DEFINITION OF CREATIVITY:

OM VERSUS NON-OM

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CHAPTER I

Introduction

Creativity is a term that has had varied definitions over the past century. In 1950, J.P. Guilford indicated that less than 2 percent of the literature in psychology was devoted to creativity. He described the subject of creativity as an area in which many have feared to tread. Definitions of creativity have often been misleading; they may either be too complex or too elusive. Operational definitions of creativity have often been too narrow.

Why is a definition so important? A definition is "the act of stating a precise meaning of significance" (Morris, 1973). In order for an individual to even become aware of that which is labeled creativity, the term creativity must have meaning. Granted there are many things we cannot define, but if something has no agreed upon meaning then we cannot talk about it. Therefore by attempting to construct a definition, we may become more aware of the meaning of that which we label as creativity.

A definition secured from creative individuals could be incorporated into the educational system to assist in the growth of creativity in individuals. Creative individuals produce creative ideas. With increasing global

interdependence, increased rates of technological change, and exhausted natural resources the need for creative ideas is obvious.

Traditionally there have been four different perceptions or viewpoints of creativity (Klein, 1982): (a) creativity as product, (b) creativity as environmental condition, (c) creativity as personality, (d) creativity as process. When one uses a product definition of creativity one is concerned with problem solutions, such as expression of feeling in works of art, inventions or new designs. A definition using the environmental perspective is concerned with the external factors which enhance creativity. An environment which is safe, psychologically secure, open (intellectually), supportive, non-competitive, filled with stimulating material and which rewards creative production can be described as a creative environment. Parnes (1967) believes that environmental conditions can encourage and enhance creative abilities.

Looking at creativity from the perspective of personality was proposed as early as 1870 by Galton in Hereditary Genius. For example, he wrote that mental capacities are inherited and follow certain laws of transmission which can be determined by observation. Creative personality characteristics include curiosity, external sensation seeking, independence, non-conformity, etc. (See Bull and Fishkin, 1985 for a more extensive list). The view of

creativity as a process was described by Stein (1968) as a process of formulating and testing hypotheses and communicating the results. Another example was provided by Taylor (1975) who believed the creative process was the capacity to transform or find new and unexpected relations between bits of information. Each of the four perceptions will be dealt with more fully in the literature review.

Because of the percentage of the population which has come in contact with OM (formerly Olympics of the Mind, henceforth to be known as Odyssey of the Mind) considerable space will be devoted to the description of this organization. OM, founded by Dr. Samuel Micklus and Dr. Theodore Gourley in 1978, is a creative problem solving competition which uses process models. An example of a creative problem solving model is presented in OK-OM Coaches Training Manual (Bull and Fishkin, 1985). The process is described in eight stages:

1. Problem awareness - brainstorming of all possible related problems
2. Problem definition - restatement of the problem
3. Preparation - idea finding, brainstorming of possible solutions
4. Frustration - satisfactory solution has not been found
5. Insight - solution finding, regrouping, brainstorming
6. Testing of solutions by criteria or experimentation
7. Elaboration, redefinition
8. Acceptance of final solution

OM is a program primarily to help meet the needs of highly creative individuals. Creative students have been identified by the United States Office of Education as one segment of the gifted population.

OM was modeled after athletics because it was felt that varsity sports programs were the best gifted programs available (Micklus, 1984). OM is a competition in which creative problem solving teams are presented with difficult and unclear problems which are used as the themes to be plugged into the problem solving models. The problems require students in three divisions to create an actual product or solution which they present as their entry in the competitions. These three divisions in the OM competition are Division I, which consists of grades K-5; Divison II which consists of Grades 6-8; and Division III which consists of grades 9-12. Within each division are teams made up of five to seven members who have joined together to compete against other teams. There are three parts to the competition, each scored separately. Points are awarded for long term problems (200 points), spontaneous problems (100 points), and style (50 points), these terms are described below. The team with the highest total score wins the division, with 350 points being a perfect score.

The long term problems change every year and cover a wide range of interests and subject areas. These "long term problems" (Micklus and Micklus, 1986), have specific

design specifications and monetary limitations. Members of the OM Association receive these problems well in advance of each competition. Each team presents a product or solution at a competition which is judged and awarded a score with the maximum being two hundred points.

A couple of examples of long term problems are as follows: (1) Wild Vibes (Bull and Fishkin, 1985): Your team is to create musical instruments and play from a specific selection of tunes. Your team will be your "band." (No previous musical ability is necessary.) The tune/tunes must be played for a minimum of one minute and a maximum of two minutes, (2) Miner's Helper (Bull and Fishkin, 1985): Your team is a group of mining engineers. You are to design a Miner's Helper which, when used, will allow you to explore abandoned gold, silver, and other mines for valuable minerals without endangering humans. The Spirit of the Problem is to create, design, construct, and operate a Miner's Helper which will travel along a path to an area where it will gather materials. The limitations, competition description, site and set up procedures, and any other rules or regulations which must be followed are also listed for each problem.

Teams also compete in spontaneous problem solving. Each member of a team (up to a maximum number of 5) is required to participate or respond to verbal or hands-on problems. These problems challenge the students'

abilities to think on their feet (Micklus and Micklus, 1986). Spontaneous problems require team work as well as fluency and flexibility of thinking in order to evoke creative responses. The more creative the response, the more points it will receive. The maximum number of points that can be awarded is one hundred points.

Examples of spontaneous problems are as follows:

(1) Name as many kinds of _____ as you can.

a. gear(s)
b. praise
c. signs

(2) Name as many things as you can that are like _____ and why they are alike.

a. flowers
b. cakes
c. spys

Style is the third area in which teams compete. Style is defined as "that which is added to the solution of the problem or the solution, but is not required to solve the problem" (Micklus and Micklus, 1986). Style points are awarded for completing specific steps as well as, in some cases, for the aesthetics of the presentation of the long term problem. A panel of two or three judges determine the number of points to be awarded for this segment of the competition with the maximum number of points being fifty.

As mentioned earlier, the scores for the long term and spontaneous, and style are combined for a total score which is then used to determine the winning team for each

problem in each division. OM consists of at least two levels of competition, State and World. Regional competitions are held in some states and at times local competitions are also required. The winners of these competitions move on to the State level competition. The winners of each State level of competition are advanced to the World level competition which consists of teams from each state as well as teams from several foreign countries.

Involvement with OM gives students hands-on training in creative problem solving. Teams must design and produce their own problem solutions (Micklus and Micklus, 1986). OM encourages creative thinking by providing opportunities to solve problems using imaginative, creative processes.

Through the use of the creative process of creative problem solving, creative skills are developed (Micklus, 1986). OM views creativity as a skill that can be taught. Creativity, like physical strength, is a chacteristic of all human beings and can be developed. Like physical strength, some possess more of this ability than others and therefore will profit more from exercises to develop the ability (Gourley and Micklus, 1984).

OM is a competition. There are winners and non-winners, traditionally called "losers", in the competition. Students who do not make a team or who do not win a competition do get practice in creative problem solving. Is their view of creativity affected? Gourley and Micklus

(1978), founders of OM, believe the mind can be trained through practice and exercise to reach its fullest potential. "Trained", "practice" and "exercise" are behavioristic terms. For the behaviorist, creativity need not be studied or explained because there is no creativity in the sense of some specific process involved in producing something truly new (Weisburg, 1986). Either the product is really something old or a new product is produced by accident. Therefore how can behaviorial procedures be used to enhance creativity?

