differ significantly. Hypothesis one must be rejected for the low value of F indicates children from the higher socio-economic group do not reflect greater creativity in art than do the children from the lower socio-economic group. Hypothesis two stated that sixth grade Anglo-American
children in communities of all sizes and both socio-economic groups would evidence greater creativity in art than would the Negro American or Latin American ethnic groups. In Table XV, the E represent the ethnic groups. An examination of the F ratio, 5.24414, for the ethnic groups indicates a significant relationship does exist between the student's score (as measured by Torrance) and his ethnic group membership. Hypothesis two must be accepted; the three groups differ in creativity as a function of their ethnic group membership.

The variation among means was tested for statistical significance using a combined variance estimate. See Table XVI. In Table XVI, NA represents the Negro American ethnic groups, AA represents the Anglo-American ethnic group, and LA represents the Latin American ethnic group. At the sixth grade level, Anglo-Americans were significantly more creative than Negro Americans at the .01 level of significance; Latin Americans were significantly more creative than the Negro Americans at the .05 level. No significant difference in creativity was noted between the Latin American and Anglo-American subjects. According to findings based on Torrance scores, creativity in art (at the sixth grade level) is a function of the student's ethnic group. With regard to creativity, both Anglo-American and Latin American children have an advantage over Negro American children; however,
when the Anglo-American and Latin Americans were compared, 
they evidenced no significant difference in creativity in art.

**TABLE XVI**

**ANALYSIS OF VARIANCE TABLE OF RESULTS FOR TORRANCE'S TEST**
**OF CREATIVE THINKING, FIGURAL FORM A SCORES FOR**
**THREE ETHNIC GROUPS**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Comparisons</th>
<th>df</th>
<th>T</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA - AA</td>
<td>42.8750 - 50.5666</td>
<td>59</td>
<td>-3.11588</td>
<td>.01</td>
</tr>
<tr>
<td>NA - LA</td>
<td>42.8750 - 48.6083</td>
<td>59</td>
<td>-2.32256</td>
<td>.05</td>
</tr>
<tr>
<td>AA - LA</td>
<td>50.5666 - 48.6083</td>
<td>59</td>
<td>.79331</td>
<td>NS</td>
</tr>
</tbody>
</table>

Hypothesis three predicted sixth grade students of all 
ethnic groups residing in a large city would evidence greater 
creativity in art than would students living in small cities 
and rural communities. An examination of the community size 
data presented in Table XV indicates the Torrance scores 
means of the three community size groups do not differ 
significantly. Hypothesis three must be rejected for the F of 1.46201 is non-significant. This indicates the three 
groups do not differ significantly in Torrance creativity 
scores as a function of the size of the community which they 
live.

Table XV further indicates no significant variance 
between the ethnic, community size, and socio-economic groups 
were indicated. When the means of the ethnic, community 
size, and socio-economic groups were compared one with all 
others, one significant interaction was detected.
The student's creativity in art was indicated to be a function of the interaction of the size of the community in which he lived and his socio-economic group membership.

Duncan's New Multiple Range determined the direction and which groups were affected by the size of community and socio-economic interaction. See Table XVII. A detailed discussion of the findings revealed by this technique follows in the chapter discussion. Socio-economic group membership, *per se*, did not appear to have an effect on sixth grade students' creativity. Comparisons showing significantly more creative and less creative performance were equal. Although the size of the community in which a child lived, *per se*, was not shown to significantly affect the child's creativity a trend was noted. Rural communities accounted for 47 per cent of the significantly more creative scores and 5 per cent of the significantly less creative scores. Small cities accounted for 37 per cent of the significantly more creative scores and 53 per cent of the significantly less creative scores. Large cities accounted for 16 per cent of the significantly more creative scores and 42 per cent of the significantly less creative scores.

Concerning the interaction of community size and socio-economic status, the results were as follows:

1. In the large city lower socio-economic category, one instance of significantly less creative performance was noted.
2. In the large city higher socio-economic category, two instances of significantly more creative performance and seven instances of significantly less creative performance was noted.

