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A Comparison of Artistic Ability in the Academically Gifted and Artistically Talented Sixth Grade Student.

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A Comparison of Artistic Ability in the Academically Gifted and Artistically Talented Sixth Grade Student

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THESIS ACCEPTANCE

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ABSTRACT

This study investigated the hypothesis that there is a significant different in the artistic ability of academically gifted sixth grade students compared to that of artistically talented sixth grade students. Also to study a sub-hypothesis that after being introduced to an art program following guidelines for a gifted curriculum, the academically gifted would improve more in artistic ability than the artistically talented group. Thirty-six students took part in the study. Fifteen were identified as gifted by high California Achievement Test Scores and had taken part in the gifted program at their school. The other fifteen were nominated by the art teacher on the basis of their outstanding artistic ability. The Clark's Drawing Abilities Test was administered as a pre- and posttest measurement of artistic ability. The art curriculum was presented an hour a week for seven weeks. Results of the study showed that although the artistically talented group tended to score highest on the pretest, there was no significant difference between the gain scores of the two groups after the seven weeks of curriculum. The results were discussed

in terms of the present findings, their relevance for future research and educational implications.

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CHAPTER ONE

INTRODUCTION

Giftedness and creativity do not go hand in hand. There is a misconception that a child with a high IQ is naturally creative and that anyone creative must be artistic (Welsh, 1975). With the national concern focused on producing creative individuals, educators are looking at these comparisons. The future of our nation depends on the ability of young people to create.

A curriculum should be introduced that will stimulate and increase creativity in our gifted and talented students. It should be a program that challenges not only the academically gifted but also the highly creative and artistically talented students. The following elements must be present in such a curriculum:

1. An imperative early identification.
2. Concise and continuous measurement of ability.
3. Available programs to meet special needs.

There are instruments to measure intelligence and identify the academically gifted students. Instruments

such as the Stanford-Binet Test are used to determine an intelligence quotient. There also has been research on the relationship between creativity and intelligence, but no standard creativity test has been developed that parallels the IQ measure (Khatena, 1977).

Some of the tests that are used to test creative potential are Remote Associates Test (Mednick, 1962) and the Torrance Tests of Creative Thinking (Torrance, 1966).

It has become clear that intelligence, creativity, and artistic ability may increase or decrease depending upon the teacher and the curriculum (Gowan, 1977).

Our gifted children are a national resource: to leave their full potential untapped is a waste of talent. The neglect of gifted children and the consequent loss of their potential to society is a vital problem in the conservation of talent. By introducing appropriate curriculum for gifted and talented children, creativity may be increased allowing these young people to achieve at a level closer to their full potential.

There has been great interest in the last forty

years in identifying and educating gifted and talented students. Most of the research and implementation has been in the academic areas.

A recent study of current status of state policy and programs in fifty states for the artistically talented students showed that policy programs for the artistically talented are generally lacking and where they exist, they are usually local and idiosyncratic (Clark & Zimmerman, 1984).

The problem is that little research has been done in the areas of:

1. The comparison of artistic ability in the academically gifted and in the artistically talented.
2. The comparison of distribution of artistic talent among academically gifted and artistically talented students.
3. The comparison of art ability in the academically gifted and the artistically talented, after each group has been given a curriculum structured for the academically gifted.

Statement of the Problem

Is there a significant difference in the artistic ability, creativity, and originality in academically gifted sixth graders compared to artistically talented sixth grade students?

Statement of the Sub-Problems

1. Are sixth grade girls more artistically talented than sixth grade boys?
2. After being introduced to an art curriculum following guidelines for the academically gifted and talented, will art ability of the academically gifted sixth grade students improve more than the artistically talented sixth grade students?
3. After being introduced to an art curriculum following guidelines for the academically gifted and talented, will sixth grade girls increase more in artistic ability than sixth grade boys?

Hypothesis

There is a significant difference in the artistic ability, creativity, and originality in academically gifted sixth grade students compared to that of artistically talented sixth grade students.

Null Hypothesis to be Tested

There is no significant difference in the artistic ability, creativity, and originality in academically gifted sixth grade students compared to that of artistically talented sixth grade students.

Sub-Hypotheses

1. Sixth grade girls are more artistically talented than sixth grade boys.
2. After being introduced to an art program following guidelines for a gifted and talented curriculum, the art ability of the academically gifted sixth grade students will improve more than the artistically talented sixth grade students.

3. After being introduced to an art program for gifted students, sixth grade girls will improve more in artistic ability than sixth grade boys.

Sub-Null-Hypotheses to be Tested

1. Sixth grade girls are not more artistically talented than sixth grade boys.
2. After being introduced to an art program following guidelines for a gifted and talented curriculum, the artistic ability of the academically gifted sixth grade students will not improve more than the artistically talented sixth grade students.
3. After being introduced to an art program for gifted students, sixth grade girls will not improve more in artistic ability than sixth grade boys.

Significance of the Problem

This study may provide art educators with factual information to use as a resource in making decisions about implementing art education for the academically

gifted, highly creative and artistically talented students in the Omaha Public Schools.

Assumption

1. Both groups of students were provided with identical classroom art instruction before the study began.

Limitations

1. The population of the study was limited to thirty sixth grade students at Crestridge Elementary School.
2. Most of the artistically talented students did not have the opportunity to participate in a program for gifted students.
3. Conclusions for the study apply only to academically gifted and artistically talented students.
4. The gifted students were placed in the study by high academic development scores while the artistically talented were selected through nominations.
5. Because of outstanding artistic ability, four

students with high achievement test scores were placed in the artistically talented group.

Definition of Terms

Gifted and Talented Children - Gifted and talented children are those identified who, by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated education programs in order to realize their contribution to self and society (Marland, 1972).

Creativity - "The process of sensing gaps or disturbing elements, forming hypotheses in terms of originality. The power of imagination to break away from perceptual set so as to restructure new ideas, thoughts and feelings into novel and associative bonds" (Torrance, 1962, p. 16).

Artistically Talented Children - The artistically talented children will display observed characteristics with superior abilities in skillful composition (Lark-Horovitz, 1941). Their designs are complete and coherent and have a purposeful asymmetrical arrangement with stability in irregular placement (Munro, 1956).

They use three or more objects integrated by a balanced arrangement in a complex composition using elaboration and depiction of detail (Lark-Horovitz & Norton, 1959). They correctly handle art media far beyond their ages. Students can draw a wide variety of things with excellence in many aspects of art, including form grouping and movement (Luca & Allen, 1974). Such students like art and can converse in art terms (Lark-Horovitz & Norton, 1959).

Organization of the Study

Chapter Two includes a review of related literature regarding gifted students, highly creative students, and artistically talented students. The literature has been divided into the following areas: historical and current issues, identification and measurement of each group, comparison of giftedness, creativity, artistic talent, boys and girls in each group, implementation of educational programs for each group and the distribution of artistic talent, intellectual ability, and originality in each group.

Chapter Three examines the design of the study, the size and background of the groups, how they were

selected, methods of gathering the data, instruments used, reliability of the instruments, and curriculum used during the study.

Chapter Four includes the presentation and an analysis of the data. Discussion of each hypothesis is presented. Tables have been included to clarify the findings.

Chapter Five consists of a summary, conclusions, and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Overview

This chapter contains background and research dealing with the following concerns related to the academically gifted student, highly creative student, and the artistically talented student.

1. Historical background and current issues.
2. Identification and measurement of each group.
3. Comparison of giftedness, creativity, and artistic talent.
4. The comparison of boys and girls and their abilities in each group.
5. Implementation of educational programs for each in each group.
6. Distribution of talent in each group.

Historical Background

Academically gifted: The roots of exploring giftedness go back as far as Socrates and Plato. Socrates recognized the need for early identification of gifted children and for the development of

individual, intellectual gifts. Plato also recognized the need to identify the gifted. He stated that gifted children should be identified and educated to be rulers of the state and thus achieve a more perfect order (Sisk, 1987).

In the Middle Ages, a person who was gifted was either condemned as a witch or looked on as a seer or wise man (Gowan, 1977).

In 1870, Galton began studying and researching intelligence through heredity. He was the first to design an instrument to measure intelligence. He claimed to be the first to treat the subject of hereditary genius in a statistical manner, to arrive at numerical results, and to introduce the "law of deviation from an average" into discussion of heredity (Galton, 1892).

Another pioneer in the area of giftedness was Binet who questioned the concept of fixed intelligence. He stated that most intelligence is developed by education (Binet, 1905). In 1905, he developed his test which was translated and revised by Terman in 1916.

Terman is called "the father of gifted child

research." His thirty-year study followed one thousand gifted children from childhood to adulthood and charted the progress of their genius. His study resulted in the book, Genetic Studies of Genius, published in 1925.

Other researchers who have made notable contributions to the field of education of the gifted include: Guilford, 1959; Piaget, 1952; Renzulli, 1978; Getzells and Jackson, 1962; and Torrance, 1980. Many of these and other people continue to carry on research in the field of the education of the gifted today. Through the research of such leaders, the means of identification and implementation of appropriate programs are being developed to help educators meet the special needs of these students.

Creativity: There are many diverse definitions of creativity. Sometimes these definitions serve as points of departure for systematic investigation. To gain a better understanding of creativity, one should examine the systematic approaches, theories, and research that have been developed during the past quarter of a century (Taylor & Getzels, 1975). The following systems were examined: psychoanalytic, humanistic, trait-factorial, holistic, and

associationistic.

Psychoanalytic: The psychoanalytic theorist sees creativity as a result of overcoming some problem that began in childhood. The creative act is seen as transforming an unhealthy psychic state into a healthy one (Dacey, 1989). The researchers who believe this theory include Freud and his disciples, Jung, Adler, and Rank.

In 1910, Freud was the first to present a theory on the ability of man to create. He states in his early writings that creativity is seen as a substitute for reality. Creative people turn from reality, and mold their fantasies into new realities which become creative acts. He believed the creative process originates within and not outside the person and the creation mirrors unconscious images after process through the ego of the person (Freud, 1945).

For Jung (1971), the unsatisfied yearnings of the artist reach back to the primordial image in the unconscious which is best fitted to compensate the inadequacy and one-sidedness of the present. Jung emphasized the concept of a collective unconscious storehouse of racial memories handed down from the

distant past.

Adler placed emphasis on the uniqueness of each person, which was evident in the life style rooted in specific inferiorities of each individual. Compensation for these inferiorities led to creativity. Adler separated from Freud and Jung in stating that creativity sprang from the consciousness of man rather than his unconsciousness (1917).

Rank (1932) was more concerned with art and creativity. He believed the creative motivation of the artist resulted from the need to externalize his personality into artistic acts.

Humanistic: One of the major concepts related to creativity in humanism is self-actualization. The belief that everyone possesses creative potential is another concept held by humanists. They see creativity as a high degree of psychological health (Taylor & Getzels, 1975). Theorists in this group are Maslow, Rogers, and Fromm.

For Maslow (1959), self-actualization seemed synonymous with health, and self-actualizing creativity was viewed as a possible essential characteristic of humanism. Maslow believed that the process of self-

actualization is tied to creativity and is free of neurosis. He further believed that humans have six basic instincts or needs, which must be met in a sequential order. Only after these six needs are met can a person be self-actualizing or creative. According to Rogers (1959), the mainspring for creativity is self-actualization, including openness to experience, internal locus of evaluation, and the ability to toy with elements and concepts. It is the desire of the individual to achieve his potential fully through interaction with a supportive environment (Rogers, 1959).

In 1959, Fromm stated, that one experiences creativity only after reaching some degree of inter-maturity when projection and distortion are reduced. He further argued that the act of creation was simply having the right attitudes and a basic need of humans to rise above passivity into the world of purposefulness and freedom. Through his religious belief, Fromm equated godliness with creativity.

Holistic-Gestalt: The holistic psychologists argue that creativity is a much higher process than just associating ideas in new and different ways. They

believe that the whole of any idea is more important than the sum of the parts. Theorists in this group included Kohler, Wertheimer, and Arnheim.

The concept of "instant insight" was investigated by Kohler in work with chimpanzees in 1929. His research reinforced the Gestaltist theory that creativity involved a reorganization or restructuring of mental concepts.

In his book, Productive Thinking in 1945, Wertheimer described creative thinking as occurring in a field which becomes focal but not isolated.

For Arnheim (1972), creativity involved getting back to the origin, to the roots of the experience of a person in terms of the senses.

Trait Factorial: Trait theorists believe creative people have distinctive characteristics that set them apart from other individuals. The trait theorists state that creativity can be inherited and follows certain laws of transmission (Galton, 1870). Researchers in the trait theory were Galton, MacKinnon, and Guilford.

An early supporter of trait theory was Galton, who, in his book, Hereditary Genius (1870), proposed

that mental capacities are inherited and follow certain laws of transmission which can be determined by observation.

Through direct observation, MacKinnon (1961) investigated personality traits of highly creative men and women in such fields as mathematics, physics, architecture, and painting. He found these people to be strongly interested in aesthetical and theoretical matters and tended to be highly intuitive and introverted.

Guilford (1959) held that creative talents were largely outside the realm of intelligence as measured. He further believed these talents were widely distributed in different degrees throughout the population and were not confined to a few gifted individuals.

Associationistic: According to the associationists, the ability to think creatively is a matter of using a number of associations accessible to an individual and of the forming of these elements into new and useful combinations (Taylor & Getzels, 1975). Researchers in this group included Ribot, Mednick, and James.

Ribot (1900), a pioneer in the associationistic approach, described the creative process as one in which mental states become joined in such a way that one state leads to another.

In 1962, Mednick stated that creativity is a matter of novel arrangements of temporarily contiguous, unusual associations to a given stimulus.

James (1890) believed that creativity was the result both of rich associations and avoidance of commonplace ideas.

Artistically Talented: In the early 1900s, Kik, (1912) and Meumann (1912) studied the drawing development of children and identified a small number of highly talented children whom they then studied. Although they reached no conclusion, their early methods of identification were an important contribution to educating the artistically talented.