Does repetition or pressure to win enhance creativity? True, the more competitors there are, the fewer people will win. What about the increase in "losers" who are the by-products of a competition. Is their definition of creativity affected or effected by the OM experience?

Torrance (1965) said it cannot be denied that competition is one means by which challenge occurs, and challenge, if not overwhelming, is apparently conducive to creative achievement. However, what are the cumulative affects of competition of creative behavior? Will non-winners view their lack of success as the inability to meet the challenge or as the inability to be creative?

Mead (1954) observed that Americans had a narrow competitive range; like against like; success must result from effort, abstinence and suffering. The very term used to label children of high intellectual ability, "the

gifted", indicates that their success has been given, not earned. American society tends to grade or rate attributes rather than allow uniqueness and incomparability. Competitions set rules and regulations to which participants must abide and conform. Victories are earned by meeting the standards set by the competiton. Creative individuals who have learned independence of thought and deed, become intrinsically motivated and set their own standards (Clark, 1983). Therefore it seems paradoxical to place competition and creativity together, especially in American society.

In American society, males are taught to compete and winning leads to glory and leadership (Parsons and Bales, 1955). In the female societal structure one gains by losing and loses by winning. Gifted women have found it necessary to hide their abilities in order to be at one with others (Bakan, 1966). Conformity is prized and heavily reinforced in females by parents, peers and teachers. The very nature of creativity is uniqueness. Might these societal pressures to conform or play specific roles have an effect on one's definition of creativity?

Female peers add to this pressure to conform by rejecting a girl who appears too smart or too successful (Shmukler, 1985). There is an unwritten code against females excelling; if someone breaks the code, she is ostricised. Torrance (1979) suggested that creative women

find outlets for their creative energies in the home and community, in ways which are important but do not lead to wider recognition. Societal perceptions of the male and female roles may indeed play an important role in determining an individual's definition of creativity.

OM is a program developed primarily to meet the needs of creative individuals, males and females whose creative talents may be strengthened by participation in creative activities (Davis, 1983). Creatively gifted children are likely to venture into unknown territory, such as making suggestions for following unconventional paths of learning (Shmukler, 1985). If conventional paths must be followed, then constraints are placed on the creatively gifted children wishing to express the unconventional. Instead of encouragement, their innovative ideas have traditionally received discouragement in conventional education and families (Moustakas, 1969).

According to Shmukler (1985) children sometimes are more influenced by their parents' estimates about their abilities than their own achievements. A possible result of these expectations is fear of exploration. The creatively gifted need genuine emotional support in their adventures. Parents and teachers can provide this support for exploration by showing enthusiasm, flexibility, and positive feedback (Clark, 1983). This support of creative

endeavours or lack of it could have an effect on an individual's definition of creativity.

Creativity is a term which has no universally agreed upon definition. There are an infinite number of factors that could have an effect or affect on an individual's perception of creativity because of the uniqueness of each individual and the uniqueness of each individuals' experiences. OM is an attempt to unify some of these experiences through the establishment of problems, the setting of guidelines, the encouragement of exploration and the placement of the creative problem solving in a competitive arena. Adding this structure to creativity may effect a participant's perception of creativity. The gender of or the up-bringing of those individuals involved with OM may also have a significant effect on their respective definitions of creativity.

Statement of Problem

Of concern here is the question: Does participation in OM has an effect on the definition of creativity held by those who participate and those who are involved with the participants? The comparisons to be made concern students identified as gifted and talented by their respective school districts, their parents, and their teachers involved with OM versus students identified as gifted and

talented by their respective school districts, their parents and their teachers who have not been involved with OM. Do those individuals associated with OM have the same definition of creativity (as product, process, personality or environment) as those not associated with OM?

Another comparison to be made concerns the definition of creativity by males and females associated with OM versus males and females not associated with OM. Does sex effect an individual's definition of creativity? Do the societal roles played by males and females have an effect of their respective definitions of creativity?

A third comparison to be made concerns competition. Does success in competition affect an individual's definition of creativity? Competition has been conducive to creative achievement and these creative achievements have been determined as successful or not successful by some form of external force, possibly a judge. In reference to the belief that competition and creativity are not mutually beneficial comes the definition of creativity as the ability to see a situation in many ways and continue to question until satisfaction is reached. Success or satisfaction is determined by the individual not a panel of judges. The U.S. educational system has done an excellent job of building the spirit of competition. Now, equal emphasis should be placed on building the spirits of cooperation and communication.

Hypotheses

From the problems above, the following hypotheses were developed:

1. There is a significant difference in the definitions of creativity among identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM.

2. There is a significant difference in the definitions of creativity among males and females who have been associated with OM and males and females who have not been associated with OM.

3. There is a significant difference in the role competition plays among the definitions of creativity of identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM.

Limitations

As with any research study, there are certain limitations created when the parameters for the study are established. In this case, these limitations were necessary in order to conduct the study.

1. Students were members of previously determined groups of gifted and talented students whose selection was determined by each respective school district. They were not randomly assigned. Being G/T, according to the criteria in Appendix D, may select against certain kinds of creativity.

2. Parents and teachers selected for the study were determined by their association or relationship with the identified gifted and talented students. They were not randomly assigned.

3. Although the State of Oklahoma requires gifted and talented education based on multiple criteria (Senate Bill 214 as amended by House Bill 1466, Rules and Regulations), the criteria components vary from district to district. Therefore, these identified gifted and talented students were placed according the criteria of the school district in which they reside. Examples of the criteria for each respective school district can been seen in Appendix D.

CHAPTER II

Literature Review

Creativity

Investigation of creativity is a wide open field for inquiry. The varying, and at times contradictory perspectives, have led to many definitions of creativity. There are four major perspectives in creativity research: creative products, creative environment, creative personality and creative process (Klein, 1982). Each perspective will be examined.

No research has been found that specifically secures the definition of creativity from gifted students, their parents and their teachers. There are many studies that have dealt with various aspects of creativity. For example, Torrance (1962) developed the Torrance Tests of Creative Thinking to measure creativity in terms of a test score. Another example is the measure of Creative Self-Concept developed by Wright , Fox and Noppe in 1975. Each study attempted to define creativity. Taylor (1972) described the origins of creativity as perceived by various

individuals and investigators. These are reported in Appendix A.

This study is an attempt to define creativity from the perceptions of gifted students, their parents and their teachers. No literature was found dealing with the effect of competition on creativity, however due to the competitive nature of OM the literature review will deal specifically with OM. Finally, gender may be a factor which contributes to variance in individual definitions of creativity and will be dealt with in this literature review. Each perspective; creative product, creative environment, creative personality and creative environment, will be dealt with individually and will form the basis for the instrument developed to secure definitions of creativity from the population described in Chapter 3.

The Creative Product

A common definition of creativity focuses upon the product. These products are seen as a new or innovative combinations best illustrated by works of art (poems, paintings, stories, music, dance) scientific inventions or new designs (McCaslin, 1984). Ghiselin (1952) pointed out that a creative product is "intrinsically a configuration of the mind, a presentation of constellated meaning, which at the time of its appearance in the mind was new in the sense of being unique, without a specific precedent" (p. 36).

Henry Murray (1959) defined creativity as the occurence of a composition which is both new and valuable. Carl Rogers (1959) stated, "creativity is an emergence in action of a novel relational product, growing out of the uniqueness of the individual on one hand and the materials, events, people or circumstances of his life on another" (p. 71).