3. In the small city lower socio-economic category, three instances of more creative performance and eight instances of significantly less creative performance were noted.

4. In the small city higher socio-economic category, four instances of more creative performance and two instances of significantly less creative performance were noted.

5. In the rural community lower socio-economic category, five instances of significantly more creative performance and three instances of significantly less creative performance were noted.

6. In the rural community higher socio-economic category, four instances of significantly more creative performance and no instance of significantly less creative performance were noted.

7. The rural community lower socio-economic groups evidenced the greatest number, five, of significantly greater creative performances.

8. The small city lower socio-economic groups evidenced the greatest number, eight, of significantly less creative performances. In summation, the community size in which the child lived, per se, and his socio-economic group,
per se, did not appear to affect the creativity of the sixth grade child. However, the interaction of the two did appear to affect certain socio-economic groups in specific community sizes. A trend was noted which suggested higher socio-economic group membership in large cities was associated with significantly less creative performance. In the small city lower socio-economic category children tended to be significantly less creative. In the rural community higher socio-economic category, a strong trend toward more creative performance in art was noted.

Duncan's New Multiple Range detected differences which were significant at the .05 level. Duncan's statistic compared each of the original eighteen groups with all other groups, and revealed thirteen significant differences from a total of 153 comparisons. See Table XVII. In Table XVII, the numbers represent the following groups: 2—small city, lower socio-economic group Negro Americans; 4—large city, lower socio-economic group Latin Americans; 8—small city, lower socio-economic group Anglo-Americans; 9—rural community, lower socio-economic group Anglo-Americans; 11—small city, higher socio-economic group Negro Americans; 13—large city, higher socio-economic group Latin Americans; 15—rural community, higher socio-economic group Latin Americans; 16—large city, higher socio-economic group Anglo-Americans; and 17—small city, higher socio-economic group Anglo-Americans.
An examination of Table XVII revealed the following findings:

1. Lower socio-economic group Anglo-American sixth grade students who live in small cities are more creative (according to Torrance scores) than are higher socio-economic group Latin American sixth grade students living in a large city.

2. Lower socio-economic group Anglo-Americans who live in small cities are more creative (according to Torrance) than are lower socio-economic group Negro Americans living in small cities.

3. Lower socio-economic group Anglo-Americans who live in small cities are more creative (according to Torrance)
than are lower socio-economic group Latin Americans who live in a large city.

4. Higher socio-economic group Anglo-American sixth graders who live in small cities are more creative (according to Torrance) than are higher socio-economic group Latin Americans who live in a large city.

5. Higher socio-economic group Anglo-American sixth graders who live in small cities are more creative (according to Torrance) than are lower socio-economic group Negro Americans who live in small cities.

6. Higher socio-economic group Negro Americans who live in small cities are more creative (according to Torrance) than are higher socio-economic group Latin Americans who live in a large city.

7. Higher socio-economic group Negro Americans who live in small cities are more creative (according to Torrance) than are lower socio-economic group Negro American sixth grade students who live in small cities.

8. Lower socio-economic group Anglo-Americans who live in rural communities are more creative (according to Torrance) than are higher socio-economic group Latin Americans who live in a large city.

9. Lower socio-economic group Anglo-American sixth grade students who live in rural communities are more creative (according to Torrance scores) than are lower socio-economic group Negro American sixth grade students who live in small cities.
10. Higher socio-economic group Anglo-American sixth grade students who live in a large city are more creative (according to Torrance scores) than are higher socio-economic group Latin American sixth grade students who live in a large city.

11. Higher socio-economic group Anglo-American sixth grade students who live in a large city are more creative (according to Torrance scores) than are lower socio-economic group Negro American sixth grade students who live in small cities.

12. Higher socio-economic group Latin American sixth grade students who live in rural communities are more creative (according to Torrance scores) than are lower socio-economic group Negro Americans who live in rural communities.

13. Higher socio-economic group Latin American sixth grade students who live in rural communities are more creative (according to Torrance scores) than are lower socio-economic group Negro American sixth grade students who live in small cities.