Studies of variables that were related to the ability to draw were made by Hollingworth. She reported, in 1926, that educators had no means of gauging talent in drawing, except by grading a finished product on a scale of drawings, and that such a means does not always separate talent from training. She

also claimed that general intelligence conditions the ability to do art work.

One of the most influential art educators in this country in the past thirty years, Lowenfeld (1939) had a different view of artistic ability. He believed each child possessed a capacity for artistic development. In studies of drawings of children, he discovered states of certain consistencies and similarities in the techniques and processes they employed. In 1947, he labeled these stages of child art development in his book, Creative and Mental Growth. Although his work represents one of the most extensive efforts to classify and analyze artistic ability, it contains numerous assertions that lack adequate documentation (Eisner, 1972).

Meier (1933) spent fifteen years researching artistic aptitude in children. From this study, the most significant finding was the identification of six factors that contribute most to artistic aptitude. Half of these factors are a function of constitutional stock inheritance and half a function of environment. He also stated that they are interactive but did not report how this interaction occurred. The study by

Meier advanced the widely accepted belief that artistic ability is a result of talent and that talent is a dichotomously distributed "gift" possessed by a precious few (Eisner 1972).

Munro (1956) described artistically talented students as those whose drawings were much more advanced than their peers. Hurwitz (1983) stated that not only is the drawing of artistically talented students more advanced but that it also has elaborate schemas and symbol systems. These students enjoy drawing and want to perfect their skills.

In 1980, the interest in the field of the artistically talented student was generated by Carroll, Clark, and Hurwitz. In 1981, they coordinated a special interest group on arts for the gifted and talented at the National Art Education Association Convention in Chicago. This group generated the interest of other art educators. In 1984, Clark and Zimmerman's book, Educating Artistically Talented Students, was published. This book became a valuable tool for the art teacher in providing appropriate curriculum for the artistically talented. They opened a door that had been closed and let in the hope of

providing education that will help artistically talented students achieve their full potential.

Identification and Measurement

Academically Gifted: Educators are seriously looking at the identification process for gifted students. Early identification and correct placement in an appropriate program are major factors in educating children to their full potential. Without these processes, society may lose potentially gifted citizens.

For identification and measurement, Marland (1972), Pegnato, and Birch (1959), researchers in the field of the gifted, recommended a number of methods that included teacher observation and nomination, group school achievement test scores, group intelligence test scores, demonstrated accomplishments (including school grades), individual intelligence tests, and scores on tests of creativity.

Standardized tests have been created for the purpose of measuring and identifying gifted students. Some of the most popular instruments are the Stanford-Binet Intelligence Scale, the Wechsler Intelligence

Scale for Children - Revised Ability, the California Achievement Test, and the Iowa Test of Basic Skills. The first two are used to test individual mental ability; the last two are group achievement tests.

Creativity: The difficulties in defining and measuring creativity have been summarized by researchers in the field of creativity such as Baer, Rowbury and Goitz (1976), Khatena (1982), and Passow (1977). As Baer and his colleagues stated, "So many conceptions of creativity have been advanced that there is no possibility of a new one, (in other words creativity within the field of creativity now seems impossible)" (p. 22).

As Petrosko (1978) notes, measuring creativity presents a challenging paradox - devising a standardized way of capturing a nonstandard behavioral product.

Dacey (1989), in his study of creativity said, "We can assess creative potential in a number of ways: measurement of it directly; indirectly, by evaluating elements that make up the trait; measurement of personality traits closely associated with the trait; non-test measures of several kinds and judging the

actual products of creative efforts" (p. 140).

A test that purports to measure creativity directly is the Remote Associates Test (Mednick, 1962). The Remote Associates Test presents thirty sets of three words that are remote from each other but associated to one correct fourth word. The test results make a distinction between highly creative and ordinarily creative groups. It also identifies accurately those who have high creative potential.

Some of the tests that measure elements of creativity are the Story Writing Test (Torrance, 1963), the Purdue Test (Purdue Research Foundation, 1957), and the Two String Test (Maier, 1970). Tests that measure creative personality traits are the Torrance Test of Creative Thinking (Torrance, 1966-72) and the Figure Preference Test (Barron & Welsh, 1952). Non-test methods used in assessment of creative potential include use of checklists, questionnaires, and observation. Instruments used to judge creative output are the Creative Product Analysis, (Besemer & Treffinger, 1981) and the Creative Product Inventory (Taylor & Sadler, 1972).

Artistically Talented: Lowenfeld was one of the

early pioneers in identifying artistic ability in children. In 1947, by looking at the drawings of children, he discovered that they employed similarities in technique and processes. He labeled these stages and attached an age level by which each should be attained. He noted that not all children went through each stage step-by-step, that some jumped beyond their age level. These students that jumped beyond their age level seemed to have a more advanced conception of their art and a higher level of art technique than their age level peers.

In the 1950s and 1960s, there was a drastic rise in interest and financial support in the study of giftedness and creativity. Many researchers began to study the identification and classification of artistically talented students. Kough and DeHaan (1955) were two of the researchers in this field. They stated that in order to identify the artistically talented students, art educators must look at the concept, depth, proportion, originality, media usage, and the ability of the students to respond to works of art.

Although there are some current school programs

designed to service artistically talented students, there has been no consensus about recommended identification instruments for such programs (Clark & Zimmerman, 1989). No current publication prepared by art instructors offers standardized, specific guidelines for the identification of artistically talented students (Clark & Zimmerman, 1987).

The few tests used for artistic talent identification are the Knauber Art Ability Test (Knauber, 1932), Meier Art Test (Meier, 1929), Seven Drawing Test (Munro, Lark-Horovitz & Barnhardt, 1942), The Graves Design Judgement Test (Graves, 1946), and the Clark's Drawing Abilities Test (Clark, 1980-87).

The test devised by Clark is the newest and the most efficient instrument to measure and identify artistically talented students. It is used for screening and identification in gifted and talented education programs for artistically talented (Clark, Zimmerman & Zurmuenien, 1987). Studies were conducted from 1985 to 1990 at the Indiana University Summer Art Institute to prove the effectiveness of the test as a diagnostic instrument. The results of these tests proved that it is possible to evaluate and categorize

drawing abilities into different levels and to identify students with superior abilities (Clark & Wilson, 1989). The test consists of four drawing tasks. Each drawing has a different subject matter, is drawn within a rectangle, and is to be completed in twenty minutes. The Scoring Criteria Scale is based upon properties of art work derived from the works of Parker and Broudy (Clark, 1989).

Giftedness - Creativity: Throughout history, creativity and giftedness have been linked together. Many teachers naturally assumed that if children had a high intelligence quotient they must be highly creative as well (Taylor & Getzels, 1975).

Several investigators, including Getzels and Jackson (1962), Torrance (1962), and Guilford (1967), obtained results in their research that indicated a valid distinction between creativity and the concept of intelligence. They cited relatively low correlations between measures of intelligence quotient and creativity. Getzels and Jackson (1962) used tests derived from the Guilford battery in an attempt to show that creativity and intelligence were separate constructs. However, over the whole range, they stated

that there could be some relationship between creativity and intelligence as a certain amount of intelligence is required for creativity. Getzels and Jackson (1962) believed giftedness should be redefined as the potential to become creative. Gifted children do not necessarily grow up to become creative adults, and creative adults are not necessarily gifted children. The Getzels and Jackson study showed that, of the top fifth in creativity, only thirty percent of the subjects were among the top fifth in giftedness. The Torrance research (1962) presented data to support a similar finding.

McNemar (1964) indicated a practical differentiation by suggesting, "At high IQ levels there will be a very wide range of creativity whereas we go down to the average IQ and on down to the lower levels, the scatter for creativity will be less and less" (McNemar, 1964, p. 879).

Barron (1963) suggested that, beyond an IQ of 120, intelligence may be a negligible factor in creativity.

The data of Mednick and Andrew (1967) did not support the idea that creativity and intelligence are relatively independent processes among the gifted.

They believed intelligence and creativity are more closely related at lower levels of intelligence.

Gowan (1977) stated, "Giftedness is potentiality, not performance" (p. 11).

While it is obvious both from biographical inspection as well as the research of Getzels and Jackson (1962) that some creative people (Einstein, Mozart, Picasso) are gifted, it is by no means true that most gifted students are creative. Guilford (1967) further stated, "Creativity and giftedness are different rooms in the mansion of intellect" (pp. 21-22).

Even though there are many educators who equate giftedness with creativity, it seems incorrect to use creativity synonymously with giftedness (Clark & Zimmerman, 1982).

Art and Creativity: Art and creativity is another area being investigated by educators. In his studies, Rank (1932) was more concerned with art and creativity than other early psychoanalysts. He believed that an individual was able to reach his highest level of development by realizing an independent will through which he would resolve his guilt feelings and integrate

his personality. He identified this person as the creative type and attributed to him/her the highest level of creative functions.

Roe began her research in the 1940s with the investigation of highly creative painters. On the basis of data obtained from Rorschach, TAT, and biographical material, she found curiosity, persistence, high energy level, the need for independence and a strong motivation to succeed to be characteristics of highly creative painters. Her studies also indicated that mental health affects creativity by providing motivation for the highly creative.

She found the visual mode of thought to be predominant in all creative painters. For most of them, visual stimulation, reaction to things seen, is intense, sometimes almost painfully so. She concluded, "Creativity as seen in artists does not come from any sudden inspiration invading an idle mind and idle hands but from the labor of a driven person" (Roe, 1946, p. 168).

MacKinnon, in the Institute of Personality Assessment Research Study, found that creative people

such as artists, poets, and essayists are often highly intelligent and highly creative as well as artistically talented. He also assumed that intelligence alone would not produce creativity and that highly creative artists are characterized by higher ego strength (MacKinnon, 1962).

Originality also should be considered in connection with creativity, giftedness, and art talent. This type of originality was discussed by Schimek (1954), Barron (1952), and Taylor (1973).

Schimek argued that the most valid index of originality was likely to be the most original responses by a subject in an area in which he was most proficient. Originality, so measured, proved to be significantly correlated with intellectual competence.

Data, by Barron (1963), suggested that originality was not a homogenous trait and advanced the notion that artistic perception should be related to originality.

In the "Creative Product Inventory," originality was considered less important than generation and reformulation and was evaluated as to the degree of the usefulness and uncommonness of the product (Taylor,

1973).

Comparison of Academically Gifted and Artistically Talented

Giftedness has become equated with superior verbal and numeric skills while artistic talent has become disassociated from intellectual achievement. False distinctions between intellectual and artistic giftedness need to be tested (Clark, 1984).

Tiebout and Meier (1936) reported that artistic giftedness is largely dependent on the IQ of a child. Some researchers have shown that most high IQ students are also artistically talented and that most artistically talented students have a high IQ (Fritz, 1930; Vernon, Adamson & Vernon, 1972).

Hollingworth (1926) reported that high intelligence and superior art talent are independent; not all high IQ children have art talent. But all children with superior art talent do possess a higher than average IQ. The art works of highly intelligent students were superior to those made by average or below average students.

Lowenfeld and Brittain (1964) claimed that scores

on intelligence tests do not give any indication of artistic giftedness.

The findings of the researchers in the field of artistic talent as compared to high intelligence were as varied and sometimes as contradictory as the researchers. Research continues in order to find an answer to this question. Many claims have been made, but few have been proven or tested.

Comparison of Boys and Girls in the Areas of Creativity Academically Gifted and Artistically Talented

Creativity: Sex difference in creativity were noted in a study by the Institute of Personality Assessment (MacKinnon, 1962). Results of the study indicated that fewer women than men attained distinction for creativity in the arts and sciences. It was hypothesized that the difference was due to social and cultural factors, difference in role expectations and in role possibilities, and not in the abilities of women to be creative. The research by Helson (1967) revealed that there was a significant association between "sex appropriateness" and creativity.

Based on his research involving comparisons of creative men and women, Gowan (1972) theorized that women are at least as intelligent as men but for some reason they are generally not as productively creative as men. He listed the reasons as;

1. Cultural discrimination
2. Sexual dominance patterns established in mammals
3. Women representing a lower evolutionary type, with dominant cerebellum instead of cerebrum
4. Sex linked genes such as the y
5. Creativity of women in rearing children
6. Pathway toward creativity in women possibly fraught with more hazards to their mental health
7. Creativity in women possibly a process whereas in men a product (Gowan, 1972).

Academic Giftedness: Research into the question as to the relative intelligence of the sexes was conducted by Terman (1920-50) in his thirty-year study of intelligence quotients. He used the ancient hypothesis, which took for granted the superiority of the male. Terman reported that there was a small but

constant superiority of the girls up to the age of thirteen. At age fourteen, however, the curve for the girls dropped below that for boys. Psychologists and educators assumed this result was caused by culture influence.

A comprehensive review of sex differences by Maccoby and Jaclin (1974) found that adolescent boys often appear to be clearly and consistently superior to girls in visual-spatial ability and achievement in mathematics and science.

But there has been little or no research in the comparison of artistic ability in boys and girls.

Current Programs

Academically Gifted: Since the 1970s, teachers have been making an effort to implement curriculum for academically gifted students. This interest was promoted by national studies such as The Marland Report (1972), the National Commission on Excellence, A Nation At Risk (1983), and the Education Commission for the States Action for Excellence (1984). The findings of these studies recommended a differentiated curriculum.

Differentiated program services for the gifted are

usually grouped into three categories of enrichment, acceleration, and special groups.

Enrichment: "Enrichment is one of the more misused and misquoted educational terms. It can be a catch-all for disjoined experience which fill the day with 'busywork' and 'busy experiences'" (Sisk, 1987, p. 78). Effective enrichment is appropriate when defined as the addition of different areas of learning more in-depth material, not normally found in the curriculum (Cox, 1985). A good enrichment program exposes the gifted to experiences, materials, and information that are exciting, challenging, new, and unusual (Kaplan, 1974).

