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Date December 1 1988

SOCIAL VALIDATION OF A CREATIVITY MEASURE

A Thesis

Presented for the

Master of Science

Degree

The University of Tennessee, Knoxville

Elizabeth Kay Bennett

December 1988

DEDICATION

I would like to dedicate this thesis to my parents whose love and support have made the achievement of this goal possible.

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There are several people I wish to thank for their assistance in the completion of this research. Without the productive brainstorming sessions and the tremendous support of SPARC, the Child and Family Studies creativity research group, many of the ideas expressed in this thesis would have remained unexplored.

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To Dr. Debbie Tegano, my major professor and friend, I wish to express my deepest appreciation. Her encouragement, support, energy, and enthusiasm have helped me see my abilities and potential.

ABSTRACT

A series of three rating forms, based on the Developmental-Ecological Model of Creative Potential in Young Children (Moran, Sawyers & Tegano, 1987), and a checklist were designed to assist preschool teachers in identifying creative children. The rating forms and checklist were completed, one per day for four consecutive days, by 15 teachers who were unaware that they were rating creative behaviors. The Multidimensional Stimulus Fluency Measure (MSFM), a measure of young children's creative potential, and an IQ test were individually administered to the 40 children involved. Correlations were computed to assess the relationships of IQ and creativity, as measured by the MSFM, to the rating forms. Both the MSFM and the rating forms were internally consistent. Thirteen items out of 59 displayed strong internal consistency and were significantly correlated with original scores but not with IQ scores. Only 5 of the 59 items correlated significantly with IQ. This may be related to the design of the study or to poor wording of the items. It is concluded that the teacher rating forms may provide additional information, related to personality, cognition and context, to teachers in the identification of creative potential in young children.

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CHAPTER I

INTRODUCTION

The American educational system is experiencing a revival of the fundamental, traditional values of past decades. More emphasis is being placed on traditional education: reading, writing, and arithmetic. Reports from committees such as the Carnegie Forum have provided an impetus for "back to basics" education (Naisbitt, 1982).

With a more traditional, structured approach being taken by educators, it is possible that individualism and critical thinking skills may suffer. Somewhere in the education process it is imperative that creative thinking skills be identified and fostered. Formal education now begins at kindergarten. The prekindergarten years offer a feasible time to begin to identify children's creative potential (Moran, Milgram, Sawyers & Fu, 1983).

The 1970 White House Conference on Children recommended that educators reassess the importance of the identification and development of creativity in children. A logical and pragmatic method of identification is teacher judgment. A few studies, such as Swenson (1978), Runco (1984), and Nicholson & Moran (1986), have focused on untrained teachers' ratings of creativity in children.

An issue that concerns the use of teacher ratings for the identification of creative potential in young children is that of the creativity-intelligence distinction. This topic continues to appear in the literature. Empirical information on this issue indicates that creativity and intelligence, although related, may be differentiated as constructs (Getzels & Jackson, 1962). The exact components of creativity have yet to be clearly pinpointed. This is in contrast to the information available on intelligence after decades of research and theory. Research has shown that measures of divergent thinking (a component of creativity) and convergent thinking (IQ) are not significantly correlated (Wallach & Kogan, 1965).

In order to encourage creative thinking skills, teachers need to be able to identify the associated behaviors. Therefore, there need to be valid measures for teacher judgments of creative potential in young children that allow teachers to distinguish between intelligence and creativity in young children. An efficient rating form that describes cognitive, personality, and contextual characteristics of creative and/or intelligent children may provide a step toward the solution to this differentiation problem.

Theoretical Framework

Creativity is a process that develops as higher levels of cognitive functioning are attained. Such components of creativity as problem-generation, idea and solution generation, evaluation, and production, emerge as cognitive abilities expand and become more advanced and complex. The Developmental-Ecological Model of Creative Potential in Young Children (DEModel) (Sawyers, Moran & Tegano, 1987) is a measure of creative abilities which is based upon the developmental definition of creativity (see Appendix A). The model reflects the view that the development of creative abilities proceeds in a hierarchical fashion and recognizes the influence of environmental and personality factors upon development as well. The cognitive factors that are addressed in the model include information, attention, and fantasy. The environmental factors include contextual elements such as play opportunities and external constraints like reward, choice, time and materials. The personality variables include risktaking, conformity, temperament and locus of control. The assumption in the model is that creative potential in young children can be assessed by measuring the generation of ideas, or ideational fluency. Because this model represents factors other than cognition in describing influences on creative potential, the Developmental-Ecological Model of Creative

Potential in Young Children is an appropriate basis for assessing a wider range of classroom behaviors that relate to the creative potential in young children.