Table XVIII depicts the analysis of variance of mean differences in Torrance's creativity scores for four groups which differ in maternal occupational status. It was hypothesized there would be no significant relationship found between maternal occupational status and the sixth grade student's creativity in art. The $F$ ratio of 2.1146
(non-significant) indicates hypothesis four should be retained for there is no apparent relationship found between maternal occupational status outside the home and the sixth grade student's creativity, as measured by Torrance.

**TABLE XVIII**

**ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN TORRANCE CREATIVITY SCORES FOR FOUR GROUPS DIFFERING IN MATERNAL OCCUPATIONAL STATUS**

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>648.5100</td>
<td>3</td>
<td>216.1700</td>
<td>2.1146</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>27703.0200</td>
<td>271</td>
<td>102.2251</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28351.5300</td>
<td>274</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

Hypothesis five stated no significant relationship would be found to exist between church activity and the student's creativity in art at the sixth grade level. Table XIX depicts the results of an analysis of variance of mean differences using Torrance scores. The F of .7046 was non-significant, indicating that church activity and creativity in art (as measured by Torrance's Test of Creative Thinking, Figural Form A) are not related at the sixth grade level.
TABLE XIX
ANALYSIS OF VARIANCE OF MEAN DIFFERENCES IN TORRANCE CREATIVITY SCORES FOR THREE GROUPS AS RELATED TO CHURCH ACTIVITY

<table>
<thead>
<tr>
<th>Kind of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between means</td>
<td>143,6100</td>
<td>2</td>
<td>71.8050</td>
<td>.7046</td>
<td>NS</td>
</tr>
<tr>
<td>Within means</td>
<td>27107.4400</td>
<td>266</td>
<td>101.9076</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27251.0500</td>
<td>268</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

The scores for each of the three tests used in this study, the Barron-Welsh Art Scale, the Paper Shapes, and Torrance's Test of Creative Thinking, Figural Form A, were separately subjected to multiple analysis of variance, Duncan's New Multiple Range, and simple analysis of variance. These were the techniques which were applied to the composite score of creativity. The findings based on the separate instruments and the findings based on the composite score were in agreement concerning four hypotheses. Torrance's test was not in agreement with all other instruments with regard to hypothesis two. Each hypothesis was tested using the scores of the individual tests and the composite score, yielding a total of twenty hypotheses. Due to the fact that each test was selected to measure a different facet of the creative individual, it is not surprising one finding would be divergent.
Hypotheses One, Two, and Three

Findings based on each testing instrument's scores and the findings based on the composite score all led to the rejection of hypotheses one and three. Hypothesis one was rejected; students did not differ in creativity in art (as measured by any single test used in this research or by a composite score based on all tests used) as a function of socio-economic group membership. Hypothesis three was rejected; students did not differ in creativity in art (as measured by any single test used in this research or by a composite score based on all tests used) as a function of the size of the community in which they lived. The Barron-Welsh Art Scale results, the Paper Shapes results, and the composite scores of creativity results rejected hypothesis two; students did not differ in creativity in art as a function of their ethnic group membership. The results of Torrance's Test of Creative Thinking, Figural Form A, accepted hypothesis two; students differ in creativity in art as a function of their ethnic group membership.

When Torrance scores were compared using multiple analysis of variance and Duncan's New Multiple Range, the Anglo-American sixth grader appears to have an advantage over other ethnic groups. Creativity in art requires the student to use divergent thinking. Conformity and making use of the tried method are not conducive to creative development. These findings suggest the Anglo-American child may be
secure enough of his position in his culture that he dares to be different. This is in agreement with other research (3, 11). In a study conducted in California it was found that negroes, Jews, Mexicans, and other minority groups tended to be more conforming than members of major racial-religious groups (11). It is a possibility that minority ethnic groups in their desire to be accepted in the culture may conform to the extent that their creative development is thwarted. "Since high conformity is contrary to those conditions necessary for creativity, it would seem logical for such groups to rate low in creativity" (3, p. 41).

Although hypothesis one was rejected, in the few instances where ethnic groups did differ significantly in their creativity in art, it was unanimously in favor of the Anglo-American child. This was in agreement with Ford's findings (3).