Acceleration: Acceleration is the least used of the three categories. It can take many forms such as early entrance to school, grade skipping, telescoping of several grades, early entrance to college, and taking courses out of sequence. A supporter of acceleration is Gallagher. He stated that gifted students who are seeking a specific profession can expect to be in school until they are twenty-nine; anything that can reduce this time period benefits not only gifted people but society as well (Gallagher,

1985). The young gifted students who are ready for school are better served by early entrance than by waiting for their age group when their mental age will be far above that of their peers (Howley, 1986).

Special Grouping: Special groupings have been used widely for gifted students on an informal basis through such arrangements as clustering groups of students in the regular classroom, a special class, special schools, or special seminars (Newland, 1976). Many educators believe gifted students need to work with other gifted students to learn at their own pace and to motivate and stimulate each other (Sisk, 1987).

Dacey (1989) stated that schools suppress creativity and that most young children are naturally curious and highly imaginative, but when they enter school something happens that turns them into spectators instead of participators.

Williams (1968) stated that children without access to a stimulating arts program are being systematically cut off from most of the ways in which they can perceive the world. Their brain is being systematically damaged. In many ways, they are being deeducated.

Artistically talented students are usually nominated for the school art honors class, the selection being done by the art teacher. Some schools let the students work in a studio with a professional artist or have an artist from the community come to the school to hold a workshop. They may attend special classes held on college campuses or in art museums, art magnet schools, summer programs, residential art schools, and workshops. They may all use mentors from the community (Clark, 1983).

Distribution of Abilities, Giftedness, Creativity, Artistic Ability

Academically Gifted: Most of the early Binet studies shed little light on the distribution of intelligence due to the failure to avoid the influence of accidental selection in choosing subjects for testing. The studies by Terman of one thousand subjects found that distribution of intelligence was fairly symmetrical at each age from five to fourteen. This normal distribution of intelligence seemed to continue through out the thirty years of the study (Terman, 1920-50).

Artistically Talented: A study done by the National Assessment of Educational Progress demonstrated that different levels of artistic achievement could be constructed much the same as the levels of intelligence, therefore, showing a normal distribution of artistic ability (NAEP, 1977).

Discussion of the artistically talented child by researchers relates to the concept of art talent as a normally distributed trait. All differences in drawing skills of highly talented and less talented students are considered different in degree and not in kind (Clark & Zimmerman, 1984). Clark and Zimmerman conducted extensive research in the area of artistic ability in children. Their studies have shed light on identification and programming for the artistically talented. In their latest study, using the Clark's Drawing Abilities Test, they argued that artistic talent is normally distributed (Clark, 1982; Clark & Zimmerman, 1984).

Creativity: A study by Dacey and Ripple (1967) used the Story Writing Test to test the creative abilities of 1,200 seventh and eighth grade students. The study showed a very uneven distribution, with the

largest group of students scoring in the bottom third of the possible range of scores with an average score of about seven (top score was 22). A smaller group of students scored in the top third and averaged about eighteen. The results produced an overall mean score of 10.2, even though few students actually received that score (Dacey, 1989).

Summary

The historical background of the gifted movement goes back as far as Socrates. Continued interest was stimulated by Galton, Binet, and Terman who pioneered measurements of intelligence. Some researchers who have made notable contributions to the field of gifted education are Guilford (1959), Renzulli (1978), Torrance (1980), and Marland (1972). Educational research is on-going. The study of creativity is divided into five systems: psychoanalytic, humanistic, trait-factorial, holistic and associationistic. Research in the field of artistic talent began in 1912 with Kik and Neuman. By studying the drawings of children, Hollingworth (1926) and Lowenfeld (1939) hoped to produce a scale to measure artistic ability.

In 1984, Clark and Zimmerman published their book which became a valuable tool in identification and in providing for curriculum for the artistically talented.

Early identification and correct placement of academically gifted, creative, and artistically talented students are major factors in educating children to their full potential.

There are several instruments to measure intelligence and creativity, such as achievement tests, Remote Associates Test (1962), and the Torrance Test of Creative Thinking (1966). Clark's Drawing Abilities Test (1980-87) is the newest instrument in measuring artistic ability.

Throughout history, creativity and giftedness have been linked. However, studies by Getzels and Jackson (1962), Torrance (1962), and Guilford (1967) have indicated a valid distinction between creativity and the concept of intelligence. The comparison of art and creativity was investigated by Rank (1932) and Roe (1946) who found similar characteristics in students who were both artistic and creative. Tiebout and Meier (1936) reported that artistic giftedness is dependent on the IQ of a child.

Comparison of boys and girls in the areas of creativity, academically gifted, and artistically talented revealed men attained distinction over women in all three areas. This fact is attributed to social and cultural factors (Helson, 1967).

Current programs for the academically gifted, highly creative, and artistically talented students are enrichment, acceleration, special grouping, and summer programs.

Through his thirty-year study of one thousand subjects, Terman found there was a normal distribution of intelligence. Clark (1982-84), in his research, found that art talent is normally distributed. Data gathered by researchers Kik (1912), and Hollingworth (1923-26) noted this occurrence and claimed that art abilities appear to be related to intelligence and normally distributed.

Preview

Chapter Three explains the design of the experiment which includes the number of subjects, their background, how they were selected, procedures followed, curriculum used, sources and methods of

gathering the data, and instruments used and their reliability.

CHAPTER THREE

RESEARCH DESIGN AND PROCEDURES

The design of the study is explained in detail. This includes the size of the samples and how they were selected, procedures followed, methods used in gathering data, reliability of the instruments used, and statistical procedures used in the analysis.

Purpose of the Study

The purpose of the study was to determine if there was a significant difference in artistic ability in terms of originality, creativity, and technique between two groups of students. The artistic ability of a group of academically gifted sixth grade students was compared to a group of artistically talented sixth grade students. The difference in artistic ability between girls and boys was compared also.

An hypothesis and three sub-hypotheses were formulated for the research design. The hypothesis was formulated to measure the difference in artistic ability between a group of academically gifted students and a group of artistically talented students.

The sub-hypotheses were formulated to (1) test if

there is a difference in artistic ability between a group of sixth grade girls and a group of sixth grade boys, (2) measure the effects of an art curriculum on artistic ability in a group of academically gifted sixth grade students compared to a group of artistically talented sixth grade students, and (3) compare curriculum on artistic ability between a group of sixth grade girls and a group of sixth grade boys.

Subjects and Selection of Subjects

In the fall of 1990, an experimental design study was conducted at Crestridge Elementary School. The students, parents, faculty, and principal of Crestridge School are strong supporters of the visual arts. The educational environment of the school encouraged artistic expression. A group of thirty sixth graders was selected for the study. The average age of the students was twelve, over half of the thirty having attended Crestridge School all six years. The students were divided into two groups of fifteen, one based on academic ability and the other on artistic ability.

The group of fifteen academically gifted were selected through scores on the California Achievement

Test administered in May 1990. For these students, the over-all average in the three areas of measurement (language arts, reading, and mathematics) was 281. Scores ranged from 293 as the highest to 255 as the lowest. There were six girls and nine boys in this group. All had been identified as academically gifted and had participated in the gifted program at the school. Three members of this group were left-handed. Family background revealed that out of twenty-six parents, twenty-two had earned college degrees, two were involved in art, and five of the parents were doctors. Four of the students came from single-parent families.

The other fifteen students, based on their past art work or the artistically talented group, were nominated by the school art teacher and classroom teacher. There were seven girls and eight boys, two being left-handed. Four had scores of 270 or higher on the California Achievement Test and could have qualified for the academically gifted group but were nominated for the artistic group because of their outstanding art ability. The overall average on the California Achievement Test in the three areas

(reading, language arts, and mathematics) was 214. The test scores of this group ranged from 296 as the highest to 42 as the lowest. Of the twenty-five parents in this group, nine had earned college degrees and one was a doctor. Five of the students came from single-parent families.

None of the students in either group had participated in a special art program. The code name for the academically gifted group was Michaelangelo. For the artistically talented group, Leonardo was the code name. Both groups were given the same curriculum during the seven weeks of instruction. The curriculum consisted of problem solving in areas of art research, critiquing art work of students and masters, and making art.

Description of Procedure

The students came into the school library for one hour every Monday for seven weeks. The artistically talented (Leonardo) came in from 1:00 P.M. to 2:00 P.M., the academically gifted (Michaelangelo) from 2:00 P.M. to 3:00 P.M.

During the first meeting of each group, as a

pretest measurement, the Clark's Drawing Ability Test (Appendix A) was administered and observed by the co-operating teacher. It took one hour to test each group. The results were mailed to Dr. Clark for scoring.

The same curriculum was presented to each class. During the second week an interest inventory sheet (Appendix K), a critique sheet (Appendix C), Vocabulary Words (Appendix J), a time line (Appendix B) and the Renaissance period were introduced to the students and discussed. Ten Renaissance prints from the Joslyn Art Museum were shown. Students were to select one print and using the critique sheet (Appendix C) examine the print and appoint a spokesperson to present the information about the print orally to the class. After the critique, the "Make Mona Modern" (Appendix D) lesson was introduced. The students worked on it for three weeks. The finished projects were displayed for the Parent Teacher Conferences Night at Crestridge School.

A research paper was the next project. Each group of three students drew the name of a Renaissance artist and searched for information about the artist using the

research sheet in the packet as a guide (Appendix E). A spokesperson was chosen to present the material of the group to the class.

During week five, the students worked on a collage project. After the properties of collage were discussed (Appendix F), examples of five collages were shown. The students worked in groups of three, and finished the project in one class period. The groups then presented and critiqued the projects for the rest of the class.

The last project was a surrealistic watercolor picture (Appendix G). Surrealistic prints were shown and the history behind the movement was explained. Again in groups of three, the students selected a print and critiqued it orally for the rest of the class. Dreams were discussed by the class and why certain ones are remembered. The students were instructed to draw one dream that could be remembered vividly. The next week, watercolor was added, and the students critiqued their pictures for their peers.

During week seven, the Clark's Drawing Abilities Test was administered as a posttest to measure the effect of the seven week curriculum on artistic ability

in both groups. The test was given with the co-operating teacher and an artist as observers. The tests were again mailed to Dr. Clark for scoring.

Data Gathering Strategies and Instruments

An instrument called the Clark's Drawing Abilities Test (1984) (See Appendix A) was used as a pretest to measure artistic ability in each group. The test was administered at the beginning of the seven-week art curriculum. It was again administered as a posttest at the end of the program as an assessment of any increase in artistic ability in each group.

The test consisted of four drawing tasks. The subject matter of each of the four tasks called for a different drawing skill. At the start of the test, the students were told that it was a timed test; each of the four drawings was to be completed in fifteen minutes. Instructions were given to open the test to the first page and fill the rectangle with a picture of an interesting house, as if looking at it from across the street, adding as much detail as time permitted in the fifteen minutes. In the second drawing, the students were instructed to draw a person running very

fast and add a background. In the third drawing, the students were told to use their imagination and make a fantasy picture. A title line was included under the drawing (The tester was not to mention it. The students were to take the initiative and fill it in). The students earned an extra five points for the title. At the end of the test, the students were told the tests would be mailed to Dr. Clark for scoring. Using an established Scoring Criteria Scale, the completed drawings were assessed and assigned a score on a 1-5 scale with 5 being highest. Scores of all four drawings were totaled, and each test was given a cumulative score. The five-point Scoring Criteria were based upon commonly used properties of art work (Clark, 1984).

The properties included in the Scoring Criteria Scale were:

1. Sensory Properties
   - line 1-5
   - shape 1-5
   - texture 1-5
   - value 1-5
2. Formal Properties
   - rhythm 1-5

balance 1-5

unity 1-5

composition 1-5

3. Expressive Properties

mood 1-5

originality 1-5

4. Technical Properties

technique 1-5

correctness of solution 1-5

Number five of each item was used to give credit for "unique" innovation or unusual responses.

The validity and reliability of the Clark's Drawing Abilities Test in screening and identifying gifted and talented students in visual arts were established through nine years of studies at the University of Indiana. In 1989, results of a 1984 experimental use of Clark's Test showed that test scores consistently correlated with the ratings of students by teachers at greater than a < .01 level of significance. Also the results of the test were compared to results on the Children's Embedded Figures Test (Karp & Konstadt, 1963) as a measure of validity. This correlation was significant at the < .02 level

(Clark, 1990).

A local panel of three judges was selected to critique the three finished projects of the two research groups. One was an artist and art teacher at a local university; the other two were also artists and administrators in the art education department of the local school district. A blind method of coding (using the names of Michaelangelo and Leonardo) was used so that the judges did not know the group placement. The judges were asked to rate the three projects in each of the groups as a total group, in terms of superiority in originality, creativity, and technique. They reported their findings in written form to the researcher.

A daily journal was kept by the researcher in order to report student questions, reactions to the projects, interaction among themselves, and technical progress.

The students were also video-taped three times with a visual comparison made of their critiquing techniques.

Statistical Treatment

A comparison was made between the mean scores of each group on the pretest. The t-test was administered to determine if there was a significant difference in the mean scores of the two groups comparing artistic ability.

Another comparison was made between the mean scores of the girls and of the boys on the pretest. The t-test was administered to determine if there was a significant difference in the mean scores of the two groups comparing artistic ability.

A comparison was made between the mean scores on the pretest and posttest of each group. A t-test was administered in each group to determine if there was a significant difference in the mean scores of the two groups comparing the increase in artistic ability from pretest to posttest in each group. Calculation of the standard error of the difference was made, between the mean scores of the academically gifted and the mean scores of the artistically talented. The direct-difference method was used to determine the standard error. An independent t-test was administered to

establish the student t-ratio between the difference.

Another comparison was made between the mean scores of the pretest and posttest of the girl and boy groups. The t-test was administered in each group to determine if there was a significant difference in the mean scores of the two groups comparing the increase in artistic ability from pretest to posttest in each group. Calculation was made also of the standard error of difference between the mean score of the girls and the mean score of the boys on the pretest and posttest. The direct-difference method was used to determine the standard error. An independent t-test was also administered to establish the student t-ratio between the difference.