Conceptual Definitions

The Developmental-Ecological Model of Creative Potential in Young children defines creativity as "the interpersonal and intrapersonal process by means of which original, high quality, and genuinely significant products are developed" (Sawyers, Moran & Tegano, 1987, p. 3). The operational definition of creativity, for the purpose of this study, is ideational fluency, or the generation of many ideas.

The research methodology upon which this project is based is referred to as social validation. Social validation is defined as "the extent to which a traditional objective psychometric evaluation agrees with or predicts the subjective judgment of teachers, parents, supervisors, or 'significant others'" (Runco, 1984, p. 711). Social validity has been shown to be an effective methodology for assessing constructs, such as creativity, which may be difficult to define (Kazdin, 1977; Twardosz, Schwartz, Fox & Cunningham, 1979; Runco, 1984).

Assumptions and Limitations

The major assumption of this study is that teachers have sufficient classroom observational skills to complete the rating forms accurately. Another assumption is that teachers will be motivated to conscientiously complete the surveys.

The major limitation recognized by the researcher is that teachers may not always follow the directions for the rating forms which require that they confine their ratings to their impressions of the child on the day the rating form is to be completed. It is natural for teachers to make inferences based on their past knowledge of the children in their class. Both verbal and written direction and a request to describe examples will minimize this limitation.

Objectives

The objectives of this project are (a) to develop an efficient and feasible set of rating forms that effectively enable teachers to observe behaviors associated with creative potential in young children, which is defined as ideational fluency and measured by the Multidimensional Stimulus Fluency Measure; and (b) to determine if the creative potential in young children is related to cognitive, personality, and contextual domains as measured by a teacher rating scale.

CHAPTER II

REVIEW OF THE LITERATURE

Since the early 1950's, an increasing number of researchers have studied the creative person. Beginning with retrospective and historical accounts of the lives of people judged to be creative in their respective fields, the focus of research in creativity was on the adult who had succeeded in making original and useful products and on creative adolescents and elementary school children.

More recently, however, researchers have begun to consider creativity in young children. Rather than focusing on children's products as indices of creativity, these researchers have attempted to analyze young children's creative potential. Creativity, as defined in this research, is "the interpersonal and intrapersonal process by means of which original, high quality and genuinely significant products are developed" (Moran, Sawyers & Tegano, 1987, p. 3). Thus, the criterion for creativity changes with development: the criterion is originality for young children, quality of product in older children, and significance based on societal evaluation for adults (Moran, Sawyers & Tegano).

Creativity is an important aspect of human behavior that merits attention. Guilford (1950), in his

presidential address to the American Psychological Association, spoke of the "appalling neglect" of research in creativity. He pointed out that in order to ensure future innovative thoughts and actions schools should encourage the development of creative behaviors. Guilford emphasized the importance of developing and facilitating creative behaviors in children in response to movements that exerted pressures for conformity in schools.

Other researchers agreed with Guilford's observations. Getzels wrote, "creativity is one of the most highly valued of human qualities" (Getzels & Jackson, 1962, p. vii). Wallach and Kogan (1965), Torrance (1981), and Treffinger, Isaksen and Firestien (1982) also emphasized the necessity of facilitating creativity in children. Parnes (1966) indicated that the emphasis in education has been on creative teaching rather than on the development of creative behaviors.

The Creativity and Intelligence Distinction

Guilford's Structure of the Intellect

Is it possible to separate creative abilities and processes from those associated with intelligence? In the early 1950's, J. P. Guilford and his associates began working on a model of human intelligence that shows this distinction. There are three components of the Structure of the Intellect (SOI), contents, products, and operations,

and 150 unique mental abilities that are defined as functions of all three of the basic components of intelligence (Guilford, 1956). Of the 150 abilities shown by the model, 120 have been demonstrated through factor analysis. The remaining 30 have yet to receive as much research attention (Guilford, 1977).