On the basis of applying Duncan's New Multiple Range to Torrance scores of creativity, the Anglo-American sixth graders were found significantly more creative in all community size categories and both socio-economic categories with no apparent pattern emerging. The small city lower socio-economic group Negro Americans appeared to be at the greatest disadvantage in creative development in art. When compared with all other groups, they were significantly less creative in 47 per cent of the comparisons. This particular group was never significantly more creative
than any other group. This appears to be a function of the socio-economic group membership in that higher socio-economic group Negro Americans who lived in small cities were found to be significantly more creative in 12 per cent of the comparisons, and were never found to be significantly less creative than any other group. When compared with all other groups, the higher socio-economic group Latin Americans residing in large cities were less creative in 30 per cent of the comparisons. Lower socio-economic group Latin Americans living in large cities were more creative in 6 per cent of the comparisons and less creative in 6 per cent of the comparisons, indicating no apparent influence related to ethnic group or community size.

Concerning socio-economic group membership, the results of comparing the two groups were as follows:

1. Higher socio-economic group students were significantly more creative in art in ten comparisons and significantly less creative in nine comparisons.

2. Lower socio-economic group students were significantly more creative in art in nine comparisons and significantly less creative in ten comparisons.

It is not surprising neither socio-economic group reflected higher creativity in art scores for a case may be argued for either group. McKinley believes the higher socio-economic group member lives a very controlled life. He states, "The upper class appears to exercise stronger authority over
children (especially into adulthood) because compliance brings emotional and material rewards" (7, p. 24). This same attitude has been stated with reference to children of the lower socio-economic group. The lower socio-economic family may suffer anxiety because of their position in society, and for this reason demand rigid conformity from their children. This would protect the child from negative sanctions and could possibly enhance the family position. Children of low socio-economic status have strong external restraints which McKinley defines as "the degrees to which behavior is required to conform to the demands of expectations of others in the external world" (7, p. 60). Neither socio-economic group reflected differences extensive enough to indicate one group offered advantages to the child's creativity in art which the other did not. As discussed above, higher socio-economic group Negro Americans and Latin Americans living in large cities were found to be significantly less creative. Since the society values convergent thinking and conformity, it is a possibility that the higher socio-economic status Negro American and Latin American have achieved their status at a cost to their creativity in art. Other possibilities are that the city may not be conducive to their creative growth, or factors not considered in this study may deter creative development in art. Though trends were noted strong consistencies were lacking, therefore analysis of variance revealed no differences.
Concerning the size of the community in which the child lived, the results were as follows:

1. Rural communities accounted for 47 per cent of the significantly more creative scores and 5 per cent of the significantly less creative scores.

2. Small cities accounted for 37 per cent of the significantly more creative scores and 53 per cent of the significantly less creative scores.

3. Large cities accounted for 16 per cent of the significantly more creative scores and 42 per cent of the significantly less creative scores.

Large cities and small cities did not appear to greatly influence the student's creativity in art. Considering the fact that museums, special art teachers, and cultural programs, all of which are allegedly concerned with keeping creativity growing, center in cities, it is suggestive that perhaps the services offered are not being utilized or that the approach from these groups is not fruitful. The very nature of the city may make the creative programs available inaccessible to many elementary students. The students may not be informed concerning the opportunities available to them. The only community size which possibly was conducive to creative growth in art was the rural community. Previous research found eighth grade children from small cities to be more creative than children from either rural communities or large cities (3).
Hypothesis Four

Null hypothesis four was retained; students did not differ in creativity in art (as measured by any single test used in this research or by a composite score based on all tests used) as a function of maternal occupational status. Previous maternal employment research has not been concerned with the child's creativity in art or creativity in general. Emphasis has been on its relationship to achievement, adjustment, and delinquency (1, 2, 4, 6, 9). Renier found children of working mothers (who were not present when the child returned from school) had a pervasive feeling of isolation (8). This feeling could be associated with insecurity, an inhibiting factor to the child's creativity. In an attempt to conform or to be accepted by the group, the child may attempt to do what he feels is expected by the group rather than to dare be different or creative. On the other hand, Haimowitz (5) suggests the feeling of "marginality" or not being of the group might free one to be more creative. Certainly further investigation could consider the kind and quality of supervision of the child when the mother is at work away from the home.