The creative product must not only be original but must have some value, usefulness or social acceptance as well. However, there is a gray area of unaccepted, unrecognized or bizarre works of art and inventions which simply occur before their time, before society and its critics recognize their value or usefulness (Davis, 1983). Stein (1975) suggested that creativity resulted in a novel work accepted as tenable or useful or satisfying by a group at some point in time. A tangible event or relationship results from the creative process.

Taylor (1972) described the creative product as being used in a broad sense which included the concrete product itself, the effects of the product on the problem, the effect of the product on the field, and its out-of-the-field or social effects. These products are evaluated by the following criteria: generation, reformulation, originality, relevancy, hedonics, complexity, and condensation.

Guilford (1967) described the creative product as a concern with the way figural, symbolic, semantic, or behavioral content is organized. He recommended that in order to develop creativity, concentration must be placed on the development of divergent production, transformation and evaluation. Torrance (1979) described creativity as fluency, flexibility, originality, and sometimes elaboration.

The characteristics of OM that help to shape the creative product are: problems are undefined to permit students to create their own problem statements, support of fellow team members during the development of creative product, the development of trust, initiative, cooperation and communication skills in conjunction with the product to be entered in the competition. The more creative the product is, the better the team's chance is for winning.

The Creative Environment

A creative environment is one that encourages the use of creativity. Parnes (1967) believes that creative ability is enhanced through providing environmental conditions that encourage its functioning. In 1972, Parnes described creativity as involving a transaction person who transforms generic problems into generating products, facilitated by a stimulating environment. A transacting person being one whose growth has not only been extended to

its personal limits but extended to shape the "potentiality" of the environment (Parnes, 1972).

A practice common in training people for creativity is to put them in an unstructured, permissive environment. School programs for creativity generally allow students the freedom to explore unusual approaches without fear of criticism. Conventional school environments are not permissive and generally cannot approach creativity from the standpoint of an unstructured program. Maddi (1972) is skeptical that the students who need these special environments would be able to manage creativity in a world of varying and uncontrollable pressures and constraints. Without these special supportive environments students may succumb to the societal pressures of conformity or become "asocial". I. Taylor (1975) believes creative people want to shape or design their environment rather than to be shaped by it. There are varying opinions on whether creativity is enhanced by providing a supportive, structured environment or an unstructured, permissive environment.

OM provides structure that encourages unusual, far-out, off-the-wall ideas and comments. OM encourages (1) the ability to make changes or redefinition (Gourley and Micklus, 1984), (2) competition, and (3) the opportunity to meet and associate with folks having similar interests.

Does participation in this type of environment affect an individual's definition of creativity?

The Creative Personality

Guilford (1967) eluded to a common observation that most creative persons come from higher socioeconomic levels, which could mean that either the heredity or the nurture that the home provides determines the creativity of the individual. Of interest here is the heredity aspect of creativity.

Freud (1910) was one of the first to suggest a dynamic theory of the creative act. Creativity was seen as a substitute for achieving satisfaction and thus avoiding the hardships of reality. Freud regarded the creative impulse as being Id related. Id energy is sublimated and redirected into an outlet which has greater social desirability, e.g., creativity, rather than in direct Id expression which usually sexual.

The humanists view creative impulse as stemming from one's essential health. Rogers (1959) stated that creativity appears to be the same tendency as the creative force in psychotherapy - one's tendency to actualize himself/herself, to become his/her potentialities. Self-actualization gives one the ability then to be creative. May (1983) describes creativity as the most basic manifestation of a man or woman fulfilling his/her own being in

the world. Maslow (1962) stresses first personality rather than its achievement when describing self-actualized creativity.

Galton (1870) defined creativity as a highly developed form of intuition which is rarely found. Spearman (1931) defined creativity as the power of the human mind to create new content. McCaslin (1984) writes that creativity refers to the cognitive and the affective life and is a result of conscious and unconscious effort. As can be seen, there are probably as many theories on creative personalities as there are personalities.

OM does point toward certain personalities as beneficial. According to Bull and Fishkin (1985) each OM team should have an artist, at least one engineer/mechanic, and a comedian. Team members should be verbal and verbally flexible, have a high energy level, be enthusiastic and have a positive view on life. Team members should be willing to take risks, be open minded, be adventurous, be hard workers and be able to cooperate as well as communicate. It should be noted that some of these characteristics area thought to be trainable and others personality traits.

The Creative Process

Creative processes are required to reach creative solutions or products. In 1926, Wallas suggested four stages in forming a new thought: preparation, incubation,

illumination, and verification. Gowan (1975) described Wallas' paradigm as: input, relaxation, output, and product.

The creative process may be considered as a new way of seeing, a different point of view, an original idea or a new relationship between ideas (McCaslin, 1984). It is the way in which the problem is solved. Torrance (1962) defines creativity as a process which involves sensing gaps or disturbing missing elements; forming hypotheses; communicating results and possibly modifying and retesting the hypotheses. May (1983) defines creativity as the process of bringing something new into being. Davis (1983) describes the creative process as the process of combining previously unrelated ideas or perceiving a new relationship from previously unrelated ideas. Ghiselin (1952) defined creativity as an underlying process which is divergent yet fruitful. Knapp (1978) viewed creativity as a continuous process which can disappear if analyzed too scrupulously.

The process perspective has been studied by many researchers. For this study creativity is beleived to be the ability to see a situation in many ways and to continue to question until satisfaction is reached. The emphasis of this definition is placed on the process of seeing the situation in many ways and the process of continuing to question. The satisfaction that is reached is determined by the individual who is creating.

OM

OM (formerly Olympics of the Mind, henceforth to be known as Odyssey of the Mind) uses the process definition of creativity. Micklus, co-founder of OM, views creativity as a skill that is learned and can be successfully developed through creative problem solving (Micklus, 1986). OM defines creativity as some new, unusual product that someone "made up", with the emphasis placed on the process of making it up (Gourley and Micklus, 1984).

Micklus (1986) believes that OM events feature an innovative teaching technique, which is creative problem solving. Students need to learn to think rather than solely regurgitate content. Also, the predominant spirit in OM competition is fun and humor, making the problem solving process an enjoyable experience.

The literature review yields three research studies involving OM. Harrington (1984) conducted a survey of how OM affected problem solving skills. Miller (1983) evaluated an elementary gifted program in which OM was a component. Fishkin (1987) researched the effectiveness of team creative problem solving, OM is one, with gifted children in its effects on affective as well as creative behavior. This study will attempt to see if involvement with OM has an affect on an individual's or a group's definitions of creativity.

Literature dealing with OM (formerly Olympics of the Mind, henceforth to be known as Odyssey of the Mind) is related to aid in understanding the definition of creativity from the process perspective. The very nature of this study is to see if OM has an effect on the definition of creativity of the participants.

Gender

Gallagher (1975) saw gifted girls as in dire danger of becoming the stereotype constructed for them by the culture. If a girl has learned that girls do not argue with the views of others, to play it safe, be unimaginative, theoretically she would be less creative than a boy. Fox and Zimmerman (1985) found that girls seem to need sufficient parental support to enable them to carry out "atypical" risk-taking behavior though parental attitudes appear to make little difference to boys' behavior in this respect. Torrance (1962) showed that, as early as third grade, girls were more reluctant to express creative thinking than were boys. He believed that girls had, by this time, been conditioned to be more passive and accept things as they are rather than to try to manipulate or change things. According to Walker (1983), many men believe that women are less able to think than men. Winstein and Bobko (1980) found a positive correlation between androgyny and creativity, indicating that

flexibility in sex-role perceptions is of benefit to the development of the creative person. Flexibility is the key, not the conformity to masculine or feminine characteristics. Does being male or being female affect an individual's definition of creativity?