Preview

Chapter Four provides analyses of the data that were gathered through the California Achievement Test, Clark's Drawing Abilities Test, the panel of judges, and the daily journal. The test results were discussed and tables were included.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

Data collected on fifteen academically gifted sixth grade students and fifteen artistically talented sixth grade students is presented.

Tables 1 and 2 show the two groups of students in the study, their California Achievement Test Scores, the pretest and posttest scores on the Clark's Drawing Abilities Test and the gain. Each group is presented separately.

The results of the two Clark's Drawing Abilities Test score (pretest-posttest) for each group were analyzed and compared. The scores from each of the two tests, (there were a possible total of 200 points on each test) were totaled and a mean score was determined for each test. The California Achievement Test scores for each group were totaled also and a mean score was determined and compared.

The academically gifted group show a mean score of $x = 280.73$ on the California Achievement Test and a mean score on the Clark's Drawing Abilities pretest of $x = 94.40$. The artistically talented group show a mean score of $x = 214.13$ on the California Achievement Test

and a mean score on the Clark's Drawing pretest of $x = 104.60$. The California Achievement Test score for the academically gifted is significantly higher than the artistically talented group, but the mean score of the artistically talented on the Clark's Drawing Abilities Test is higher than the academically gifted. The statistical treatment of each hypothesis and sub-hypotheses was discussed separately.

Hypothesis

There is a significant difference in artistic ability, creativity and originality in academically gifted sixth grade students compared to artistically talented average sixth grade students.

Null-Hypothesis to be Tested

There is no significant difference in artistic ability, creativity, and originality in academically gifted sixth grade students compared to artistically talented average sixth grade students.

A t-test was administered to determine the significance of difference between the means of Clark's Drawing Abilities pretest of the academically gifted

group and the pretest of the artistically talented group. In the data shown on Table 3, the academically gifted students scores were $\bar{x}$ = 94.40, SD = 14.54. The artistically talented scores were $\bar{x}$ = 104.60, SD = 20.43. The mean score of the artistically talented group was significantly higher than the mean score of the academically gifted group. The Critical Values of Student's Distribution table was used to determine the critical value of t, t = 1.5888, $p < .20$.

The null-hypothesis was rejected, the mean score of the artistically talented group was higher than the academically gifted and the critical value of t was less than 1.701 at $p < .20$.

Table 1

Students Number, Sex, California Achievement Scores, Pretest-Posttest Scores on Clark's Drawing Abilities Test And Gain for the Academically Gifted Group

Student #	Sex	CAT	CDAT Pretest Total 200	CDAT Posttest Total 200	Gain
1	M	282	72	137	65
2	F	283	122	175	53
3	M	267	92	159	67
4	M	290	92	165	73
5	F	274	86	161	75
6	F	289	86	139	53
7	F	255	99	156	57
8	M	292	91	162	71
9	M	293	98	186	88
10	M	276	95	144	49
11	F*	293	96	181	85
12	M	293	76	159	83
13	M	282	128	176	48
14	M	278	89	170	81
15	F	264	94	168	74
Total		4211	1416	2438	1022
Means		280.73	94.40	162.53	68.13
S.D.		11.79	14.54	14.49	13.48

Table 2

Student Number, Sex, California Achievement Scores, Pretest - Posttest Scores on Clark's Drawing Abilities Test and Gain Made for the Artistically Talented Group

Student #	Sex	CAT	CDAT Pretest Total 200	CDAT Posttest Total 200	Gain
16	M	48	132	177	45
17	M	244	125	187	62
18	F	199	123	178	55
19	M	219	99	143	44
20	M	196	96	137	41
21	M	296	81	189	108
22	M	227	110	183	73
23	F	256	97	163	66
24	M	229	85	149	64
25	F	280	109	159	50
26	F	42	60	191	131
27	F	156	90	168	78
28	M	265	132	192	60
29	F	282	112	159	47
30	F	273	118	174	56
Totals		3212	1569	2549	980
Means		214.13	104.60	169.93	65.33
S.D.		78.34	20.43	17.78	24.81

Table 3

Mean Scores, Standard Deviation and t-Test Scores for the Pretest of the Clark's Drawing Abilities Test for the Academically Gifted and Artistically Talented Groups

Group	N	Mean Score	Standard Deviation	t-Test Score	Probability
Academically Gifted	15	94.40	14.54	1.5888	<.20
Artistically Talented	15	104.60	20.43		

Sub-Hypothesis 1

Sixth grade girls are more artistically talented than sixth grade boys.

Null Hypothesis to be Tested

There is no difference in artistic ability between sixth grade girls and sixth grade boys.

Tables 4 and 5 show the girl and boy students in the study, their California Achievement Test Scores, the pretest and posttest scores on the Clark's Drawing Abilities Test and the gain.

The girls group shows a mean score of $x = 242.0$ on the California Achievement Test and a mean score of $x = 99.38$ on the Clark's Drawing Abilities pretest. The boys group shows a mean score of $x = 251.52$ on the California Achievement Test and a mean score of $x = 99.60$ on the Clark's Drawing Abilities pretest. Although the boys mean score on the California Achievement Test is higher than the girls there was no significant difference between the two groups on the mean scores of the Clark's Drawing Abilities pretest. Each group is presented separately.

In Table 6, the mean score of the girls group on the Clark's Drawing Abilities pretest was compared to the pretest of the boys group; $\bar{x}$ = 99.38, SD = 16.92 for the girls group compared to $\bar{x}$ = 99.60, SD = 18.53 for the boys group. The t-test calculation revealed the significance of the difference between the means as t = .0034. The null hypothesis was accepted as the critical value of t was less than 1.313 at $p > .20$.

Table 4

Student Number, California Achievement Scores, Pretest-Posttest Scores for Clark's Drawing Abilities Test and Gain for the Girls Group

Student #	CAT	CDAT Pretest Total 200	CDAT Posttest Total 200	Gain
2	283	122	175	53
5	274	86	161	75
6	289	86	139	53
7	255	99	156	57
11	293	96	181	85
15	264	94	168	74
18	199	123	178	55
23	256	97	163	66
25	280	109	159	50
26	42	60	191	131
27	156	90	168	78
29	282	112	159	47
30	273	118	174	56
Totals	3146	1292	2172	880
Means	242.0	99.38	167.07	67.69
S.D.		16.92	12.78	21.62

Table 5

Student Number, California Achievement Scores, Pretest-Posttest Score on Clark's Drawing Abilities Test and Gain for the Boys Group

Student #	CAT	CDAT Pretest Total 200	CDAT Posttest Total 200	Gain
1	282	72	137	65
3	267	92	159	67
4	290	92	165	73
8	292	91	162	71
9	293	98	186	88
10	276	95	144	49
12	293	76	159	83
13	282	128	176	48
14	278	89	176	87
16	48	132	177	45
17	244	125	187	62
19	218	99	143	44
20	196	96	137	41
21	296	81	189	108
22	227	110	183	73
24	229	85	149	64
28	265	132	192	60
Totals	4276	1693	2821	1128
Means	251.52	99.60	165.94	66.40
S.D.		18.53	18.77	17.70

Table 6

Mean Scores, Standard Deviation and t-test Scores for the Clark's Drawing Abilities Test Pretest from the Girl and Boy Groups

Group	N	Mean Score	Standard Deviation	t-test Score	Probability
Girls	13	99.38	16.92		
				.0034	> .20
Boys	17	99.60	18.53		

Sub-Hypothesis 2

After being introduced to an art program following guidelines for a gifted and talented curriculum, the artistic ability of the academically gifted sixth grade student will improve significantly more than the artistically talented sixth grade student.

Null Hypothesis to be Tested

After being introduced to an art program following guidelines for a gifted and talented curriculum, the artistic ability of the academically gifted sixth grade student will not improve significantly more than the artistically talented sixth grade student.

Two t-tests were administered to determine the significance of difference between the mean scores of the academically gifted on the Clark's Drawing Abilities pretest and posttest and the mean scores of the artistically talented on the pretest and posttest. Table 7 shows the scores for the academically gifted were $\bar{x}$ = 94.40, SD = 14.54 on the pretest and $\bar{x}$ = 162.53, SD = 14.49 on the posttest, t = 13.0210. Scores for the artistically talented were $\bar{x}$ = 104.60,

SD = 20.43 for pretest and x = 169.93, SD = 17.78 on the posttest, t = 9.4092. The obtained t score for the academically gifted (t = 13.0210) and the t score for the artistically talented (t = 9.4092) fall beyond 3.674 at p <.001 level; therefore, both t scores are significant. There was however no significant difference between the mean gain of the two groups so the null hypothesis is accepted.

Tables 8 and 9 provided the data for using a direct-difference test to calculate the standard error of the mean difference between the pretest and posttest of each group. Table 10 shows the SD = 3.48, D = 68.13, and the t value = 19.580 for the academically gifted group. For the artistically talented group, SD = 6.41, D = 65.33, and t value = 10.187. The calculations revealed the significance of difference in both groups to be beyond 3.674 at p < .001.

An independent Student t-ratio test was administered to determine the significant difference between the direct-difference test means of the academically gifted and artistically talented groups. Table 11 shows the Student t-ratio of the difference between the two means of the two groups. As the

academically gifted, $\bar{x}$ = 68.13, the artistically talented $\bar{x}$ = 65.33. The Student t-ratio revealed the t score as t = .3840. Since the t-ratio is less than 1.313 at p > .20, the difference is not significant.

Even though each group made a significant gain in artistic ability between the pretest and posttest, the difference between the gains of the two groups was not significant.

Table 7

Mean Scores, Standard Deviation and t-test Scores for the Clark's Drawing Abilities Pretest and Posttest for the Academically Gifted and Artistically Talented Groups

Group		N	Mean Score	Standard Deviation	t-test Score	Probability
Academically Gifted	pretest	15	94.40	14.54	13.0210	< .001
	posttest	15	162.53	14.49		
Artistically Talented	pretest	15	104.60	20.43		
	posttest	15	169.93	17.78	9.4092	< .001

Table 8

Scores of the Academically Gifted on Clark's Drawing Abilities Pretest and Posttest and the Difference Between the Scores

Subject	CDAT Pretest	CDAT Post test	Difference D	Difference D2
1	72	137	65	4225
2	122	175	53	2809
3	92	159	67	4489
4	92	165	73	5329
5	86	161	75	5625
6	86	139	53	2809
7	99	156	57	3249
8	91	162	71	5041
9	98	186	88	7744
10	95	144	49	2401
11	96	181	85	7225
12	76	159	83	6889
13	128	176	48	2304
14	89	170	81	6561
15	94	168	74	5476
Totals	1416	2438	1022	72176
Means	94.40	162.53	68.13	4811.73
SD	14.54	14.49	13.03	

Table 9

Scores of the Artistically Talented on the Clark's Drawing Abilities Pretest and Posttest and the Difference Between the Scores

	CDAT	CDAT	Differences	
Subject	Pretest	Posttest	D	D2
16	132	177	45	2025
17	125	187	62	3844
18	123	178	55	3025
19	99	143	44	1936
20	96	137	41	1681
21	81	189	108	11664
22	110	183	73	5329
23	97	163	66	4356
24	85	149	64	4096
25	109	159	50	2500
26	60	191	131	17161
27	90	168	78	6084
28	132	192	60	3600
29	112	159	47	2209
30	118	174	56	3136
Totals	1569	2549	980	72646
Means	104.60	169.93	65.33	4843.10
S.D.	20.43	17.78	24.00	

Table 10

Standard Error of the Mean Difference, Value of Difference, Value of t Between the Clark's Drawing Abilities Pretest and Posttest for Academically Gifted and Artistically Talented

Group	N	Standard Error	Mean Difference	t-value	Probability
Academically Gifted	15	3.48	68.13	19.580	<.001
Artistically Talented	15	6.41	65.33	10.187	<.001

Table 11

Mean Scores and Student's t ratio for Difference Between the Direct-Difference Test Means of the Academically Gifted and Artistically Talented Groups

Group	N	Mean	Student t-ratio	Probability
Academically Gifted	15	68.13	.3840	>.20
Artistically Talented	15	65.33		

Sub-Hypothesis 3

After being introduced to an art program for gifted students, sixth grade girls will improve more in artistic ability than sixth grade boys.

Null Hypothesis to be Tested

After being introduced to an art program for gifted students, sixth grade girls will not improve more in artistic ability than sixth grade boys.

Two t-tests were administered to determine the significance of difference between the mean scores of the group of girls on the Clark's Drawing Abilities pretest and posttest and the mean scores of the group of boys on the Clark's Drawing Abilities pretest and posttest. The scores on Table 12 show the girls were $x = 99.38$, $SD = 16.92$ on the pretest, $x = 167.07$, $SD = 12.78$ on the posttest. T-test calculations revealed the significance of the difference between the mean of the two tests $t = 11.434$. Scores for the group of boys were $x = 99.60$, $SD = 18.53$ on the pretest, $x = 165.94$, $SD = 18.81$ on the posttest. The t-test revealed the significance of difference between the means of the two

tests as t = 10.359. Since the obtained t scores for the girls (11.434) and boys (10.359) falls beyond 3.674 at $p < .001$ level, both t scores are significant. There was however no significant difference between the mean gain of the two groups, so the null-hypothesis was accepted. Tables 13 and 14 display the data used for the direct-difference test to find the differences between the criterion scores obtained by a group of girls and a group of boys. Table 15 presents the value of the girls as SD = 6.25, D = 67.70, and t value = 10.83 and the value for the boys as SD = 4.42, D = 66.40, and the value of t = 15.01 for the boys. This direct calculation of the standard error of the difference of the two groups revealed t = 10.83 for the girls and t = 15.01 for the boys. This calculations revealed the significance of difference beyond 3.674 at $p < .001$ for both groups.

An independent Student t-ratio test was administered to determine the significant difference between the direct-difference test means of the girl group and the boy group. As shown in Table 16, the Student t-ratio of the difference between the two means of the two groups as x = 67.70 for the girls and x =

66.40 for the boys. The Students t-ratio revealed t = .175 at p > .20. Since the t-ratio is less than 1.313 at p > .20, the difference is not significant.