The operations component of the SOI model consists of cognition, memory, productive thinking, and evaluation, all of which play important roles in creative thinking (Guilford, 1956). Cognition is the structuring of perceived information and memory is the storage of cognitive information. Productive thinking, the retrieval of stored information from memory, is divided into two distinct processes: divergent thinking and convergent thinking. Divergent thinking is a broad search of the memory in which there is no one, unique, "right" or "wrong" answer or solution. This type of thinking involves looking in many places and areas for possible solutions. On the other hand, convergent thinking is a more focused memory search for the one correct answer or solution. Therefore, all convergent thinking is channeled toward the one "right" answer (Davis, 1986). Evaluation, the final factor of operations, follows each operation (Guilford, 1956). It is easy to see the origin of the difficulty in distinguishing between intelligence, which is typically measured by convergent thinking, and creativity, which is typically

measured by divergent thinking. Yet, according to Guilford's model, these two thought processes are focused in similar content, product and operations.

Creative thinking involves divergent thinking abilities and content and product factors (Guilford, 1956). The creative thinker must be able to conduct a broad, nonexclusive memory search and use existing knowledge to transform things and ideas into viable solutions and answers. Of Guilford's eight subprocesses of divergent thinking, three relate to young children's creative potential as measured by ideational fluency, the ability to generate many answers. These are: fluency, the ability to generate ideas that meet particular requirements such as color, size, or shape; flexibility, the ability to vary categories of responses; and originality, the statistical frequency of the response.

This research will focus on the measurement of fluency and originality in the assessment of the creative potential of young children; however, flexibility will not be assessed in this research.

Multidimensional Stimulus Fluency Measure

The measurement of creativity in young children is a relatively new field with most of the research taking place in the last decade. The Multidimensional Stimulus Fluency Measure (MSFM) (Moran, Milgram, Sawyers & Fu, 1983a), based

on the work of Wallach and Kogan (1965), Ward (1968, 1969), and Starkweather (1964, 1971), is a measure of creative potential of young children (see Appendix B). The MSFM consists of three subtests: Unusual Uses, Instances, and Pattern meanings. The Unusual Uses subtest requires children to name all the possible uses that they can think of for a familiar item such as a box; the Instances subtest requires children to name items that have a certain feature in common such as being round; and the Pattern meanings subtest has the children generate things that three-dimensional patterns could be. The test allows for adequate warm-up, is individually administered, and is untimed. It is scored for both fluency and originality. Originality is defined as those responses given by fewer than 5 percent of the normed population (Godwin & Moran, 1988).

Tegano, Moran, and Godwin (1986) point out that assessments of creativity in children may serve several purposes by emphasizing (a) the positive aspects of creativity, (b) the importance of a "'no right-or-wrong' approach," (c) an explanation for unusual classroom behavior of the creative child, and (d) the process of creativity.

The MSFM is a reliable and valid measure of ideational fluency for preschool children. Godwin and Moran (1988) reports significant intertask correlations for both

originality (coefficients ranging from .34 to .65) and total fluency (coefficients ranging from .32 to .66). Scoring reliability for the originality and fluency scores range from .91 to 1.00 with correlation coefficients for the Uses subtest ranging from .69 to .99 (Godwin & Moran, 1988). The scoring for the Uses subtest tends to require more judgment and therefore is considered more difficult to score.

Validity for the MSFM was established by cross-validation with Torrance's Thinking Creatively in Action and Movement (TCAM), another measure of creativity in young children (Tegano, Moran & Godwin, 1986; Torrance, 1981). A significant correlation coefficient of .61 for total fluence scores was reported; the originality score, the preferred score on the MSFM, was significantly correlated with the total score, the preferred score on the TCAM. Intertask correlations ranged from .35 to .84, demonstrating construct validity (Tegano, Moran & Godwin, 1986).

Although reliable and valid measures of ideational fluency are available, creativity remains a difficult trait for teachers to assess. Individual administration of creativity tests to preschool children limits their usefulness in classroom situations. Furthermore, there is little research to show that measured ideational fluency is related to observable creative behaviors in preschool

children. Thus, even with valid and reliable measures of ideational fluency for preschool children, there remains a need for a more pragmatic validation of the measurement of creativity.