CHAPTER III

Methodology

Introduction

This chapter discusses the subjects as well as the instrumentation and procedures utilized in this study. The research method and statistical design are also described.

Subjects

The sample group of 249 participants was selected for this study from identified gifted and talented fourth and fifth grade students, their parents and teachers in three suburban elementary schools in Tulsa County, Oklahoma. A summary of the descriptive data is presented in Table I.

TABLE I

Participants of the Creativity Survey

by Frequency and Percent

Label	Frequency	Percent
*GT Student	171	68.7
Teacher of GT	10	4.0
Parent of GT	68	27.3
TOTAL	249	100.0

*GT - identified gifted and talented

Prior to this study, the students were identified as gifted and talented, based on the criteria selected by the school district. Examples of the criteria used by each district are listed in Appendix D. Students that are placed in the gifted and talented programs are assumed to have been identified as gifted and talented by their respective school districts. The school districts to be used were: Broken Arrow, Jenks, and Owasso in the 1986-1987 school year.

Characteristics of the Subjects

The population used in this study consisted of 249 identified gifted and talented students, their parents, and their teachers. There were 171 (68.7%) student participants, while 10 (4%) of the participants were teachers and 68 (27.3%) of the participants were parents. There were 141 (56.6%) female and 108 (43.4%) were male participants. The number of participants associated with OM consisted of 25 (10%); 22 participants, 2 judges, and 1 resource person; whereas the other 224 (90%) participants were not associated with OM. A summary of the descriptive data is presented in Table II.

TABLE II

Characteristics of Subjects by Frequency and Percent

Characteristics	Frequency	Percent
Gender		
Female	141	56.6
Male	108	43.4
TOTAL	249	100.0

TABLE II (Continued)

Characteristics	Frequency	Percent
Educational Level		
4th grade	64	25.7
5th grade	107	42.9
Non High School Grad	1	.4
High School Grad	11	4.4
Associates Degree or 2 yrs College	8	3.2
Bachelors Degree	38	15.3
Masters Degree	18	7.2
Doctorate Degree	2	.8
TOTAL	249	100.0

Instrumentation

The data were collected by the use of the Creativity Survey developed to determine an individual's definition of creativity. This survey examined creativity from the following perspectives:

1. creativity as a process
2. creativity as a skill
   a. teachable
   b. enhanced through competition
3. creativity is environmentally controlled
4. creativity is a personality trait

Pilot studies were conducted in order to determine the face validity , clarity and appropriateness of the items on the creativity survey. First, a pilot study was conducted to determine the clarity of each item of the Creativity Survey and the validity of the survey itself in regards to securing definitions of creativity. The items developed for the creativity survey relied on the conceptual literature on creativity which can be found in Chapter 2. The population for this study consisted of teachers, administrators, professors, graduate students and business men and women who would be considered experts in the field of creativity (n = 24).

A second pilot study was conducted to determine the appropriateness of the language of the creativity survey for the respondents. The survey was administered to a group of fourth and fifth grade students (n = 28) identified as gifted and talented at Washington Elementary School in Ponca City, Oklahoma. These students were chosen because of similarities that exist between this group and the target populations of the survey. After administration of the survey, students were asked to discuss the wording and clarity of the survey and for their suggestions on improving the survey. These suggestions were incorporated into the final design of the survey.

The results of the pilot studies were used in the development of the survey on defining creativity used in

this study. This survey was written for three audiences. The three audiences surveyed were: students, parents, and teachers. The response set consisted of a 5-point Likert-type continuum upon which each participant was asked to indicate his/her degree of agreement or disagreement with each statement. A summary of the response patterns of the Creativity Survey appear in Appendix B.

An attempt was made to secure the affective perceptions of creativity of each participant as well. Each participant was given the opportunity to espouse his/her own definition of creativity to questions requiring short answers. The language used in the short answer questions was directed toward the perceptions of creativity which lie within each individual. Key words used in the questions were "feel", "comes to mind" and for the students, "hand out with" was included to help them better understand what the word "peers" meant.

To determine that the Creativity Survey measured the four definitions of creativity empirically as well as intuitively, a factor analysis was conducted. The sampling adequacy was determined using the Kaiser-Meyer-Olkin measure of sampling adequacy of (.72514). The Bartlett Test of Spericity was (637.16242) with a significance of (.00000). Five Factors were extracted. The initial extraction was followed by an orthogonal (equamax) rotation.

Validity. In order to describe the perspectives of creativity of the population sampled, a factor analysis was conducted on 249 protocols which completed the 14 Likert-type items of the 22 item survey. To show that the item sets were different and each one made a unique contribution to the total variance, a factor analysis was performed. A principle components analysis with equamax rotation of 14 items yielded a 5-Factor solution, accounting for 60 percent of the factor variance (see Table III).

TABLE III

Rotated Factor Matrix

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	.11274	.67889	.41979	-.13015	.13551
2	.23718	.50954	-.06398	.21972	.14552
3	-.03515	-.64311	.03015	-.00509	.11600
4	.13825	-.31262	.00155	.23004	.66930
5	-.06113	.21245	.09775	-.11878	.76828
6	.43528	.34297	.01825	.44943	.06409
7	.64251	.41096	.16006	.11841	.06013
8	-.15782	.02794	.05021	.85686	.05734
9	.61525	.08155	.13404	-.32033	.01230
10	.80188	.18706	-.00863	.06178	.12199
11	.81564	.10355	.04610	.16758	.02805
12	.16960	-.00117	.70037	.04983	.30156
13	-.11330	.05364	.80559	.04097	-.09708
14	.40400	-.14459	.36011	.42333	-.24872

A modified skree test was conducted which further supported the appropriateness of the 5 Factors based on the sequence of their eigenvalues (see Table IV).

TABLE IV

Factor Patterns of Perception of Creativity

Variable	Communality	Factor	Eigenval	Pct of Var	Cum Pct
Item1	.68513	1	3.35921	24.0	24.0
Item2	.38943	2	1.42908	10.2	34.2
Item3	.42921	3	1.36887	9.8	44.0
Item4	.61773	4	1.18932	8.5	52.5
Item5	.66280	5	1.09505	7.8	60.3

Reliability. A Cronbach's alpha reliability statistical analysis was performed on the subtests of the Creativity Survey (N = 249). Reliability coefficients reflecting internal consistency for the 5 extracted Factors appear in Table V.

TABLE V

Reliability Coefficients of Extracted Factors

Factor	Number of Items	Cronbach's Alpha Reliability Coeffiecient
5	2	Alpha = -.4665
4	3	Alpha = .3866
3	2	Alpha = .5419
2	3	Alpha = -.2931
1	4	Alpha = .6803

After administration of the Creativity Survey, 5 Factors were extracted from the 14 items. A summary of the perspectives which comprise the extracted factors appear in Table VI.

TABLE VI

Perspectives of Creativity Factors

FACTOR 1 - TEACHABLE

Item 7 - Creativity can be taught - you can learn to be more creative.
Item 9 - I would like to be more creative - I wish I were more creative.
Item 10 - Parents can help their kids be more creative.
Item 11 - Teachers can help students be more creative.