Hypothesis Five

Null hypothesis five was retained; students did not differ in creativity in art (as measured by any single test used in this research or by a composite score based on all tests used) as a function of their activity in a church.
The support of the church group could possibly contribute to the general security of the child and thus give him the self-assurance necessary to be creative. As a teaching institution the church does influence its younger attendants in many ways. It is possible the ungraded experience of arts and crafts which are offered in Sunday school and vacation church schools might have had a positive influence on the child's creativity. This hypothesis presented problems with regard to locating school systems in which to conduct the research. The child's response to question eight on the questionnaire (see Appendix A) furnished the data necessary for statistical analysis. Administrators of school systems were reluctant to present a questionnaire which had a question which pertained to religion. The categories had been left quite broad in anticipation of resistance on the part of school administrators, but some objection was still expressed. When each group was compared with all others, no significant mean differences were indicated. No suggestion was indicated that given more cases differences might be significant.

As mentioned previously, no research appears to have dealt with the child's creativity in art and its relationship to his church involvement. The need to know which institutions affect the child's creative development and to what extent is basic.

Summary

An attempt has been made in this chapter to apply the results of each test used in this study to each hypothesis.
set forth in Chapter I, to interpret the findings resulting from this, and to relate the three tests to the composite score used to represent the creativity of the child. Each test used measured a different factor considered by authorities to be essential to or present in creative children. Statistical analysis was applied to the data based on scores of the Barron-Welsh Art Scale, Torrance's Test of Creative Thinking, Figural Form A, and Paper Shapes.

In summation, results of each individual test resulted in the unanimous rejection of hypotheses one and three and the unanimous acceptance of null hypotheses four and five. These findings were identical with those based on the composite score. The results of the Barron-Welsh Art Scale scores, the Paper Shapes scores and the composite creativity scores rejected hypothesis two. The findings based on the use of Torrance's Test of Creative Thinking, Figural Form A accepted hypothesis two. Though the tests varied in form, content, and what they purported to measure, no significant variation was found when creativity was considered a function of community size in which the child lived, socio-economic group membership, maternal occupational status or church activity. The question of the child's creativity being a function of his ethnic group membership is open to question for Torrance's test resulted in the acceptance of hypothesis two. Conversely, the Barron-Welsh Art Scale and the Paper Shapes rejected hypothesis two.
CHAPTER BIBLIOGRAPHY


CHAPTER VI

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was designed with the intent of determining the relationship between certain socio-cultural and community factors and selected sixth grade students' creativity in art. A questionnaire was used to determine the following socio-economic and community factors for each of the students: socio-economic group, ethnic group, community size, maternal occupational status, and church activity. A score of creativity for each student was derived from a battery of three tests: the Barron-Welsh Art Scale, the Torrance's Test of Creative Thinking, Figural Form A, and the Paper Shapes test. All findings and conclusions in Chapter VI relate to the findings on the composite score from these tests. Findings on the individual tests are reported in Chapter V.

The students who participated were enrolled in fourteen public elementary schools in North Texas and Central Texas during the 1968-1969 school year. The 294 students represented three ethnic groups: Latin American, Anglo-American, and Negro American; three community sizes:
large city, small city, and rural community; and two socio-economic groups: higher and lower. The entire population was used in the study of the relationship of maternal occupational status and church activity to creativity in art. Ninety subjects were used in the study of the relationship of ethnic group, community size, and socio-economic group membership to creativity in art.

Five hypotheses were investigated in this study.

1. Regardless of the size of the community and ethnic group membership, sixth grade children from the higher socio-economic group will reflect greater creativity in art than will subjects of the lower socio-economic group.

2. Sixth grade Anglo-American children in all communities and both socio-economic groups will evidence greater creativity in art than will students of the Negro American or Latin American ethnic groups.