Social Validation

To socially validate a measure of creativity is to ascertain, by some observational method, whether or not that instrument really does assess or predict creative behavior (Wolf, 1978; Runco, 1984). Tests can provide a certain amount and type of information that can be limited in scope. By including the behavioral observations of significant others who constitute part of the individual's society, such as teachers, parents, and peers, in the assessment process, a much broader picture of the desired construct can be drawn (Runco, 1984). According to Wolf (1978), social validation has three purposes. First, the instrument must be shown to measure goals that are socially significant. Are these goals important to either society in general or a specific? Second, the measure must be deemed appropriate by those involved. Are the procedures acceptable by those who administer them and those to whom they are administered? Third, the effects of the measure must be socially important. Do the results meet with the user's approval?

Twardosz, Schwartz, Fox, and Cunningham (1979) designed a measure based on the principles of social validation to assess the expression of affectionate behavior in daycare settings. The results of this procedure indicate that social validation is a valid and reliable means of measuring a complicated construct such as affectionate behavior.

Kazdin (1977) used a social validation procedure to assess behavior change as a result of therapeutic techniques. Through peer comparisons, the method of social validation provided an attempt to quantify the degree of behavior change resulting from therapeutic treatment. This study also pointed to the usefulness of the social validation technique in measuring differences.

Creativity is a construct similar to the constructs of affectionate behaviors and the effectiveness of therapeutic techniques in that a universal definition has yet to be agreed upon; and therefore social validation seems appropriate. Affectionate behavior, therapeutic techniques and creative potential are terms that are intuitively understood, but not always easily defined. Social validation procedures lend credence to the measurement of these behaviors.

Runco (1984) designed a study to show the merits of using social validation with the construct of creativity and to assess the social validity of divergent thinking

tests. In this project, 240 intermediate school children were used as a representative sample of "gifted," "talented," and "nongifted" children. This sample was an ethnic representation of Hispanic, Asian, and White children. Each of the six teachers involved, whose mean time of teaching was nine years, four months, had either received a Master's degree or were in the process of obtaining their Master's.

The questionnaire developed for Runco's study, The Teacher's Evaluation of Student's Creativity, consisted of 25 descriptive items. The items were compiled from a survey taken by a group of "naive student teachers" (Runco, 1984, p. 713) who were asked to give synonyms of creativity, list behaviors of creative children, and list personality traits common to creative students. The statistically popular responses, 20 in all, were used along with the adjective "creative." Antonyms of four of the responses were included to avoid a response set. The items were preceded in the checklist by the phrase, "to what degree, or how often is this child . . ." and followed by a Likert scale of seven choices, ranging from (1) "rarely" to (7) "extremely" (Runco, 1984).

Creativity measures, consisting of a test of fluency and a test of originality, adapted from Wallach and Kogan (1965) were administered to the children and questionnaires were completed by the teachers. The teachers' evaluations

were assessed and found to be reliable: alpha was .96 overall, with tests of internal reliability ranging from .91 to .97. Age and sex effects were not significantly related to teacher evaluations. Reliabilities of the divergent thinking tests were measured with the average inter-item correlation of .64 for fluency and .59 for originality and the average intertest correlation of .65 for fluency and .36 for originality. To assess discriminant validity of the teacher evaluations, correlations were calculated between the evaluations and IQ scores. Coefficients were negative and nonsignificant for gifted children and talented children. No information was given for the control group.

The social validity of the creativity measures was assessed by obtaining a correlation between the composite fluency and originality scores and the teacher evaluations. Significant correlations were found for all three groups of children. As shown by these significant correlations, the Wallach and Kogan adaptations have social validity. They accurately reflect the list of synonyms for behaviors and personality traits common to creative students that the teachers see in their intermediate school students on a day-to-day basis.

A study that assessed the relationship between teachers' ratings of intelligence and creativity indicated that preschool teachers' judgments of children's creativity

were influenced by intelligence factors (Nicholson & Moran, 1986). In this study, teachers were not able to distinguish between creative children and intelligent children. Preschool teachers were asked to rate their students on creativity and desirability. A definition of creativity was given to the teachers, and they were then asked to rate each child on a five-point scale. The teachers were then asked to list the three or four most and least creative students. In rating desirability, the teachers were asked to use the five-point scale to indicate how much they enjoyed having each child in their classrooms. They were also asked the most and least desirable students in their classrooms. The MSFM was administered to evaluate creative potential and the Information and Picture Completion subtests of the Wechsler Preschool and Primary Scale of Intelligence were administered for an IQ score. The results indicated that the teachers were rating intelligence and desirability rather than creativity (Nicholson & Moran, 1986).