FACTOR 2 - LEARNED

Item 1 - Creativity is a skill - it's what you learn, you learn to be creative.
Item 2 - Creativity is a process - it's the way you do something or the way you solve a problem, the method.
(-) Item 3 - Creativity is inherited - you are either born creative of you're not, some are just more creative than others.

FACTOR 3 - COMPETITION

Item 12 - Competitions can help kids be more creative. If you were in a creativity competition, would you be more creative afterwards?
Item 13 - Creativity is taught in school - schools encourage students to be creative.

FACTOR 4 - DESIRABLE

Item 6 - You can increase your creativity - it is possible to become more creative.
Item 8 - I am creative - Do you consider yourself to be creative?
Item 14 - Kids should have a creativity class in school.

FACTOR 5 - ENVIRONMENT

Item 4 - Creativity is a personality trait - your temperment or attitude determins if you're creative of not, there is a creative type of person.
Item 5 - Creativity is determined by your environment - you're a product of your environment, who you "hang out with" or what you do determines your creativity.

The labels attached to each factor were determined by an aspect common to the items that comprised the factor.

The remaining items of the creativity survey consisted of 3 short answer questions and the 5 demographic questions described in the section on Characteristics of Subjects. The short answers questions were broken down into the four categories of product, environment, personality and process. Examples of answers that make up these categories appear in Appendix E.

Procedure

In the Spring of 1987, students identified as gifted and talented, their parents, and teachers were administered the survey created for this study. The three chosen districts; Broken Arrow, Jenks, Owasso; are suburban communities on the periphery of the city of Tulsa, in northeastern Oklahoma. These three districts were chosen because of their accessibility and the similar training of the teachers and coordinators in gifted and talented education. Each district allowed optional participation in OM. The assumption was made that a number of students from each grade level would be OM participants. This assumption was later invalidated. All of the participants were from the same metropolitan area and in some way associated with the gifted and talented program of each respective district. The coordinator of each respective gifted and talented

program was contacted to secure permission to administer the Creativity Survey. No individual parental permission was obtained on survey students because approval of the school district was deemed sufficient by the school district.

After approval of the school district, the gifted and talented teacher was given the instrument to administer to each identified gifted and talented student. These students were then given the instrument to take to their parents to complete and return the next day. Each teacher and coordinator of the gifted and talented was also asked to complete the instrument. The surveys were then collected by the coordinator of each respective gifted and talented program. It was reported that all of the fourth and fifth grade students identified as gifted and talented and their teachers, who were at school when the survey was administered, participated in completing the survey. This would signify a return rate of 100% of the students and teachers. It was also reported that each of these participants was given a (one) survey to take home, have completed and return to their next gifted and talented class. The return rate of parent surveys was 54%.

Hypotheses

Based on information from the literature, the following hypotheses were formulated:

Hypothesis 1: There is a significant difference in the definitions of creativity among identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM.

Hypotheses 2: There is a significant difference in the definitions of creativity among males and females who have been associated with OM and males and females who have not been associated with OM.

Hypothesis 3: There is a significant difference in the role competition plays in the definitions of creativity among identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM.

Data Analyses

The three independent groups surveyed were identified gifted and talented students (A), their parents (B), and their teachers (C). The aspects examined were the definitions of creativity of each surveyed individual. A one way analysis of variance method using SPSSX (Nie, 1983) was used. Hypothesis 1 and 2 used independent groups

t-tests. The minimum requirement for statistical significance was set at an error rate of $p \leq .05$ per comparison.

CHAPTER IV

Results and Discussion

Introduction

Presented in this chapter are the results of the statistical analyses for the three hypotheses formulated in this study. The major emphasis of this study was to determine if there were significant differences in the perceptions of creativity of identified gifted and talented students, their parents and their teachers associated with OM and identified gifted and talented students, their parents and their teachers not associated with OM. To test the relationship between those associated with OM and those not associated with OM, factor scores were developed for each group. Due to the size of the OM group, all of those participants associated with OM were combined to for the OM group (n = 25). A control group was randomly selected from the non-OM group with the same number of students, teachers and parents as were in the OM group for a total of 25 members.

Test of Research Hypotheses

Hypothesis One

Hypothesis One states that there is a significant difference in the definitions of creativity of identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM.

Examination of results of the independent groups t-tests is shown in Table VIII. There was no significant difference in terms of definition of creativity between Group 1 (those associated with OM) and Group 2 (those not associated with OM) on any of the 5 extracted Factors (see Table VII).

TABLE VIII

Mean, Standard Deviation, F Value

and 2-Tail Probability of Definitions

of Creativity by Factor Scores

Variable	Number of cases	$\bar{X}$	SD	F Value	2-Tail Prob.
Factor 1 - Teachable					
*Group 1	25	15.280	3.792	1.26	0.571
*Group 2	25	15.280	3.373		
Factor 2 - Learned					
Group 1	25	10.369	2.139	1.49	0.337
Group 2	25	9.640	1.753		
Factor 3 - Competition					
Group 1	25	6.880	2.166	1.44	0.377
Group 2	25	6.560	1.805		
Factor 4 - Desirable					
Group 1	25	12.960	2.131	1.21	0.639
Group 2	25	12.480	2.347		
Factor 5 - Environment					
Group 1	25	5.360	1.630	1.06	0.892
Group 2	25	5.320	1.676		

*Group 1 - participants associated with OM
*Group 2 - participants not associated with OM

Hypothesis 2

Hypothesis 2 states there is a significant difference in the definitions of creativity in males and females who have been associated with OM and males and females who have not been assoicated with OM. Due to the insufficient number of males and females associated with OM, a randomly selected control group consisting of students, teachers, and parents was used to test the hypothesis that gender does effect the definitions of creativity. The number of participants used for each group was determined by the percentage of females (56.6%) and males (42.4%) who participated in the survey. The total number of the 2 groups was equal to the total number of participants, but not the same participants as were tested in Hypothesis 1 (n = 50). Independent groups t-tests were performed to determine the significant diffence due to gender.

Examination of the results of the independent groups t-tests are shown in Table VIII. There was no significant difference in terms of definitions of creativity between Group 1 (females) and Group 2 (males) on any of the 5 extracted Factors. Therefore, gender does not appear to effect the definition of creativity.

TABLE VIII

Mean, Standard Deviation, F Value

and 2-Tail Probability of Definitions

Creativity by Factor Scores

Variable	Number of cases	$\bar{X}$	SD	F	2-Tail Prob.
Factor 1 - Teachable					
*Group 1	27	15.1481	3.676	1.12	0.795
*Group 2	23	15.4348	3.475		
Factor 2 - Learned					
Group 1	27	9.7407	1.767	1.53	0.300
Group 2	23	10.3043	2.183		
Factor 3 - Competition					
Group 1	27	6.6667	1.861	1.34	0.473
Group 2	23	6.7826	2.152		
Factor 4 - Desirable					
Group 1	27	12.5926	2.500	1.71	0.666
Group 2	23	12.8696	1.914		
Factor 5 - Environment					
Group 1	27	5.2963	1.409	1.82	0.145
Group 2	23	5.3913	1.901		

*Group 1 - female participants
*Group 2 - male participants

Hypothesis 3

Hypothesis 3 states there is a significant difference in the role competition plays in the definitions of creativity of identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM. Factor 3 of the 5 extracted Factors deals with the role of competition in the definition of creativity. As reported in Hypothesis 1, there was no significant difference in the definitions of creativity between Group 1 (those associated with OM) and Group 2 (those not associated with OM) on any of the 5 extracted Factors, including Factor 3 (see Table VIII).