Even though each group made a significant gain in artistic ability between the pretest and posttest, the difference between the gains of the two groups was not significant. Gender does not make any difference in increase in art abilities.

Table 12

Mean Scores, Standard Deviation and t-Test Scores for the Girl and Boy Group on the Clark's Drawing Abilities Pretest and Posttest

Group	Test	N	Mean Score	Standard Deviation	t-Test Score	Probability
Girls	Pretest	13	99.38	16.92	11.434	< .001
	Posttest	13	167.07	12.78		
Boys	Pretest	17	99.60	18.53		
	Posttest	17	165.94	18.81	10.359	< .001

Table 13

Scores of the Girls on Clark's Drawing Abilities Pretest and Posttest and the Difference between the Scores

Subject	CDAT	CDAT	Difference	
	Pretest	Posttest	D	D2
2	122	175	53	2809
5	86	161	75	5625
6	86	139	53	2809
7	99	156	57	3249
11	96	181	85	7225
15	94	168	74	5476
18	123	178	55	3025
23	97	163	66	4356
25	109	159	50	2500
26	60	191	131	17161
27	90	168	78	6084
29	112	159	47	2209
30	118	174	56	3136
Totals	1292	2172	880	65664
Means	99.38	167.07	67.70	5051.1
S.D.	16.92	12.78	21.63	

Table 14

Scores of the Boys on the Clark's Drawing Abilities Pretest and Posttest and the Difference between the Scores

Subject	CDAT	CDAT	Difference	
	Pretest	Posttest	D	D2
1	72	137	65	4225
3	92	159	67	4489
4	92	165	73	5329
8	91	162	71	5041
9	98	186	88	7744
10	95	144	49	2401
12	76	159	83	6889
13	128	176	48	2304
14	89	176	87	7569
16	132	177	45	2025
17	125	187	62	3844
19	99	143	44	1936
20	96	137	41	1681
21	81	189	108	11664
22	110	183	73	5329
24	85	149	64	4096
28	132	192	60	3600
Totals	1693	2821	1128	80166
Mean	99.60	165.94	66.40	4715.6
S.D.	18.53	18.8	17.51	

Table 15

Standard Error of the Means Difference, Value Difference, Value of t between the Clark's Drawing Abilities Pretest and Posttest for Girls and Boys

Group	N	Standard Error	Mean Difference	t-test Value	Probability
Girls	13	6.25	67.70	10.83	<.001
Boys	17	4.42	66.40	15.01	<.001

Table 16

Mean Scores and Student t-ratio for Difference Between the Direct-Difference Test Means of the Girl and Boy Groups

Group	N	Mean Score	Students t-ratio	Probability
Girls	13	67.70		
			.0175	>.20
Boys	17	66.40		

As a means of showing validity of the two groupings, a t-test was administered to determine the significance of the difference between the means of the academically gifted group and the artistically talented group on the California Achievement Test Scores with data shown in Table 17. The scores of the academically gifted students scores had a $\bar{x}$ = 280.73 with a SD = 12.20. The scores of the artistically talented group had a $\bar{x}$ = 214.13 with a SD = 75.70. The Critical Value of Student's Distribution table was used to determine the critical value of t, t = 3.3910, $p < .01$. A significant difference, as shown by the data, existed between the means of the academically gifted group and the artistically talented group.

Table 17

Mean Scores, Standard Deviation and t-Test Scores for the California Achievement Test for the Academically Gifted and the Artistically Talented

Group	N	Mean Score	Standard Deviation	t-Test Score	Probability
Academically Gifted	15	280.73	12.20		
				3.3910	<.01
Artistically Talented	15	214.13	75.70		

In conclusion the null hypothesis was rejected on the findings of the t-test which showed no significant difference of the means at the $p < .02$ level. The mean score of the artistically talented group was greater than the academically gifted.

Sub-hypothesis 1 There was no significant difference between the means of the boys and girls. Therefore, the null hypothesis was accepted.

Sub-hypothesis 2 The t-test score showed a greater mean gain score for the artistically talented so the null hypothesis was accepted.

Sub-hypothesis 3 The t-test score showed no significant difference between the gains of the two groups so the null-hypothesis was accepted. The hypothesis and sub-hypotheses are summarized in table 18.

The t-test administered on the mean difference on the California Achievement Test of each group showed a significant difference of $t = 3.391$, $p < .01$. The means of the academically gifted were significantly higher than the artistically talented group.

As an addition to the statistical information, the following observations are presented:

As a separate evaluation of the works in terms of originally, creativity, and technique, the art work of the academically gifted and artistically talented students were rated by a panel of three judges in terms of over, all superiority in creativity, originality and art technique. Two of the judges, who were artists as well as administrators in the art department of the local school district, selected the art work of the academically gifted as superior. The other judge, a professional artist and art teacher at a local university, selected the work of the artistically talented as superior.

The observation made by the researcher was that there was an overall superior technique in critiquing and talking about art by the academically gifted over the artistically talented. The artistically talented group appeared more confident in doing art than the academically gifted. Both groups had students who were superior in creativity, originality, and artistic ability.

Preview

Chapter Five will summarize the main points of the study, report findings and relevant conclusion, and

make recommendations for further investigation and research.

Table 18

Groups, Hypothesis, and t Values

Groups	Hypothesis	t Value	Accepted	Rejected
Academically Gifted Artistically Talented	There is a significant difference in artistic ability, creativity, and originality in academically gifted sixth grade students compared to artistically talented average sixth grade students.	1.5888		null-hypothesis rejected
Girls Boys	(Sub-hypothesis 1) Sixth grade girls are more artistically talented than sixth grade boys.	.0316	null-hypothesis accepted	

Academically Gifted Artistically Talented	(Sub-hypothesis 2) After being introduced to an art program following guidelines for a gifted and talented curriculum, the artistic ability of the academically gifted sixth grade student will improve more than the artistically talented sixth grade student.	13.0210 9.4092	null-hypothesis accepted
Girls Boys	(Sub-hypothesis 3) After being introduced to an art program for gifted students, sixth grade girls will improve more in artistic ability than sixth grade boys.	19.386 10.295	null-hypothesis accepted

CHAPTER FIVE

SUMMARY AND CONCLUSIONS

THE PURPOSE

The purpose of this study was to determine if there is a significant difference in artistic ability, creativity, and originality in academically gifted sixth grade students compared to artistically talented sixth grade students.

Restatement of Sub-Problems

1. Are sixth grade girls more artistically talented than sixth grade boys?
2. After being introduced to an art curriculum that follows guidelines for the academically gifted and talented, will art ability of the academically gifted sixth grade student improve more than the artistically talented sixth grade student?
3. After being introduced to an art curriculum following guidelines for the academically gifted and talented, will sixth grade girls increase more in artistic ability than sixth

grade boys?

Restatement of Hypothesis

There is a significant difference in artistic ability, creativity, and originality in academically gifted sixth grade students compared to artistically talented sixth grade students.

Restatement of Null Hypotheses

There is no significant difference in the artistic ability, creativity, and originality in academically gifted sixth grade students compared to that of artistically talented sixth grade students.

Sub-Hypotheses

1. Sixth grade girls are more artistically talented than sixth grade boys.
2. After being introduced to an art program following guidelines for a gifted and talented curriculum, the art ability of the academically gifted sixth grade student will improve more than the artistically talented sixth grade student.

3. After being introduced to an art program for gifted students, sixth grade girls will improve more in artistic ability than sixth grade boys.

Restatement of Sub-Null-Hypotheses

1. Sixth grade girls are not more artistically talented than sixth grade boys.
2. After being introduced to an art program following guidelines for a gifted and talented curriculum, the artistic ability of the academically gifted sixth grade student will not improve more than the artistically talented sixth grade student.
3. After being introduced to an art program for gifted students, sixth grade girls will not improve more in artistic ability than sixth grade boys.

RESEARCH PROCEDURES

An experimental group design was used. A group of thirty sixth grade students from Crestridge School participated in the study. The academically gifted

group of fifteen were selected by high California Achievement Test scores. The other fifteen or artistically talented were placed in the study by teacher nomination. The Clark's Drawing Abilities Test was given as a pretest. An art program following guidelines for the gifted and talented was introduced to the two groups of students. After the students had completed the seven week curriculum, the Clark's Drawing Abilities Test was again given to the two groups to measure the increase in artistic ability.

GENERALIZATIONS

The data analysis resulted in the following findings.

1. The art work of the academically gifted sixth grade students is not significantly different from the art work of the artistically talented sixth graders who are average or below average as indicated by the Clark's Drawing Abilities pretest and posttest scores.
2. The art work of sixth grade girls is not significantly more artistic than art work of

sixth grade boys as measured by the Clark's Drawing Abilities pretest and posttest scores.

3. There was a significant increase in artistic ability by both groups, after seven weeks of art curriculum. The artistically talented group showed the greatest increase as measured by the Clark's Drawing Abilities pretest and posttest scores.
4. The group of sixth grade girls increased significantly in artistic ability over the sixth grade boys as measured by the Clark's Drawing Abilities pretest and posttest scores.

The panel of three judges reported the following results of their critique. The two judges who are artists and art administrators selected the art work of the academically gifted as superior and the third judge an artist and art teacher at a local college selected the art work of the artistically talented as superior.

Findings from the observation by the researcher, indicated that the academically gifted were superior in researching, critiquing, and talking about art, while

the artistically talented appeared superior in their art making. Each group had several students who were superior in creativity, originality, and art technique as compared to other members of the group.

CONCLUSIONS

Although the findings did not provide evidence that art work of academically gifted sixth grade students is superior to the art work of students who are average or below average academically, it did provide evidence that implementing an art curriculum following gifted and talented guidelines would probably increase artistic ability when applied to a similar population of students. This evidence suggests the merits of investigation into art testing and implementation of an art curriculum for academically gifted and artistically talented students.

RECOMMENDATIONS

As a result of this study, it is recommended that the school district consider organizing a testing program of artistic ability to identify artistically talented students. Based on results of this study, the

implementation of an art program for the students who are identified as artistically gifted is recommended.

The art program for artistically gifted students could be organized similarly to the challenge program now used in the school district. This type of program would reach many talented students who do not have the opportunity to participate in a special class.

It is further recommended that the school district consider the following suggestions.

1. The testing procedure should begin at the fifth grade level.
2. Curriculum for the gifted art program should follow guidelines for an academically gifted program.
3. Teachers in the gifted art program should be art teachers, who also have training/course work in the gifted and talented area.

Recommendations for Further Research

This study was limited to one school in one school district; therefore, further research would be beneficial to see if similar results would be obtained. Other questions that could provide information include:

1. How did the art program for the academically gifted and artistically talented affect those thirty students in other areas of their curriculum?
2. Did the problem solving and critiquing help the students gain knowledge and self-confidence in applying these two skills in other areas of the curriculum?
3. Are creativity and originality tied to academic ability?
4. Will providing stimulation through an art curriculum for artistically talented and academically gifted students also promote creativity and originality in groups of students who are neither academically gifted or artistically talented? If so, to what extent? How will this increase in creativity and originality affect or benefit other areas of academic and personal achievement?

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C. STUDY - COMMISSIONS

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Education Commission for the States Action for Excellence.

1984, authorized by the Task Force on Education for Economic Growth, a subgroup chaired by Governor Hurt.

Institute of Personality Assessment and Research.

A proposal for a study of creativity and established on the Berkeley campus of the University of California in 1949. Made possible by a grant from the Rockefeller Foundation, its research task was to develop techniques and procedures for the assessment of personality. (1) What are the characteristics of persons who are highly effective in their personal lives and professional careers? and (2) How are such effectively functioning persons produced in our society?

Marland Report.

(1962). Marland, S. Education of the gifted and talented. Report to Congress. Washington, DC: U.S. Government Printing Office.

National Assessment of Educational Progress Procedure.

(1962). A handbook: 1978-1979, Art Assessment. Denver, CO: Education Commission of the States, 1981, 3-4.

National Commission on Excellence in Education. (1983). A nation at risk: The imperative for educational reform. Report to the nation and the Secretary of Education, United States Department of Education. Washington, DC: United States Government Printing Office.

APPENDICES

APPENDIX A

CLARK'S DRAWING ABILITIES TEST:

TEST ADMINISTRATION PROTOCOL

Administration of Clark's Drawing Abilities Test is easy and can be accomplished in little more than an hour. Each item requires 15 minutes; test instructions may consume an additional 15 minutes. The easiest way for students to take the test is to be seated at desks or tables where they will have a flat surface to work.

Required Materials

Basically, the only required materials are one test booklet and one sharpened, #2 pencil with an eraser for each student. It is advisable to have an extra supply of sharpened pencils equal in number to about 10% of the group. If possible, you should have class monitors assigned to pass out and collect the test materials.

It is advisable to have the name of the school, local community, two letter state abbreviation (i.e., IN for Indiana, etc.), and your name printed on a chalkboard or other visible display spaced in the room for those students who may need this information.

Test Administration

After students are seated, pass out test booklets and pencils (use monitors for this purpose if possible). Say, "Today you will be taking a drawing test. It only has four items. You will have 15 minutes to complete each item. Do the best work you can and keep working on each drawing until I tell you to stop."

"On the front of your test booklet, there is a place for your name. Please print your first and last name in this place. On the next line, there is a place for the name of this school. Please print (say the name of the school)."

"On the next two lines, fill in the name of this community (say the name of the community) and our State. Please use only our two-letter State abbreviation (say the two letters). On the next line, put in your present grade level and my name (if the teacher is administering the test) or the name of your teacher (say the name you want recorded here)." This may be the name of an art teacher, regular classroom teacher, or a subject matter specialist. The test booklets will be returned addressed to this name.

Ask students to put in the month, day, and year of their birth, if they know this information. If they do not know this information, please be sure this space is left blank at this time.