Nicholson and Moran suggested that a social validation method such as Runco's (1984) be used to assist teachers in discriminating between IQ and creativity by providing more specific behavioral definitions of creativity. Because it appears that teachers are unable to discriminate between creativity and intelligence when given a single definition of creativity, there is a need for a measure that better

describes creative behaviors. A rating form could provide a guide to identification of creative preschoolers and also raise teacher awareness of cognitive styles, personality traits, and play environments associated with fostering the creative potential of young children.

Summary

Intelligence and creativity are thought to be two distinct constructs. In order to aid the identification and facilitation of creative young children, it is necessary for teachers to be able to distinguish between these two constructs. The social validation process may assist in the early identification of creative behavior in young children.

The MSFM is a proven valid and reliable measure of the creative potential of preschool children where ideational fluency is the criterion. The instrument is easy to administer and because it is presented in a game-like, nonpressured manner, it can be an enjoyable experience for children. The social validation process involves empirically examining a checklist of descriptors of creative potential. This assessment process will provide essential information for the identification and study of creative potential in young children, while increasing teachers' awareness of behavioral indicators of creative potential in young children. This study will contribute to

the development of a valid teacher rating scale for assisting in the identification of cognitive, personality and contextual variables which are related to creativity but not related to IQ.

CHAPTER III

METHODS AND PROCEDURES

The purpose of this study was twofold: (a) to socially validate the Multidimensional Stimulus Fluency Measure, and (b) to develop an efficient, valid, and reliable rating form that assists teachers in distinguishing between certain behaviors in highly creative and highly intelligent young children. It is important for teachers to be able to distinguish between children who are creative and/or children who are intelligent in order to design and implement the appropriate curricula to facilitate the creative potential of young children. Likewise, social validation provides additional important information from people with whom the children interact on a consistent basis such as teachers (Runco, 1984).

Research Questions

1. How is the creative potential of young children, as measured by the Multidimensional Stimulus Fluency Measure, related to the cognitive, personality, and contextual variables as measured by a teacher rating scale?

2. Does the teacher rating scale effectively discriminate between creative and intelligent preschool children?

Subjects

The original sample of teachers consisted of 17 teachers who were recruited from a group of local preschools and child care centers. In each classroom, the preschool teacher and/or teacher's aide who volunteered to participate were given a detailed letter of explanation and a detailed consent form to sign (see Appendix C). During data collection, one teacher withdrew due to time constraints. As data were being analyzed, another teacher's rating forms and checklist were dropped based upon a series of incomplete rating forms. The final sample of teachers was 15.

The teachers represented a range of experience and education. The mean length of time in the teaching profession was 53.5 months, ranging from 2 months to 126 months. The educational experience ranged from high school graduates to teachers who had pursued post-baccalaureate degrees. Three of the teachers had high school degrees; three had achieved CDA's; seven had earned bachelor's degrees in a child care related field; and two had studied beyond a bachelor's degree. Twelve of the teachers were

classroom teachers, one was a teacher's aide, and two were administrators.

Explanatory letters and detailed consent forms were also sent to the parents or legal guardians of each child in the chosen classrooms (see Appendix C). Fifty children were randomly chosen from those who returned informed consent letters. During the course of the study, 10 children had to be dropped for a variety of reasons. Four children were dropped due to illness that prevented them from attending school during testing times. Data for two children could not be included because they were six years old at the time of testing, and the testing norms were valid for children under six. Two additional children chose not to participate at the time of testing. One child was not included because of participation in special classes that conflicted with testing times. One child was too young to obtain an IQ score according to the Tellegren and Briggs (1967) formulas for extrapolating WPPSI scores.

The final sample consisted of 40 children, 18 males and 22 females ranging in age from 46 months to 66 months with a mean age of 55.1 months. IQ scores ranged from 91 to 143, with a mean score of 113.9.