Additional Analyses

Each participant was given the opportunity to espouse his/her own definition of creativity to Items 15 - 17 which required short answers. These answers were broken down into 6 categories, the first four being the perspectives of creativity discussed in Chapter 2. These 6 categories were: (1) process, (2) product, (3) environment, (4) personality, (5) other, and (6) no response. A summary of the descriptive data is presented in Table IX. Examples of responses appear in Appendix E.

TABLE IX

Responses to Short Answer Items on Definitions of Creativity by Frequency and Percent

Items	Frequency	Percent
Item 15 - Personal Definition		
1 - process	91	36.5
2 - product	47	18.9
3 - environment	3	1.2
4 - personality	84	33.7
5 - other	4	1.6
6 - no response	20	8.0
TOTAL	249	100.0
Item 16 - What does the word "creativity" bring to mind?		
1 - process	61	24.5
2 - product	81	32.5
3 - environment	12	4.8
4 - personality	69	27.7
5 - other	6	2.4
6 - no response	20	8.0
TOTAL	249	100.0
Item 17 - How do others feel about creativity?		
1 - process	15	6.0
2 - product	14	11.6
3 - environment	67	26.9
4 - personality	56	22.5
5 - other	48	19.3
6 - no response	49	19.7
TOTAL	249	100.0

In response to the question asking for each participants personal definition of creativity, the majority of the cluster around the process and product definitions of creativity. Personality also played an important role in about one third of the participants' definitions.

When asked what came to mind when they heard the word "creativity", the majority again gave responses that fell into the process and product categories, with about one fourth of the responses involving the personality category.

Finally, when asked how they thought their peers felt about creativty, many of the respondents had no response or had a response other than the categories used as parameters. The environment and personality categories had many more responses than the process or the product categories.

CHAPTER V

Summary, Conclusions and Recommendations

The purpose of this chapter is to present a general view of the study and discussion of the findings. General conclusions based upon the results of the research are discussed. Recommendations for future research are considered.

Summary

The purpose of this study was to determine whether participation in OM (formerly Olympics of the Mind, henceforth to be known as Odyssey of the Mind) has an effect on the definition of creativity held by those who participate and those who are involved with the participants. The 249 subjects in this study were selected from a population of identified gifted and talented fourth and fifth grade students, their parents and their teachers. For the purpose of evaluation, the three above mentioned groups were combined with 25 being associated with OM and 224 not being associated with OM. The number of subjects utilized in the analysis varies due to the insufficient number of subjects associated with OM.

Test data consist of the Creativity Survey, an instrument developed for this study. Demographic data were obtained from the participants' responses to additional items included on the Creativity Survey. Three hypotheses were generated and tested using independent t-tests in order to compare the two groups of each hypothesis using the five extracted Factors from the factor analysis.

The first hypothesis states that there is a significant difference in the definitions of creativity among identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated with OM. Independent t-tests were then performed to determine if there was a significant difference in the definitions of creativity between those associate with OM and those not associated with OM based on these 5 Factors (see Table VI). Examination of the results of the statistical test indicated that association with OM was not statistically significant in determining the definition of creativity by group memberships.

Due to the insufficient number of subjects, a clear cut effect of OM on definitions of creativity is still unanswered. Statistically, the strongest factors extracted were Factors 1 and 2, "creativity is teachable" and "creativity is learned." Being a creative problem solving

competition, OM views creativity as teachable. By using process models, creativity can be learned. It appears that those involved with OM as well as those not involved with OM prefer the process and product definitions of creativity (see Table IX) thus lending support to those definitions of creativity.

Hypothesis two states there is a significant difference in the definitions of creativity in males and females who have been associated with OM and males and females who have not been associated with OM. Due to the insufficient number of participants in OM (25), a control group of fifty males and females was randomly selected. Independent groups t-tests were performed to determine if there was a significant difference in definitions of creativity due to gender on each of the 5-Factors that measure creativity. Examination of the results of the statistical tests indicated that gender was not statistically significantly related to one's definition of creativity.

Again, there was an insufficient number of subjects to compare males and females associated with OM with males and females not associated with OM. Therefore, a randomly selected sample of males and females, equivalent to the size of the sample used in testing hypothesis 1, was used in testing hypothesis 2. The percentage of females and males that participated in the survey was used in

determining the number in each group. No distinction was made between students, teachers and parents because of the insufficient number of participants in OM and the desire to perform independent groups t-tests on the same number of participants.

Creativity was generally perceived as desirable among those who considered themselves creative and most of the individuals surveyed did consider themselves creative. It appears that gender may have little effect on definitions of creativity of creative individuals. Creativity was described, in survey responses, as unique, out of the ordinary, unusual. These adjectives do not fit into the realm of conformity and stereotypes which dominate sex-role perceptions. The majority of the participants of this study were gifted and talented students whose educational situations have been designed to produce competent and productive adults of both sexes. Not all of the students were identified as creative, therefore, gender may not be an appropriate variable to examine when attempting to secure definitions of creativity from creative individuals

Hypothesis three states that there is a significant difference in the role competition plays in the definitions of creativity of identified gifted and talented students, their parents and their teachers who have been associated with OM and identified gifted and talented students, their parents and their teachers who have not been associated

with OM. Factor 3 of the extracted 5-Factors dealt with the role of competition in defining creativity. Based on the results of the statistical analysis performed on the data, hypothesis three was rejected.

The failure of the factor analysis to separate the definitions of creativity into factors equivalent to the traditional categories of process, product, personality, and environment may be due to the inconsistency of the respondents to the Likert-type items. These four perspectives of creativity did appear in the short answer items, leading this author to believe that the structure of the 5-point strongly agree to strongly disagree continuum used may not be appropriate when attempting to obtain definitions of creativity.

There were a few questions regarding the placement of competition and creativity in the same arena by some of the survey participants. Since it appears that conventional education emphasizes and promotes competition, it may be that "we", the products of this educational system, feel quite comfortable placing creativity in the all too familiar structure of competition.

"Hurry up","practice", "compete" are emphasized in our cultural traditions. Emphasis is placed on learning something fast with the consequence often being that of forgetting it just as fast. Memorize, "regurgitate" and go on, has been the traditional method taught to students

in conventional education. These are often the criteria used to determine the intellectually gifted student. Traditionally, the intellectual aspects of gifted kids' development has received overwhelming emphasis, to the detriment of their emotional (Freeman, 1985) and creative needs.

Instead of emphasizing the learning of the process used in memorization so that it can be applied to any set of data, we simply memorize specified subject matter and either pass or fail the test of that subject matter. The fundamentals of creativity such as risk-taking, breaking with tradition, looking for the second right answer, or enthusiasm and having fun have been ignored and often times have resulted in behaviors that have been punished or unacceptable. The very essence of creativity is not found in black or white, yes or no, can or cannot, win or lose. It is found in flexibility, possibilities, options, alternatives, the unstructured freedom to explore.

Therefore, it could be argued that competition is not necessarily beneficial to creativity. Creativity is believed to be the ability to see a situation in many ways and to continue to question until satisfaction is reached. By placing creativity in the competitive arena, the satisfaction that is reached may not be that of the individual who is creating but rather a panel of judges who may or

may not perceive the individual's process or solution as creative.