3. Sixth grade children of all ethnic groups (Anglo-American, Negro American and Latin American) residing in large cities will evidence greater creativity in art than will subjects residing in small cities or rural communities.

4. No significant relationship will be found between maternal occupational status and the sixth grade student's creativity in art.

5. No significant relationship will be found between church activity and the sixth grade student's creativity in art at the sixth grade level.
A test of hypothesis one, two, and three was achieved by applying the $F$ statistic to determine if variation existed. Analysis of variance was applied to composite scores based on the three measuring instruments and to the scores of each individual instrument. Duncan's New Multiple Range was the procedure used to indicate which factors were variant. An analysis of data was made on the basis of the composite score of creativity and on the basis of the separate creativity instrument scores. Hypotheses four and five were tested through the use of simple analysis of variance. If the $F$ ratio were significant, Duncan's New Multiple Range was to be used for comparison of mean differences. An arbitrary level of significance was set at .05.

Findings

An analysis of the data revealed the following:

Hypothesis one: There was no significant difference in the creativity of the higher socio-economic group and the lower socio-economic group as evidenced by the composite score of creativity.

Hypothesis two: There was no significant difference in the creativity of the three ethnic groups, Negro American, Latin American, and Anglo-American, as evidenced by the composite score of creativity.

Hypothesis three: There was no significant difference in the creativity of students relative to the size of the community in which the student lived.
Hypothesis four: There was no relationship between the student's creativity in art and maternal occupational status.

Hypothesis five: There was no significant relationship between the sixth grade student's creativity in art and his church activity. In summation, hypotheses one, two, and three were rejected, and null hypotheses four and five were retained.

Conclusions

On the basis of the analysis of data, and within the limitations of the study, certain conclusions may be made in reference to the particular population investigated.

1. Socio-economic group membership is not a factor, per se, insofar as the creativity in art of sixth grade students is concerned.

2. Whether ethnic group membership is a factor insofar as the creativity in art of sixth grade students is concerned is still open to question due to discrepancy in the scores of the various measuring instruments.

3. Size of the community in which a student lives, large city, small city, and rural community, per se, is not a factor insofar as the creativity in art of sixth grade students is concerned.

4. Maternal occupational status is not a factor insofar as the creativity in art of sixth grade students is concerned.
5. Student's church activity is not a factor insofar as the creativity in art of sixth grade students is concerned.

6. Anglo-American students tended to be able to elaborate upon ideas and to be more flexible, fluent, and original in thought than were the Negro American and Latin American subject.

7. Torrance's Test of Creative Thinking, Figural Form A was more sensitive to differences between groups than were the other instruments used in this research.

Implications

1. As there are no apparent socio-economic group differences related to creativity in art, the teacher should concern himself with individual differences and using the positive elements in each student's socio-economic background to the fullest.

2. As there is a possibility ethnic group membership may be related to creativity in art, the teacher should continue to center his concern on observing and meeting individual differences and on using the differences when possible to enhance the development of all. It was mentioned previously that Latin Americans and Negro Americans evidenced greater interest in and frequency in using a three-dimensional approach to work. Such is an example of using differences for the benefit of all. When the teacher detects factors related to the child's ethnic group which are detrimental to his growth, the teacher should take action to relieve the child of the pressure of these factors.
3. Individuals and schools in large cities are either not availing themselves of the advantages offered to extend creative potential or the large city is not reaching the public with programs they purport to sponsor. It is further possible that children living in small cities and rural communities experience more freedom and less structured activity which encourage creativity and compensate for the lack of cultural advantages offered by the large city.

4. As there is no apparent relationship between the sixth grade student's creativity in art and maternal occupational status, the teacher need not be concerned with these differences, but rather with the individual differences of each child.

5. As there was no apparent church activity differences related to creativity in art, the teacher should concern himself with individual differences and with developing a creative classroom atmosphere which necessitates creative thinking on the part of the student.

6. Relating to data concerning flexibility, originality, and fluency which was discussed in Chapter V, there seems to be some possibility that teachers could enhance creative development by encouraging independent and divergent products and processes.