Instruments

Three instruments were used in this study. Two were designed for direct use with young children, the

Multidimensional Stimulus Fluency Measure and the Information and Picture completion subscales of the Wechsler Preschool and Primary Scale of Intelligence (see Appendix D). Three teacher rating forms and a checklist comprised the third measure. Rating forms A, B, and C (see Appendix E) were designed for this study. The checklist, part D, was Runco's (1984) checklist of creative behaviors in young children (see Appendix E).

Development of Teacher Rating Forms

The rating forms A, B, and C combined a variety of adjectives and descriptive phrases taken from the literature and a panel of experts. This panel of experts was comprised of 15 teachers of young children and/or child development students who had all recently taken a graduate level course on creativity and young children. Members of this group completed an open-ended survey (see Appendix F) that asked for short descriptive phrases of the creative young child in four specific areas: Personality, Cognition, Play, and Environment. These areas were derived from the Developmental-Ecological Model of Creative Potential in Young Children (Sawyers, Moran & Tegano, 1988).

One follow-up mailing was done. When a sufficient number of the surveys were returned, 15 or 45.7%, the descriptive phrases were categorized according to

components of the DEModel; that is, the teachers' descriptive phrases were judged with regard to how closely they fit into the components of the model.

In addition to the teacher surveys, a review of the existing checklists of creative potential in young children was completed (Renzulli & Hartman, 1971; Starkweather, 1971; Dowling, 1972; Fuqua, Bartsch & Phye, 1975; Lieberman, 1977; Moran, et al., 1983; Runco, 1984; Catron, 1987). Items that met at least one of three criteria were then selected for inclusion on the rating forms. These criteria were: (1) greater than 20% of the panel surveyed listed this or a similar response, (2) listed by less than 20% of the panel surveyed but substantiated by the literature, and (3) did not appear in the teachers' surveys but substantiated by the literature. The criteria by which each item was included is shown in Appendix E. For the final form, five of the items were reworded to create antonyms to avoid response sets. The rating forms followed the domains of the DEModel: Personality (including risk taking, conformity, locus of control, and temperament), Cognition (including fantasy, IQ, curiosity, attention, and cognitive style) and Contextual (including curriculum and play).

The checklist was taken from the design of Runco's (1984) study of social validation and teacher judgments of creativity in young children. It contained 25 descriptors

of the creative child, including four opposites and the word "creative." Runco's checklist was developed in a similar manner, using descriptors obtained from a similar panel of experts. Instead of using a Likert-scale, however, a Yes/No response format was used.

Before the checklists were given to the selected preschool teachers and teacher's aides, they were validated by another panel of experts. This panel consisted of eight university professors, teachers of young children, and graduate students who were not involved in this study.

Administration of the Rating Forms and Checklist

The rating forms and checklist were designed to be completed one per day for a period of four consecutive days. In this way, the instruments were less likely to be associated with the construct of "creativity" than if a teacher were given all four instruments in one day. In addition, a 9-13 item rating form can be more manageable than 34 items, and therefore, a teacher's opportunity to make accurate observations could be maximized. The directions given to the teachers for the rating forms were as follows:

> Please read each statement carefully. Watch the child today. Keeping the individual child in mind, check the response which typifies your impression of the child today. Use the comment sections to give examples or reasons that justify your ratings.

The teachers and teacher aides were given one rating form or checklist each day. Each teacher and teacher's aide was asked to rate each item on a five-point Likert scale: (1) Never, (2) Rarely, (3) Sometimes, (4) Frequently, (5) Always. In addition, they were asked to complete a comment section following each item to justify or explain why each rating was chosen. Space for additional comments was at the end of each rating form.

The directions for Part D, the checklist, were as follows:

> Please read over the following list of adjectives. Keeping the individual child in mind, circle the adjective(s) that best describe him or her.

Multidimensional Stimulus Fluency Measure

The Multidimensional Stimulus Fluency Measure (MFSM), based on the work of Wallach and Kogan (1965), Ward (1968, 1969), and Starkweather (1964, 1971), was designed to measure the creative potential in young children, identified as ideational fluency in the DEModel. The MFSM consists of three tasks: Unusual Uses, Instances, and Pattern Meanings. The Unusual Uses task requires the child to name all of the uses he or she can think of for a specified stimulus. For the Instances task, the child is asked to name all the items he or she can think of that have a specific feature. The third task, Pattern Meanings, allows the child to look at and handle three-dimensional

shapes and name all the things they can be. The MSFM is scored for fluency and originality. The test is individually administered in a game-like manner according to established protocols.