OM, a creative problem solving competition, may not be beneficial to creativity. Those who are successful in OM are those who learn how to play the game. An example of this can be seen in the spontaneous problem solving competition. Students are coached and taught the "tricks" to brainstorming. By practicing the brainstorming techniques, they become more fluent in responses and are able to generate more responses, thus scoring more points. Creative responses are encouraged and given more points, but a lot of emphasis is placed on the speed and the quantity of of responses. Are the truly creative kids the winners, the ones who learn how to play and win the game, or are they the losers, the ones whose satisfaction is internal and not conducive to being "judged" as successful by others.

This same type of "judging" is used to determine who is identified as gifted and talented. The identification is based on a test score from an IQ test administered to the student. A standardized test with pre-determined correct answers with no allowance for alternative or creative answers. Therefore it is believed that by using identified gifted and talented students, the other creative kids may have been eliminated from participation in this

study. This could be a possible explanation for the lack of variance in the definitions of creativity.

Conclusions

This study has attempted to provide information regarding individual perceptions of creativity. The following question was examined: Does association with OM effect an individual's definition of creativity? The results of the research indicated that there was no significant difference in the definitions of creativity due to association with OM, gender, or the role of competition.

A possible explanation for the results of this study may be due to the small number of items used to measure each factor and the small number of participants associated with OM. In the development stage of an instrument, the results are tenative to say the least. At this stage of research, it is too early to conclude whether or not the groups are or are not significantly different in their perceptions of creativity. Many factors are involved in determining an individual's or group's definition of creativity and more research is needed.

Recommendations

There is a need for research data in the area of defining creativity. Research is sparse, topical, inconclusive and contradictory. Recommendations for further research are:

1. More items are necessary on the Creativity Survey to measure the perspectives of creativity. In order to improve the reliability of the survey, it may be necessary to use ten or twelve items per perspective of creativity.

2. More subjects associated with OM are necessary to determine if this associations effects their definitions of creativity. By increasing the number of subjects, it would be possible to separate the groups of students, parents and teachers in order to better compare the effects of OM on their groups' definitions of creativity.

3. The use of junior high and high school aged subjects could provide needed research data in determining perceptions of creativity. The social peer pressures to conform are much stronger at these age levels that at the elementary levels, therefore differences due to gender may be more apparent.

4. The use of a separate survey for each group surveyed may assist in obtaining information unique to each individual group. The language of the survey could be specifically targeted to obtain information or perceptions unique to that group.

5. The use of more short answer items is highly recommended in order to learn more about the definitions of creativity of each individual participant. Also, the use of less structured short answer items may provide the opportunity for more creative responses.

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APPENDIX A

Taken from I. Taylor's (1972) article "A Theory of Creative Transactualiation" in Creative Education Foundation, paper #8.

Origins Creativity

(1) Vitalism - creativity is a theistic or mystical source
(2) Nativism - the belief that the origins are rooted in genetics
(3) Empiricism - creativity is essentially learned
(4) Emergentism - creativity emerges as a synthesis of hereditary and environmental forces
(5) Cognition - creativity results from thought process
(6) Serendipity - creative discoveries are accidental although the person may be prepared for a sudden insight
(7) Romanticism - creativy originates through unanalyzable inspirations and that examining the illusory roots of creativity will destroy it
(8) Physiology - creativity is rooted in the biology of the human organism
(9) Culture - determination of creativity by the historic Zeitgeist
(10) Interpersonal relations - creativity resulting from or being triggered by group interaction as in brainstorming or synetics
(11) Personality - sources of creativity are understandable by examining the development of personality either:
    a. psychoanalytically
    b. self-actualized

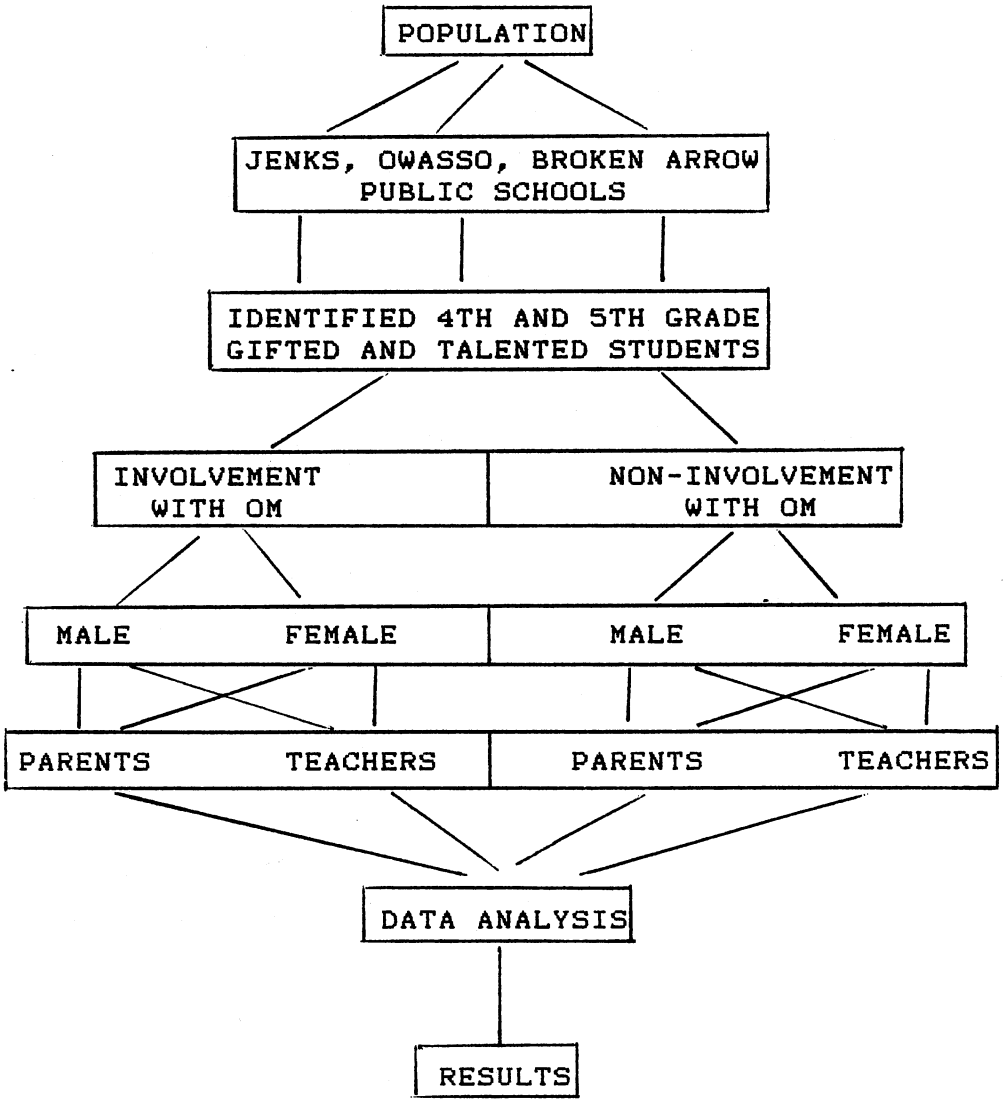
APPENDIX B

Response Patterns of the Creativity Survey

Item	Stongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	8.8%(22)	34.9%(87)	17.3%(43)	28.1%(70)	10.8%(27)
2	17.7%(44)	47%(117)	22.9%(57)	9.6%(24)	2.8%(7)
3	18.6%(46)	25.1%(62)	26.3%(65)	17.8%(44)	12.1%(30)
4	10.1%(25)	30.4%(75)	25.5%(63)	22.7%(56)	11.3%(28)
5	7.3%(18)	27.4%(68)	23%(57)	28.6%(71)	13.7%(34)
6	41.4%(103)	43.5%(107)	10.2%(25)	3.3%(8)	1.2%(3)
7	22%(54)	44.3%(109)	18.7%(46)	10.6%(26)	4.5%(11)
8	34.4%(85)	49.8%(123)	13.4%(33)	2%(5)	.4%(1)
9	33.1%(82)	33.5%(83)	23.8%(59)	9.7%(15)	3.6%(9)
10	28.3%(70)	44.9%(111)	17%(42)	7.7%(19)	2%(5)
11	33.9%(84)	41.9%(104)	16.1%(40)	5.2%(13)	2.8%(7)
12	12.5%(31)	27%(67)	30.6%(76)	20.2%(50)	9.7%(24)
13	16.6%(41)	34.4%(85)	23.5%(58)	21.1%(52)	4.5%(11)
14	41.8%(104)	24.9%(62)	22.9%(57)	7.6%(19)	2.8%(7)