Recommendations

The following recommendations for further research are suggested by the results of this study:
1. Replicative investigations using the same instruments should be conducted with other groups to conform or negate findings of this study.

2. Further investigations should be made with socio-economic groups which also consider the cultural orientation of the home.

3. A study should be made of the Latin American and Negro American children's interest in three-dimensional art work.

4. Further investigation, using the same hypotheses and instruments should be conducted on lower elementary grade populations to determine whether the influence of these factors is constant in elementary school.

5. A study of larger groups, having the same socio-economic, ethnic group, community size controls, as those found to be variant by Duncan's New Multiple Range, should be conducted to determine if variation does, in fact, exist or if this variation occurred by chance.
1. How old are you? ___________ years old.

2. With whom do you live?
   A. _____ my Father and my Mother
   B. _____ my Father only
   C. _____ my Father and step-mother
   D. _____ my Mother only
   E. _____ my Mother and step-father
   F. _____ adopted parents
   G. _____ someone else. Who is the someone else? ___________________________________________________________________

3. What is your Father's or step-father's job?
   A. _____ Airline pilot, accountant, factory owner, minister, newspaper editor, optometrist, school teacher, veterinarian.
   B. _____ Bookkeeper, farm owner, foreman, office clerk, policeman, radio announcer, reporter, telephone serviceman.
   C. _____ Bus driver, bricklayer, carpenter, fireman, insurance agent, mail carrier, plumber.
   D. _____ Garbage collector, gardener, janitor, porter, shoe shiner, street sweeper, taxi driver.
   E. _____ Building contractor, electrician, manufacturer's representative, railroad engineer, store manager, welfare worker.
   F. _____ Automobile repairman, barber, cook, filling station attendant, laundry worker, machine operator, milkman, night watchman, painter, sales clerk, farm worker, truck driver, waiter.
   G. _____ Architect, banker, chemist, college professor, dentist, doctor, engineer, judge, lawyer, pharmacist.
   H. _____ Unemployed.
   I. _____ Has another job. What does he do? ___________________________________________________________________

4. How far in school did your Father or step-father go?
   A. _____ Less than seven years of school.
   B. _____ Junior high school (through the ninth grade).
   C. _____ Part of high school.
   D. _____ High school graduation.
F. _____ College graduate.

G. _____ Graduated from college and went to additional school.

5. What is your Mother's or step-mother's job?
   A. _____ Bank teller, bookkeeper, librarian, professional (RN) nurse, ticket agent, welfare worker, secretary.
   B. _____ Beautician, dressmaker, practical nurse.
   C. _____ Doctor, lawyer, pharmacist, college professor.
   D. _____ Housewife.
   E. _____ Cook, household worker, laundry worker, waitress.
   F. _____ Buyer (for a store), teacher.
   G. _____ Dancing teacher, office worker, telephone operator.
   H. _____ Salesclerk, window decorator.
   I. _____ Has another job. What does she do? ______________________

6. How far in school did your Mother Go?
   A. _____ Less than seven years of school.
   B. _____ Junior high school (through the ninth grade).
   C. _____ Part of high school.
   D. _____ High school graduation.
   E. _____ Part of college.
   F. _____ College graduate.
   G. _____ Graduated from college and went to additional school.

7. Does your Mother work outside the home?
   A. _____ Yes, my Mother works full time everyday.
   B. _____ No, my Mother does not work.
   C. _____ My Mother works while I am in school.
   D. _____ My Mother works away from home when I am out of school.

8. Do you attend Sunday school or church?
   A. _____ Yes, I go once a week or more.
   B. _____ Sometimes I go to church or Sunday School.
A Portion of the

Welsh Figure Preference Test

DIRECTIONS

(1) You are asked to decide whether you like or don't like each of the drawings on the following pages.

(2) Record your answers on the separate answer sheet by making a heavy mark opposite “L” (for Like) or “D” (for Don't Like). On some answer sheets the labels may be “T” (or True) for Like, and “F” (or False) for Don’t Like. Be sure the number of the drawing you are considering is the same as the number you mark on the answer sheet.