During administration of the test, tell students, "This is a timed test. Do not open the booklet until told to do so and do not turn any pages of the booklet until told to do so." After being sure that all students have booklets and pencils, say "Open your booklet to item #1. You will see a large empty rectangle on that page. In that rectangle, draw a picture of an interesting house as if you were looking at it from across the street. Make the best drawing you can. Use only the pencils we distributed. If your pencil breaks, hold it up in the air. Someone will come around and give you another. Are there any questions?"

Answer questions briefly, by repeating the instructions if necessary. If there are no questions, proceed. Say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you have not finished, you

have 5 minutes more. If you have finished, use this time to improve your drawing. Put the house you have drawn in a setting with a background."

At the end of 15 minutes, say "STOP! Turn the page to item 2. You will see a large empty rectangle on that page. In that rectangle, draw a person who is running very fast. Make the best drawing you can. Use only the pencils we distributed. If your pencil breaks, hold it up in the air. Someone will come around and give you another. Are there any questions?"

Answer questions briefly, by repeating the instructions if necessary. If there are no questions, proceed. Say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you are not finished, you have 5 minutes more. If you have finished, use this time to improve your drawing. Put the person you drew in a setting with a background. DO NOT turn back to your previous drawing."

At the end of 15 minutes, say "STOP! Turn the page to item 3. You will see a large empty rectangle on that page. In that rectangle, make a drawing of you

and some of your friends playing in a school yard. Make the best drawing you can. Are there any questions?"

Answer questions briefly, by repeating the instructions if necessary. If there are no questions, proceed. Say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you are not finished, you have 5 minutes more. If you have finished, use this time to improve your drawing." DO NOT turn back to any previous drawings."

At the end of 15 minutes, say "STOP! Turn the page to item four. You will see a large empty rectangle there. In that rectangle, make a fantasy drawing from your imagination. Be as creative as you wish and draw whatever you like. Make your drawing as interesting as you can. Are there any questions?"

Answer questions as before or, if there are no questions, say, "You have 15 minutes to complete this drawing. You may begin." Record the time on a note pad in front of you. At the end of ten minutes, say "Ten minutes are up. If you are not finished, you have

5 minutes more. If you have finished, use this time to improve your drawing. DO NOT turn back to any other drawing."

At the end of 15 minutes, say "STOP! Close your test booklet and put down your pencil." Look around the room to be sure this is being carried out by everyone. Say, "Pass your closed test booklets to the end of each aisle on the (right or left) side." Have monitors ready to collect the booklets. Say, "Pass your pencils to the (right or left) side." Have monitors ready to collect the pencils.

Thank students for their participation and excuse them to return to their normal school routine.

Preparing Test Booklets to be Graded

It is important that correct birthdates are shown on the front page of the test booklets; grading is based upon norms established for specific age groups. Be sure that a CORRECT birthdate is recorded on each booklet before returning the booklets for grading.

In the four numbered lines beneath the birthdate, on the front page of the booklets, teachers are asked to record optional information if it is available. Basically, the most important information requested is

the name of any standardized tests used in your school district at your students' grade level. If possible, a score for each student on each standardized test is to be reported. This information will be recorded and removed from the booklet before they are returned. This information will be used, if it is available, as a reliability check.

Finally, before the booklets are returned for scoring, a six digit identification number must be recorded on each booklet, by the teacher. These numbers will look like this: 88-24-13-08. The first two digits will designate the year the test was administered; "88" = 1988. The second two digits will consist of a two-number identification code assigned to each student. Use an alphabetical roster and assign numbers in numerical order from 01 - 99; "24" = a specific student in a class. The next two digits will report student age in years; "13" = thirteen years old. The final two digits will report what grade level the student is in at the time the test is administered; "08" = grade eight.

This identification number will be recorded on each booklet page and the persons who grade the tests

will NOT see the front page with each student's personal information.

Thank you for your cooperation in this preparation of booklets to be graded.

When all test booklet preparation has been completed and checked for accuracy, they should be sent to:

A.R.T.S. Publishing Co., Inc.
132 Glenwood West
Bloomington, IN 47401

CLARK'S DRAWING ABILITIES TEST

Name _____

School _____

Community _____ State _____

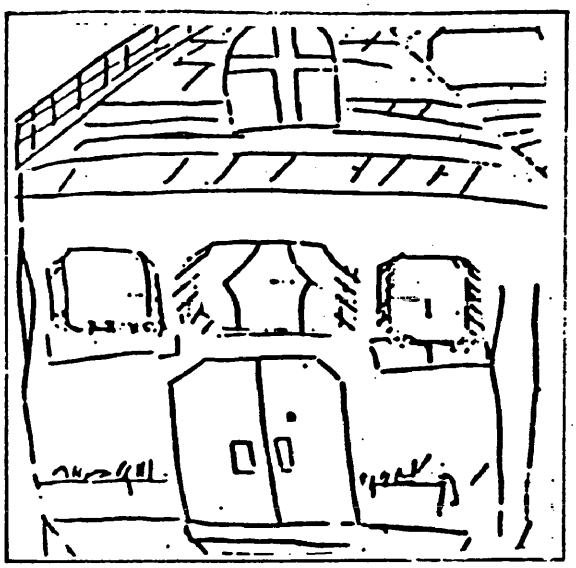
Grade _____ Teacher _____

Birthday: Month _____ Day _____ Year _____

1. _____
2. _____
3. _____
4. _____

ID Number _____

Make each drawing look the best that you can.



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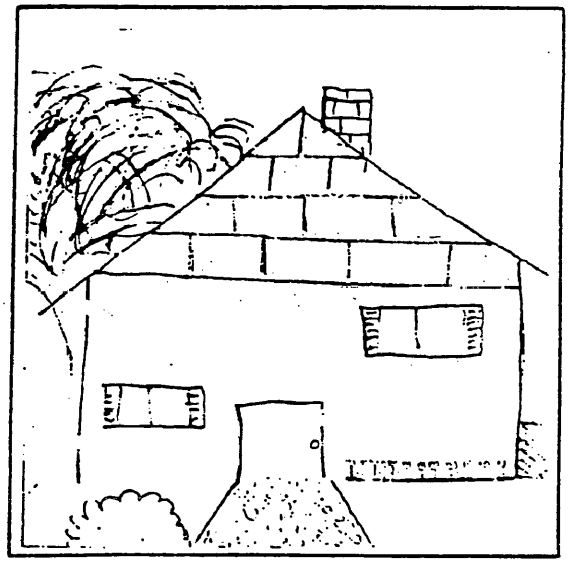

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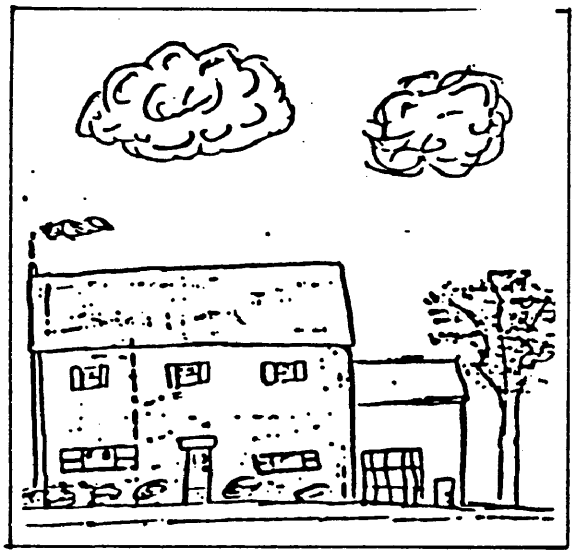

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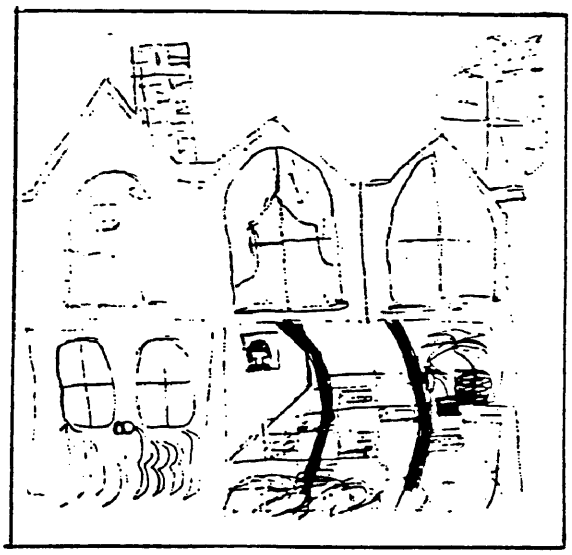

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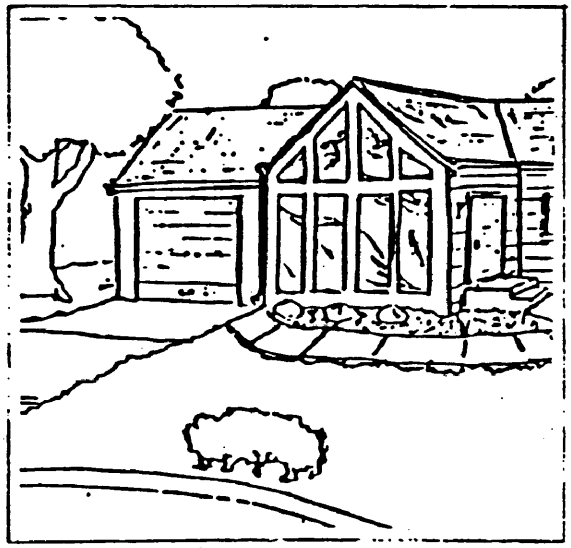

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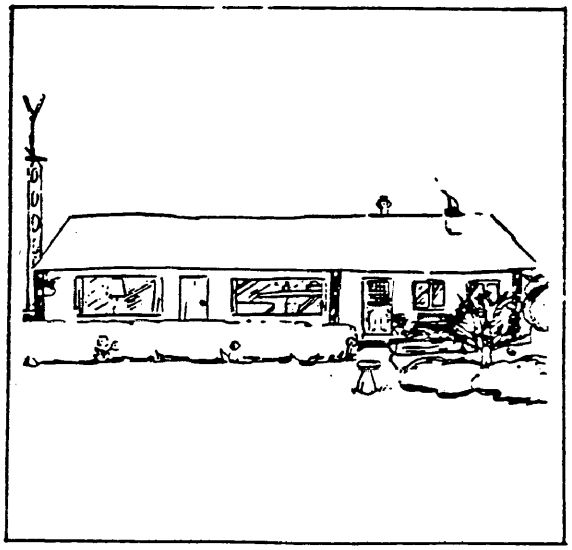

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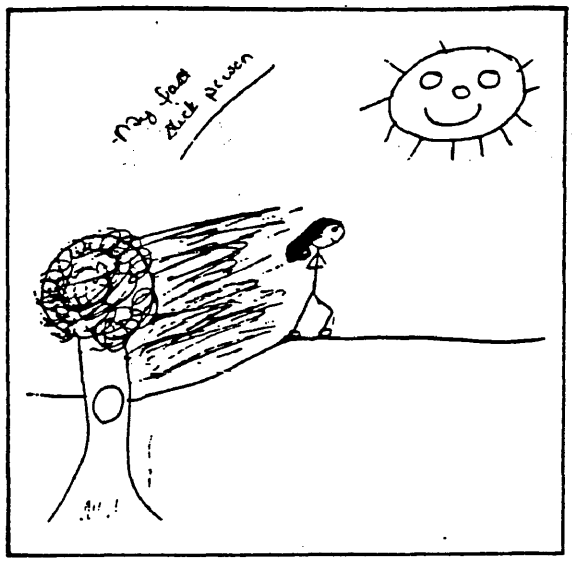

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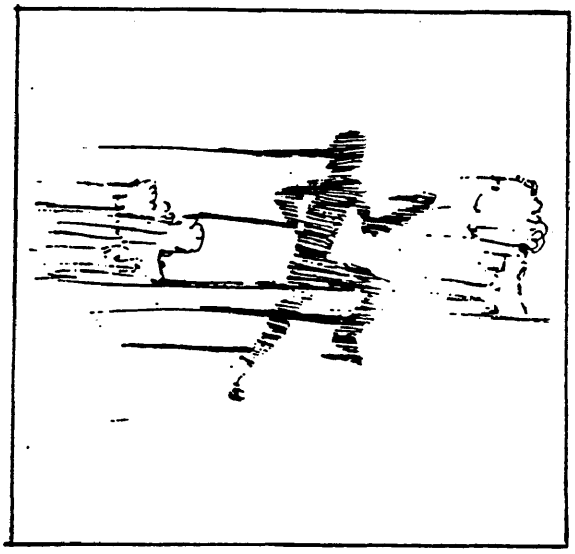

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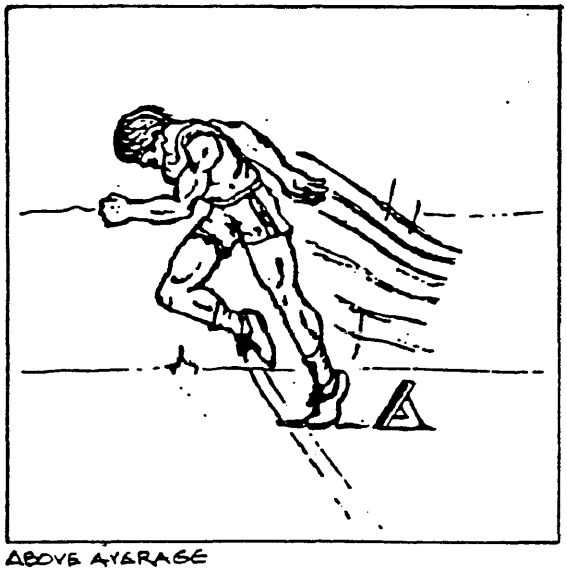