Wechsler Preschool and Primary Scale of Intelligence

The IQ scores were obtained by administering two subtests of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI), the Information and Picture Completion subtests. Scores were extrapolated according to procedures established by Tellegen and Briggs (1967). The WPPSI was individually administered to each child. Validity and reliability information is reported in the manual (Weschler, 1967).

Procedure

Upon receipt of parental consent, each of the selected children in the sample was given the MSFM and the WPPSI subtests. Each child was asked individually if he or she would like to come with the tester and "play some games." The MSFM was administered first, followed by the WPPSI subtests. Care was taken to ensure that all the subjects in each center were tested in the same research setting, thus minimizing the effects of context in the child's ability to generate ideas. If any of the children refused or showed signs of distress, the procedure was stopped and

the child was no longer considered for further participation and suffered no penalty for withdrawing. Two of the 53 children in the original sample chose not to leave their classes and participate.

The participating teachers and teacher's aides were asked to complete three rating forms and one checklist, one a day for four consecutive days. The rating forms and checklist were delivered to them in the morning of each specific day and picked up the following day, with the exception of a center being closed for religious holidays or field trips or the teacher being out due to illness. In these cases, the forms were delivered and collected as soon as possible following the center's reopening or the teacher's returning to work.

Summary

In order to assess the cognitive, contextual and personality variables of creative behaviors and to assist teachers in the identification of creative potential in young children, a series of rating forms and a checklist were developed. Creativity scores, measured as original scores on the MSFM, and IQ were obtained on 51 children. Fifteen teachers completed a series of three rating forms and a checklist, one a day for four days, for each of the participating children in their classrooms.

CHAPTER IV

RESULTS

Multidimensional Stimulus Fluency Measure

Interscorer Reliability

The interscorer reliability was calculated for both total popular scores and original scores and are reported as 98.1% and 99.66%, respectively.

Construct Validity

Internal consistency on the MSFM and correlations with IQ, total originality scores, and total popular scores are reported in Table 1. All correlations between originality scores on the subtests of the MSFM and IQ were nonsignificant and were less than the intercorrelations between the subtests of the MSFM. These correlations demonstrate discriminative validity in that the MSFM is not measuring IQ.

The Rating Forms and Checklist

Interrater Reliability

The reliability of items on the rating forms was assessed by paired T-tests. Each of 22 subjects was rated by two teachers and paired T-tests were then run on the three rating forms and the checklist for these subjects

Table 1. Intercorrelations on Subtests of Multidimensional Stimulus Fluency Measure.

	IO	UO	PX	IX	UX	TOT	TX	IO
PO	.51****	.53****	.28	.18	.36***	.79****	.39***	-.04
IO		.59****	.28**	.40***	.43****	.83****	.53****	.02
UO			.18	.30**	.61****	.88****	.55****	-.09
PX				.43****	.06	.28**	.64****	.30**
IX					.25**	.36***	.78****	.19*
UX						.57****	.69****	-.06
TOT							.60****	-.05
TX								.18

Note: PO = Pattern meanings, original scores
IO = Instances, original scores
UO = Uses, original scores
PX = Pattern meanings, popular scores
IX = Instances, popular scores
UX = Uses, popular scores
TOT = Total original scores
TX = Total popular scores

* $p \leq .01$
** $p \leq .05$
*** $p \leq .01$
**** $p \leq .001$

(see Table 2). Significant differences were found for items A11, B2, C7, D15, and D23. Therefore, these items were judged to be unreliable descriptors of children's creative behaviors and were viewed cautiously in further data analysis.

Interitem Reliability

The reliability of the rating forms was also assessed by comparing similar items on the different rating forms. The correlations of the four pairs are reported in Table 3. These correlations indicate the strength of the items across time.

Social Validity

To socially validate a measure of validity is to ascertain, by some observational method, whether or not that instrument really does assess or predict creative behaviors (Wolf, 1978; Runco, 1984). A series of rating forms and a checklist was used to examine the social validity of the MSFM.

Social Validity of the Rating Forms and Checklist

The means and standard deviations of each item are reported in Table 4. Frequencies for checklist D are listed in Table 5.

Table 2. T-Tests of Rating Form Items and Checklist Items.