If you can't decide, guess. Do not skip any drawings. Try to work as fast as you can.
Activity 1. PICTURE CONSTRUCTION

Below is a piece of colored paper in the form of a curved shape. Think of a picture or an object which you can draw with this piece of paper as a part. On the back of these shapes you will find a thin layer of paper that can be peeled away. Look. Now you can stick your colored shape wherever you want it to make the picture you have in mind. Stick yours on the next page where you want it and press down on it. Then add lines with your pencil or crayon to make your picture.

Try to think of a picture that no one else will think of. Keep adding new ideas to your first idea to make it tell as interesting and as exciting a story as you can.

When you have completed your picture, think up a name or title for it and write it at the bottom of the page in the space provided. Make your title as clever and unusual as possible. Use it to help tell your story.
YOUR TITLE
Activity 2. PICTURE COMPLETION

By adding lines to the incomplete figures on this and the next page, you can sketch some interesting objects or pictures. Again, try to think of some picture or object that no one else will think of. Try to make it tell as complete and as interesting a story as you can by adding to and building up your first idea. Make up an interesting title for each of your drawings and write it at the bottom of each block next to the number of the figure.
In ten minutes see how many objects or pictures you can make from the pairs of straight lines below and on the next two pages. The pairs of straight lines should be the main part of whatever you make. With pencil or crayon add lines to the pairs of lines to complete your picture. You can place marks between the lines, on the lines, and outside the lines—wherever you want to in order to make your picture. Try to think of things that no one else will think of. Make as many different pictures or objects as you can and put as many ideas as you can in each one. Make them tell as complete and as interesting a story as you can. Add names or titles in the spaces provided.
PAPER SHAPES TEST

Encircle your identifying numbers above. Then, using the assorted pieces of paper (most of which are gummed) in the accompanying envelope, make a design in the space below which you consider interesting, imaginative, pleasing and creative. You may use all of the pieces or as few as you choose; you may use or combine them in any way you please that does not require the use of extra tools or materials. When you have decided on your design, lick the pieces and stick them onto the paper; you have twenty-five minutes in which to work.

A PARTIAL LIST OF OCCUPATIONAL CATEGORIES
ACCORDING TO NORC SCORES

Category One (one point)—NORC scores 88-94
Architect
Chemist
College professor
Dentist
Doctor
Judge
Lawyer
Scientist

Category Two (two points)—NORC scores 81-87
Accountant
Airline pilot
Armed forces, officer
Banker
Clergyman
Editor
Engineer
Minister
Osteopath
Optician
Optometrist
Pharmacist
Teacher
Veterinarian

Category Three (three points)—NORC scores 74-80
Artist
Building contractor
Buyer, department store
Chiropractor
County agent
Draftsman
Electrician
Farm owner or manager
Librarian
Store manager
Undertaker

Category Four (four points)—NORC scores 67-73
Bank teller
Bookkeeper
Cabinetmaker
Carpenter
Credit manager
Fireman
Floor manager, store
Foreman, manufacturing
Government worker
Insurance agent
Machinist
Manager, food and drink establishment
Nurse, R. N.
Oilwell worker
Photographer
Policeman
Proprietor, retail trade
Radio announcer
Real estate agent
Reporter
Salesman
Technician, medical and dental
Telephone serviceman or lineman

Category Five (five points)—NORC scores 60-66
Armed forces, enlisted
Auto repairman or mechanic
Baker
Barber
Bricklayer
Bus driver
Butcher
Machine operator in factory
Mail carrier
Manager of service station
Plasterer
Plumber
Repairman, radio or TV
Traveling salesman
Upholsterer

Category Six (six points)—NORC scores 49-59
Attendant, filling station, hospital, or parking lot
Clerk, store
Cook, restaurant
Deliveryman
Guard
Painter
Practical nurse
Shoe repairman
Taxi driver
Truck driver
Welder
Category Seven (seven points) -- NORC scores 34-48
  Bartender
  Elevator operator
  Garbage collector
  Janitor
  Laborer
  Laundry worker
  Night watchman
  Paperhanger
  Shoe shiner
  Street sweeper
  Waiter
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