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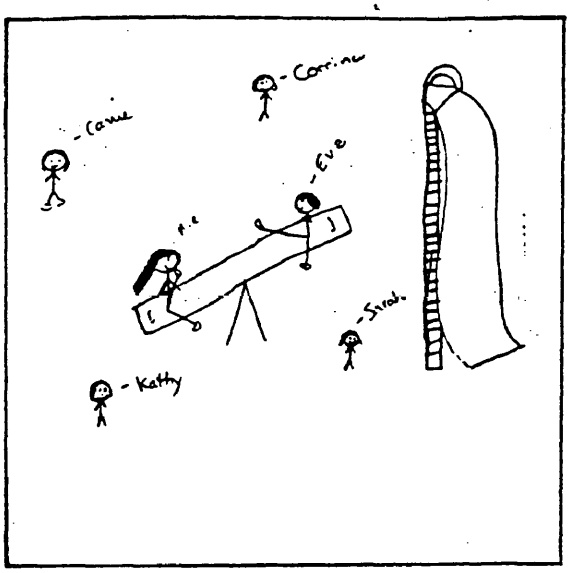

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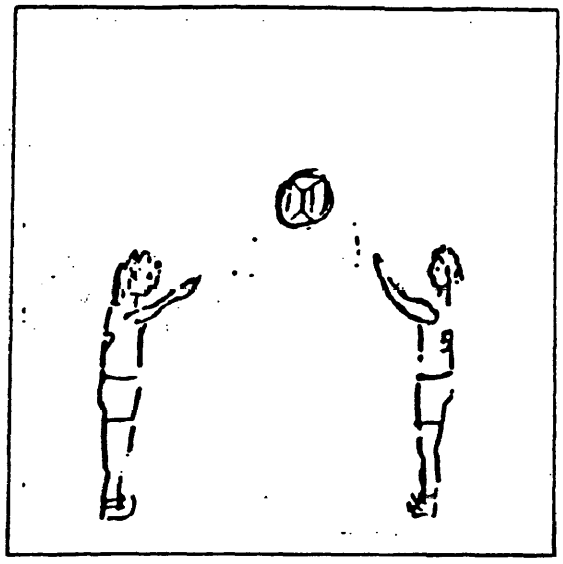

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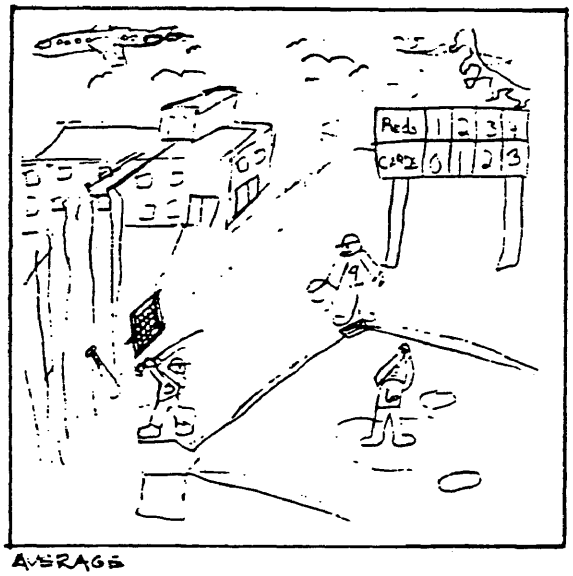

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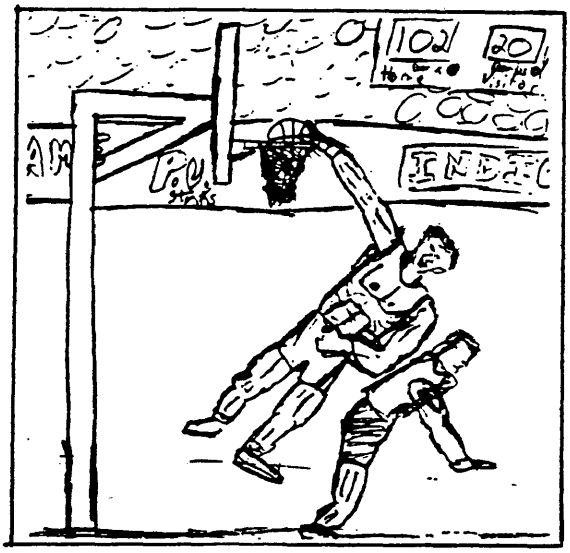

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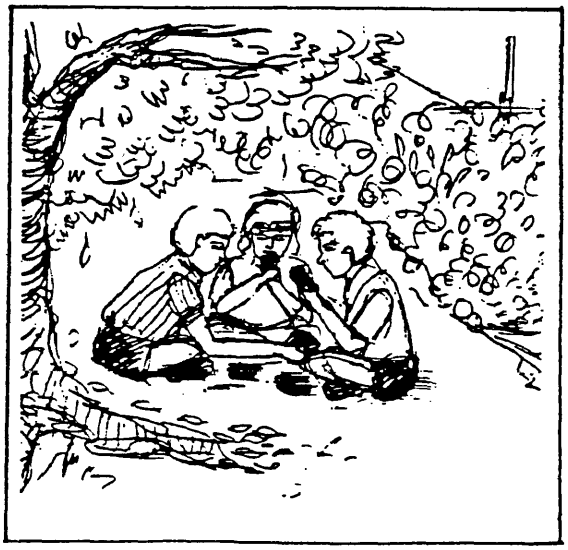

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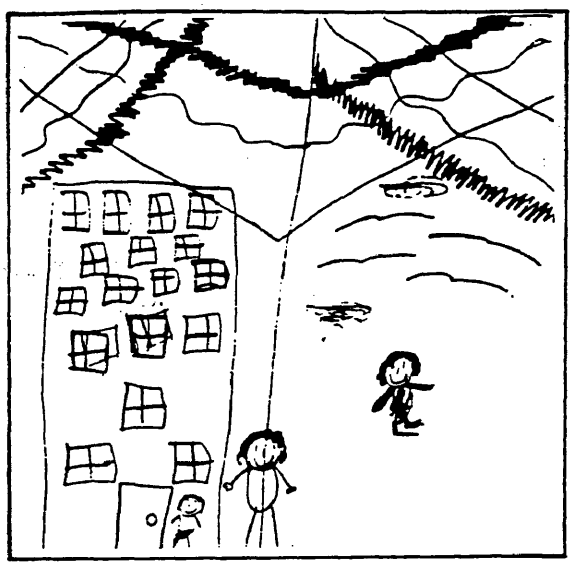

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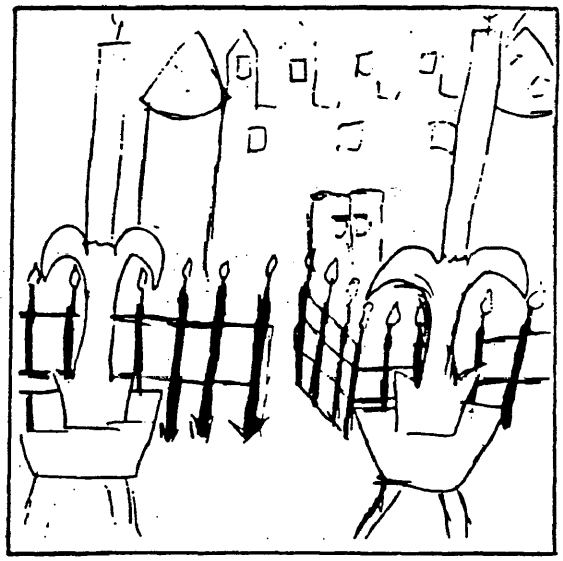

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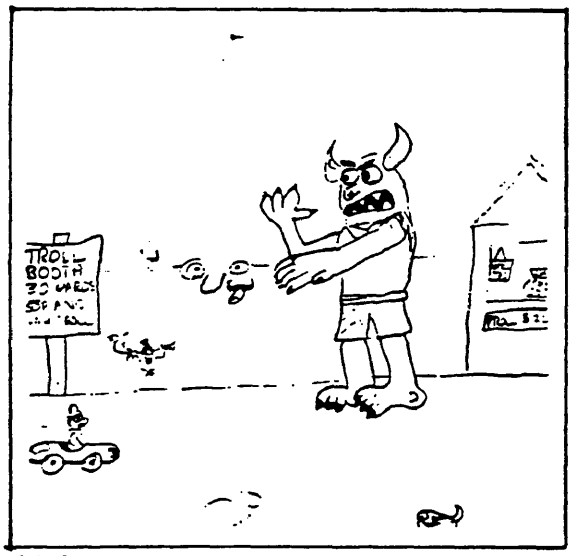

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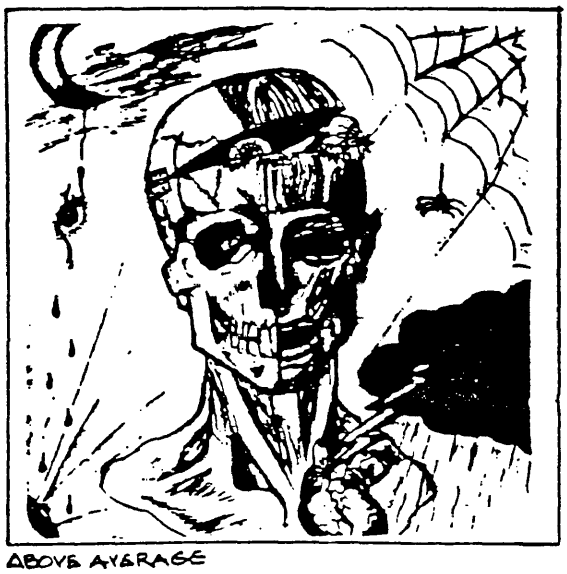

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CLARK'S DRAWING ABILITIES TEST

Item Criteria

I. SENSORY PROPERTIES

A. LINE QUALITY: visual interest. Lines may exhibit many qualities based upon the pressure used to draw them, their length, direction, or location. Regarding line quality among these factors, drawings are graded as:

1. Lines mostly dissimilar, not appropriate to subject

2. Lines very ordinary, mostly uninteresting

3. Lines appropriate to subject

4. Lines are expressive, interesting, contribute to composition

5. Lines are unique, innovative, unusually interesting.

B. SHAPE: Nonvariation/Variation. A shape may exhibit many qualities such as outline/non-outline, size, type, or location. Regarding variation among these qualities, drawings are graded as:

1. Shapes are mostly similar, minimal variation

2. Half the shapes are varied, half are similar

3. Shapes are mostly varied

4. Appropriate shape variation, effectively used

5. Unique, original, innovative use of shapes

C. TEXTURE: Amount and Variety. Texture may be used to increase interest, define area, or represent actual texture. Regarding texture among these uses, drawings are graded as:

1. Minimal amount and variety of textures

2. Moderate amount and variety of textures

3. Sufficient amount and variety of textures

4. Appropriate use of textures

5. Unique, original, innovative use of textures

D. VALUES: Lightness and Darkness. Value may be used to indicate a light source, shapes of objects, increase interest, or add depth. Regarding value among these uses, drawings are graded as:

1. Minimal amount of shading or values

2. Moderate amount of shading or values

3. Sufficient amount of shading or values

4. Appropriate amount and use of shading or values

5. Unique, original, innovative use of values

II. FORMAL PROPERTIES

A. RHYTHM: Repetition and Variation. Rhythm is attained by ordered or regular recurrence of sensory properties. It depicts a continuance, a flow, or a feeling of movement. Regarding rhythm, drawings are graded as:

1. Minimal amount of rhythm

2. Moderate amount of rhythm

3. Sufficient amount of rhythm

4. Appropriate amount and use of rhythm

5. Unique, original, innovative use of rhythm

B. BALANCE: Appropriate Amount. Balance is

attained by equality of weight, attention, or attraction among the sensory properties used. Regarding balance, drawings are graded as:

1. Minimal amount of balance

2. Moderate amount of balance

3. Sufficient amount of balance

4. Appropriate and varied balance

5. Unique, original, innovative use of balance

C. UNITY: Harmony and Variety. Unity is attained by effective harmony and variety between sensory and formal properties. Regarding unity, drawings are graded as:

1. Minimal amount of unity

2. Moderate amount of unity

3. Sufficient amount of unity

4. Appropriate and effective unity

5. Unique, original, innovative use of unity

D. COMPOSITION: Effectiveness. Composition is the overall arrangement of all the parts in a drawing and is effected by any and all of its parts. Regarding composition, drawings are graded as:

1. Incomplete composition

2. Composition is effective in only part of the image.

3. Sufficient composition

4. Appropriate and effective overall composition

5. Unique, original, innovative sense of composition

III. EXPRESSIVE PROPERTIES

A. MOOD: Dynamic States. Mood is communicated by the combined effect of subject matter and expressive content. Regarding mood, drawings are graded as:

1. Inappropriate or incomplete mood or expression

2. Some mood or expression, but in only part of the image

3. Sufficient but incomplete mood or expression

4. Appropriate, effective, complete mood or expression

5. Unique, original, innovative depiction of mood

B. ORIGINALITY: Non-imitativeness. Originality is shown as inventiveness, uniqueness, or freshness of aspect. Regarding originality, drawings are graded as:

1. Imitative in all parts

2. Minimal originality in most parts

3. Moderate originality, but with imitative parts

4. Sufficient originality with few imitative parts

5. Originality used throughout

IV. TECHNICAL PROPERTIES

A. TECHNIQUE/CRAFT: Technique is determined by the manners and skills an artist uses with

tools and materials. Regarding technique, drawings are graded as:

1. Minimal or inappropriate amount of technique

2. Moderate amount of technique

3. Sufficient amount of technique

4. Appropriate amount of technique

5. Unique, original, innovative amount and use of technique

B. CORRECTNESS/SOLUTION TO THE PROBLEM: This drawing abilities test assigns specific drawing tasks; testees can be graded for correctness to the solution of each problem. Regarding correctness, the drawings are graded as:

1. Inappropriate to the problem assigned

2. Appropriate to the problem, but drawn incorrectly

3. Appropriate to the problem and drawn correctly

4. Correct to the problem assigned and drawn correctly

5. Unique, innovative, individualized solution to the problem and drawn inventively

V. TITLE

A. TITLE: Writing a title is an extension of the drawing activity. Titles may be arbitrary, descriptive, or metaphoric.

1. No title or explanation

2. Inappropriate reference to drawing

3. Simple description of drawing (concrete)

4. Elaborates upon drawing (abstract)

5. Unusual, humorous, satiric, metaphoric, or play-on-words

APPENDIX B

RENAISSANCE TIME LINE

1300	Giotto
1346	Gun powder
1440	Gutenburg Printing Press
1450	Eramus
1452	Leonardo born
1475	Shakespeare
1485	Michaelangelo born
1483	Raphael
1492	Columbus discovered America
1495	Leonardo paints the Last Supper
1498	Michaelangelo creates Pieta
1500	Durer born
1503	Leonardo paints Mona Lisa
1508	Michaelangelo paints Sistine Chapel
1513	Raphael paints Madonna
1517	Martin Luther
1519	Magellan
1520	Raphael dies
1543	Copernicus
1564	Michaelangelo dies

APPENDIX C

HOW TO CRITIQUE A PIECE OF ART

1. Identification:
    a. Object: title, date, artist, medium
    b. Subject matter: biblical, mythological, historical
    c. Style: realistic, abstract, expressive.
2. Analysis:
    a. Composition: what are the dominate elements? color, line, shape, space
3. Content:
    a. What is the artist trying to say?
        1. recording history
        2. social statement
        3. ornamental, strictly for decoration
        4. evoking emotion
    b. What was your very first impression?
    c. What do you like about it?
    d. What did you dislike?
    e. How does the piece affect you?
        1. sad, happy, curious, angry
    f. Is it a good piece of art?