APPENDIX C

Design Flow Chart



APPENDIX D

Criteria for Identifying

Gifted and Talented Students

OWASSO

Students that score at the 97th percentile or above on the Otis-Lennon Mental Abilities Test are admitted to the gifted and talented program.

BROKEN ARROW

Students who score at the 97th percentile or above on the composite score of the SRA Achievement Tests or the 95th percentile or above on the Otis-Lennon School Ability Test are admitted to the gifted and talented program.

JENKS

All students scoring at or above the 97th percentile on a nationally normed intelligence test will be deemed qualified and placed in the gifted program. These tests include the WAIS, the WISC-R, the Otis-Lennon School Abilities Test and the Otis-Lennon Mental Abilities Test

APPENDIX E

Responses to Short Answer Items

Item 15 - What is your definition of creativity?

Process

"A process in which a person does something unusual and clever, something new."
"The ability to create or produce unique ways of expressing oneself."
"Finding new and better ways for doing things."

Product

"The ability to solve problems or produce objects or ideas which are unique and effective for the intended purpose."
"Taking a problem and coming up with an original solution."
"The ability to originate or produce something new from already learned skills."

Environment

"Being allowed to invent things."
"Different, not the same."
"Being able to create and not follow the beaten path."

Personality

"It's the way you are. Either you're creative or you're not."
"Someone who invents, imagines, decorates with their own ideas."
"The sense to be original inside someone, it can be brought out or kept inside."

APPENDIX E (Continued)

Item 16 - What comes to mind when you hear the word "creativity"?

Process

"Plans of actions to work out different solutions."
"Trying new things."
"The process of producing the unique or unusual."

Product

"The ability to produce truly unique ideas."
"Words, writing and stories."
"Solutions to problems when there are no conventional answers."

Environment

"Home."
"My lab class."
"Places like the Omniplex."

Personality

"Being out of the ordinary."
"My really outrageous lab teacher."
"Someone who can express beauty-thoughts-feelings through whatever medium they choose."

Item 17 - How do your peers feel about creativity? How do the people you "hang out with" feel about creativity?

Process

"The way you do things or style."
"We think of new ways to do stuff."
"Time whould be allowed to dabble in creative processes."

APPENDIX E (Continued)

Product

"My friends are involved in decorating and writing novels."
"A necessary ingredient for success in any field."
"They don't think it's all that 'big of deal', unless it solves a problem or answers an interesting question."

Environment

"A prize to be cherished, nurtured and enjoyed."
"Most of the 'cool people' think creativity is stupid, my friends think love it."
"My friends and parents encourage it."

Personality

"We feel it is something special in a person."
"I wish I had it."
"My peers think of creativity as being a trait of personality or something only 'possessed' by a select few."

APPENDIX F

Creativity Survey

INSTRUCTIONS: Please place a circle around the abbreviation beside the statement or question that best represents your impression of the statement or question.

sa - strongly agree
a - agree
n - neutral
d - disagree
sd - strongly disagree

1.	Creativity is a skill - it's what you learn, you learn to be creative.	sa	a	n	d	sd
2.	Creativity is a process - it's the way you do something or the way you solve a problem, the method.	sa	a	n	d	sd
3.	Creativity is inherited - you are either born creative or you're not, some are just more creative than others.	sa	a	n	d	sd
4.	Creativity is a personality trait - your temperment or attitude determine if you're creative or not, there is a creative type of person.	sa	a	n	d	sd
5.	Creativity is determined by your environment - you're a product of your environment, who you hang out with or what you do determines your creativity.	sa	a	n	d	sd
6.	You can increase your creativity - it is possible to become more creative.	sa	a	n	d	sd
7.	Creativity can be taught- you can learn to be more creative.	sa	a	n	d	sd
8.	I am creative - Do you consider yourself to be creative?	sa	a	n	d	sd
9.	I would like to be more creative - I wish I were more creative.	sa	a	n	d	sd

APPENDIX F (Continued)

10. Parents can help their kids be more creative. sa a n d sd
11. Teachers can help students be more creative. sa a n d sd
12. Competitions can help kids be more creative. If you were in a creativity competition, you would be more creative afterwards. sa a n d sd
13. Creativity is taught in schools - schools encourage students to be creative. sa a n d sd
14. Kids should have a creativity class in school. sa a n d sd

15. What is your definition of creativity?
16. What come to mind when you hear the word "creativity"?
17. How do your peers feel about creativity? How do the people you "hang out with" feel about creativity?

18. I am: ___ female ___ male

19. I am:
___ a gifted and talented student
___ a teacher of gifted and talented student
___ a parent of a gifted and talented student

20. Have you ever been involved with OM? ___ yes ___ no
If yes, then how?
___ participant
___ coach
___ judge
___ resource person

21. Are you currently involved with OM? ___ yes ___ no
If yes, then how?
___ participant
___ coach
___ judge
___ resource person

22. My educational level is:
___ fourth grade
___ fifth grade
___ non high school graduate
___ high school graduate
___ associates degree
___ bachelors degree
___ masters degree
___ doctorate

VITA

Kathy Lynn Goff

Candidate for the Degree of

Master of Science

Thesis: DEFINITION OF CREATIVITY: OM VS NON-OM

Major Field: Applied Behavioral Studies

Biographical:

Personal Data: Born in Chickasha, Oklahoma, May 4, 1954,the daughter of Gerald K. and Louise Goff.

Education: Graduated from Stillwater High School, Stillwater, Oklahoma, in May, 1972; studied six months at the University of Salamanca in Salamanca,Spain in Fall of 1974; received Bachelor of Arts Degree in Spanish from Oklahoma State University in December, 1975; studied one semester at the University of Arizona in the Masters Degree Program in Latin American Studies the Spring of 1976; received Bachelor of Science Degree in Secondary Education from Oklahoma State University in May, 1977; completed requirements for the Master of Science degree at Oklahoma State University in July, 1987.

Professional Experience: Teacher and Coach, Stillwater Public Schools, January, 1978 to May, 1980; Geological Technician, Secretary, Administrative Assistant, Land Leasing Agent, Various independent Oil Companies in Hutchinson, Kansas and Denver, Colorado, June, 1980 to July, 1982; Teacher, Stillwater, Oklahoma, August, 1984 to May, 1985; Teacher, Marland Public School, August, 1985 to May, 1986; Owner/Operator of Kathy's Bike-O-Rama and Educational Consultant, August, 1986 to present.