APPENDIX D

INTRODUCTION TO

MAKE MONA LISA MODERN LESSON

1. Ask them if they knew what "Renaissance" means. It is a rebirth of ideas and art, a time of painting, religion, discovery, and science. The artists involved in the High Renaissance were: Leonardo Da Vinci who lived to be sixty-seven years of age, Michaelangelo lived to be eighty-nine, Raphael who died at the age of thirty-six, and Durer who lived to be fifty-three. This was an age coming out of the Dark Ages.
2. Show the time line as an example of the many exciting things that were happening during the Renaissance.
3. Ask students to pick one print and in groups of three orally critique the painting for the rest of the class.
4. Introduce the Mona Lisa project and talk a little about the history of the Mona Lisa and tell how it actually looked when I saw it in the Louvre.

MAKE MONA MODERN

Problem: To make Mona Lisa modern or up to date, but still recognizable as the Mona Lisa.

Procedure:

1. We would look at three prints representing portrait painting.
2. We would then talk about why portraits were painted and the importance of portrait painting before the invention of the camera.
3. We would look at the prints of the Mona Lisa; talk about style, subject matter, "madonna-like" pose, who painted it, what the outstanding feature is, what makes it original and sets it apart from other paintings.
4. We would also talk about the historical background of the Mona Lisa:

   The Mona Lisa's real name was Mona Lisa La Gioconda. Her portrait is an oil painting on panel, 30 x 20. Mona Lisa was twenty-four when her husband Francisco commissioned Leonardo to paint her portrait. It took

Leonardo four years to paint it (1503 - 1507). Mona's husband did not like the picture after it was finished. He said it made his wife look very unattractive so he would not pay Leonardo for it. Leonardo kept the picture. It was found in his home after his death. The Mona Lisa now hangs in a protective box in the Louvre Art Gallery in Paris and is considered priceless.

5. We would then discuss different methods of up-dating Mona; hair style, dress, and background.

Materials:

1. 18 x 24 gray bogus paper (with a frame drawn around the outside edge).
2. Pencils, erasers, crayons, wipes, black markers.

Method:

1. Within the lines sketch the general shape of Mona. Make her touch three sides of the paper.
2. Sketch in a simple background.
3. With a black marker, go over the pencil

lines.

4. Begin adding color--work from the inside out, use paper towel to rest arms to avoid smears, only color up to the black marker lines.
5. After the picture is finished, design an elaborate frame, use marker, then add color.

Evaluation:

The students are to present their pictures to the school in a display.

APPENDIX E

ARTIST RESEARCH

Name _____

Date _____ Artist's Name _____

Country in which he was born _____

His style of art: _____

His contribution to the art world:

_____

_____

Works of art:

_____

_____

His social status: _____

Did he make a social statement or record history? _____

Explain your answer. _____

_____

What was the world like during his life time? _____

_____

_____

If you could transport him to the future, would his art be famous in 1990? _____ Explain your answer.

_____

RESEARCH REPORT GRADING CRITERIA

1. Content of Material
    a. Pertains to facts listed on sheet
    b. Good explanations related to subject matter
    c. Good elaboration

Total of sixty points

2. Presentation
    a. Spoke out so everyone could hear
    b. Explained so everyone understood
    c. Answered questions
    d. Was well prepared
    e. Originality of presentation and use of visual aides

Total of forty points

One hundred points possible

APPENDIX F

Introduction for Collage Lesson

1. The students were shown prints of collages by Picasso, Braque and Breaden (I).
2. They were then asked what a collage was.
3. They then talked about the prints being abstract pieces of art and what made them abstract.
4. We then discussed composition.
   a. They were to touch three sides of paper, no floaters, color harmony, some large and small shapes, use over-lapping.
5. We talked about the history of collage.
6. They were then to work in groups of three, with one person the chairman, one making a quick sketch, and one the spokesperson.
7. They were to decide who was going to draw what and start. They should first lay the finished pieces on the background to see how they would look; then working from back to front, glue the shapes down, add marker, or what other color they wanted.
8. Before they began the production, I used

imagery to set the stage for the collage. I had them close their eyes and imagine it is a thousand years in the future. Earth is no longer the mother planet, and all of the people have immigrated to a new planet called Darkover. You and your family have lived on Darkover so long no one remembers what life on Earth was like. You are to pretend you are a member of a young exploring club whose task it is to return to the planet Earth and collect data and artifacts that represent what people and culture were like on Earth in the year 1990.

You enter your spaceship with a group of ten other young explorers. The sign goes on to fasten your seat belt and you blast off into space. With the new time folding device, it will only take four hours to reach Earth. While you are traveling through space, you try to imagine what Earth could have been like. You have listened to history books which tell what it may have been like, but to see it first hand will be exciting.

The ship slows down and prepares for a landing. You unbuckle your seat belt, and the door slowly opens. The bright light hurts your eyes. You blink and step out into the rubble that was once a city. You walk a few feet and discover a sign practically buried beneath some rocks. You bend down to read it. You brush some of the dirt away and see the letters OMAHA. Open your eyes and imagine you are that explorer looking for objects that represent life in Omaha in 1990.

COLLAGE OF ART STATEMENT

Problem: To create in collage form an art piece that personifies Omaha in 1990.

Procedure:

1. Show different techniques in paper construction.
2. Talk about the art form collage.
3. If a person from another planet landed in Omaha 100 years from now, looking for something that would tell him about the civilization that lived in Omaha in 1990,

what objects would describe our world?

Materials:

1. Large pieces of construction paper for background, other smaller pieces, all colors, tissue paper.
2. Scissors, glue, rulers.
3. String, yarn.
4. Crayons.

Method:

1. Divide into groups of three.
2. Make a quick sketch of your composition.
3. Begin constructing, and attaching pieces to background.

Evaluation: Each group explains how it solved the problem.

APPENDIX G

INTRODUCTION TO THE SURREALISM

WATERCOLOR PICTURE

1. Introduce the prints by Dali and Magritte.
2. Ask if they know what style of art they are and explain Surrealism--Surrealism began in 1917 after World War I, as a revolt against the art that was being produced by the "old men" of art, and the horrors of war. The artists involved in this movement were young nineteen and twenty years old. Some had fought in the war. Their first exhibition was in 1925. The public was shocked and outraged. The artists presented in the exhibition were: Picasso, Magritte, and Dali. It is said that Dali personified surrealism not only in his art (which he continued to produce until he died in 1989) but also in his appearance.
3. The students are to pick one print and in groups of three critique it for the rest of the class. They are to explain some of the

symbols in the paintings.

4. I would then tell my dream which I have had over and over for a number of years and show the picture I drew of it.
5. We would then talk about dreams, what makes them so vivid that we remember some and not others. Is it in color? What is the setting? Are you in it or a spectator? Is it a nightmare?

Dream Picture in Watercolor

Problem: To create the overall feeling of a dream with color. The observer must be able to interpret and actually experience the dream from the picture.

Procedure:

1. I demonstrated watercolor techniques.
2. We talked about different types of dreams; ones that are vivid, and how color can create feelings. They wrote down a few sentences about the content of the dream they intend to paint.
3. I showed prints of Surrealists Dali, Magritte, and Chagall.

Materials:

1. Watercolors, brushes, sponges, water containers, tape.
2. Watercolor paper 8 x 12, drawing boards.

Method:

1. They were to wet down the paper, and tape it to the drawing board.
2. Sketch their picture with a small brush and neutral color.
3. Then fill in the picture with other colors.

Evaluation: Students are to show their pictures to the class telling how they used color to express feeling of their dream.

APPENDIX H

LESSON PLAN SCHEDULE

September 17, 1990

I met with parents of students selected for the program. Four parents were present. I explained the program to them.

September 24, 1990 - Day 1

I administered the "Clark's Drawing Abilities Test."

October 1, 1990 - Day 2

1. I had students fill out the interest sheet (K).
2. I went through the folders with the students and explained the critique sheet (C) and vocabulary words (J).
3. I introduced the Renaissance Period with the time line and showed prints of paintings by Michaelangelo, Da Vinci, Raphael and Durer (I). In groups of three, the students critiqued one print for the rest of the class.
4. I introduced the lesson Make Mona Lisa Modern (D).

October 8, 1990 - Day 3

I demonstrated oil pastels and marker techniques. The students then began to add color to their drawings.

October 15, 1990 - Day 4

1. The students were told to finish up their Mona pictures during the class period.
2. I told the students their Mona Lisas would be on display for Parent-Teacher Conferences that week.
3. I handed out and explained the research paper (E).

November 5, 1990 - Day 5

1. The students reported on their research papers, while I took notes and scored the responses.
2. I introduced "Collage of Art Statement" lesson (F). Showed prints of paintings by Picasso, Braque and Breaden (I).
3. The students finished that project during class and then as a group of three orally critiqued their pictures for the rest of the class.

November 12, 1990 - Day 6

1. I introduced six Surrealism prints by Magritte and Dali (I).
2. The students in groups of three picked a print and critiqued it for the rest of the class while I took notes.
3. I introduced the project "Dream Picture" in watercolors (G).
4. The students did the drawing for the dream picture.

November 19, 1990 - Day 7

1. I demonstrated several watercolor techniques.
2. The students finished their paintings and shared them with the rest of the class.
3. I handed out the certificates (L).

November 26, 1990 - Day 8

I administered the "Clark's Drawing Test" (A) again to compare with the first test.

APPENDIX I

PRINTS USED

Prints used from Joslyn:

Renaissance Period

Da Vinci: "Mona Lisa," "Last Supper," "Madonna of the Rocks"

Michaelangelo: "Pieta," Sistine Ceiling, "Seated Figure"

Raphael: "Madonna and Child," "Donna Velata," "Seated Woman"

Durer: "Last Supper," "Women of Nurenburg," "Rhino"

Collages

Picasso: "Still Life with Chair Caning" (1912), "Still Life" (1914)

Braque: "Still Life with Chair" (1913)

Bearden: "Blue Interior Morning" (1968)

Surrealism

Dali: "Nature Living and Dead" (1956), "Last Supper" (1949), "The Hand, Remorse" (1955), "Egg on the Plate, Egg off the Plate" (1957), "Madonna and Child" (1950)

APPENDIX J

VOCABULARY WORDS, INTEREST INVENTORY, CERTIFICATE

Vocabulary Words

Words and terms to know:

abstract	forms so simplified that they have no shape.
analogous	colors which are side by side neighbors on the color wheel.
biomorphic shapes	shapes that look like the freely developed curves in organic life (amoeba)
collage	composition made by assembling, pasting, and gluing materials to surface.
complementary colors	two colors which are directly opposite each other on the color wheel.
composition	organizing all of the elements of a work of art into a harmoniously unified whole.
cool colors	blue, green, violet,

	associated with water, sky and grass.
expressionism	a style of exaggeration and distortion of line and color abandonment of naturalism in favor of a style of greater emotional impact.
geometric shape	shapes which are regular in character and follow rules of mathematical construction.
hue	a color.
Impressionism	name given to the most important artistic movement of the 19th century and the first Modern Movement. The name came from a painting of Monet's, 1872, "Impression, Sunrise."
intensity	colors' brightness and dullness.
landscape	an outdoors painting or drawing of nature.
media	materials used for art

	expression, paint, clay, wood, etc.
monochromatic	one single color plus its tints, tones and shades.
neutral colors	white, black, gray.
perspective	a mechanical system of creating the illusion of a three dimensional space on a two dimensional surface.
portrait	painting, drawing, etc. that represents one person or a group of people.
primary colors	red, blue, yellow, colors of purest hue that cannot be mixed from other colors.
realism	representing an object in art in its real state or form.
secondary colors	colors mixed in equal amounts of primary colors, orange, green, violet.
view finder	small square of cardboard with square cut out in the center, used to look through to help

	with composition in landscapes and still life pictures.
warm colors	red, orange, yellow, brown, associated with fire, sun and earth.
Renaissance	regeneration, rebirth, revival of art in the 15th century.
Surrealism	works of pure dream-world, fantasy, dictated by the artist's subconscious mind and vision.

INTEREST INVENTORY

1. The things I like about art are _____.
2. Things I like least about art are _____.
3. The things I would like to learn more about art _____.
4. Things I like to do at home _____.
5. I like to read books about _____.
6. My favorite kinds of movies and television shows are _____.
7. I like to take trips to _____.
8. When I grow up I want to be _____.
9. My favorite art activity is _____.
10. Some of the things I'd really like to do in art are _____.
11. My favorite artist is _____.

Name _____ Date _____

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in
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