Item	T-value	Item	T-value
A1	-2.08*	D1	-1.79*
A2	-1.15	D2	1.79*
A3	-1.84	D3	.43
A4	.36	D4	0.00
A5	2.21**	D5	2.89
A6	1.00	D6	1.49
A7	-1.49	D7	1.00
A8	-1.00	D8	0.00
A9	- .29	D9	0.00
A10	- .80	D10	1.94*
A11	2.61**	D11	2.19**
A12	1.49	D12	1.94*
A13	-1.49	D13	0.00
		D14	1.49
B1	- .84	D15	2.39**
B2	-3.61***	D16	0.00
B3	1.89*	D17	0.00
B4	0.00	D18	1.94*
B5	1.00	D19	1.00
B6	.56	D20	0.00
B7	- .67	D21	-1.00
B8	- .61	D22	1.40
B9	-1.00	D23	2.89**
		D24	- .36
C1	-1.79*	D25	1.00
C2	- .17		
C3	-1.20		
C4	- .69		
C5	-1.62		
C6	- .21		
C7	-3.13***		
C8	-1.18		
C9	2.00*		
C10	- .36		
C11	.64		
C12	-1.79*		

Note: * $p \leq .10$
** $p \leq .05$
*** $p \leq .01$
**** $p \leq .001$

Table 3. Inter-Rating Form Reliabilities.

Item	Description	r
A3.	Child is imaginative.	
		.57****
B7.	Child is imaginative, enjoys fantasy.	
A4.	Child is questioning, curious, wonders how things work.	
		.74****
B2.	Child is interested in many things, is curious, questioning.	
A6.	Child is opinionated, outspoken, willing to talk openly and freely.	
		.39***
A11.	Child is shy, needs prompts to get involved with groups and group activities.+	
		.61****
A13.	Child is uninhibited, has a freewheeling style.	

Note: +Indicates item was a reversal, an antonym of a descriptor of a creative behavior.

*p≤ .10
**p≤ .05
***p≤ .01
****p≤ .001

Table 4. Means, Standard Deviations and Correlations for Rating Form Items.

Item	Mean	SD	N	r		
				IO	TOT	TX
A1	3.64	1.064	50	.14	.24	.16
A2	3.37	1.019	51	-.00	.28**	.06
A3	3.75	.796	51	-.06	.22	-.24*
A4	3.48	.974	50	.21	.18	.27**
A5	2.94	1.018	50	.11	.07	-.04
A6	3.45	1.137	51	.18	.33**	.19
A7	2.33	1.178	51	-.04	.11	.04
A8	3.27	1.078	51	-.37***	.21	.23*
A9	3.24	.992	51	.11	.30**	.20
A10	3.61	1.021	51	-.06	.02	.14
A11	3.69	1.086	51	-.04	.03	.25*
A12	3.43	.900	51	-.04	.18	.12
A13	3.35	1.146	51	.08	.24	.10
B1	3.33	.931	51	.05	.32**	.04
B2	3.72	.981	51	.17	.33****	.22*
B3	3.47	.951	49	-.18	.36***	.20
B4	3.42	1.032	50	.00	.14	.08
B5	3.42	1.032	50	.17	.04	.05
B6	2.90	.974	50	-.10	.13	.04
B7	3.75	.913	51	.02	.30**	.13
B8	2.75	.956	51	.03	.30**	.21*
B9	3.35	1.036	51	.08	.05	.11
C1	4.30	.614	50	-.11	-.12	-.12
C2	3.34	.895	50	.24*	-.05	-.03
C3	3.64	.898	50	.17	.27**	.25*
C4	2.68	1.077	50	.02	.35***	.24*
C5	3.35	.855	49	.04	.35***	.13
C6	3.25	.934	48	-.26*	.04	.07
C7	2.78	1.055	50	.19	.29**	.12
C8	3.18	1.093	49	.00	.08	.00
C9	2.85	.922	48	.09	-.11	-.25*
C10	3.74	.777	50	-.27**	.07	-.17
C11	3.08	1.115	49	.04	-.08	-.15
C12	3.58	.883	50	.26**	.19	.21*

Note: * $p \leq .1$
** $p \leq .05$
*** $p \leq .01$
**** $p \leq .001$

Table 5. Frequencies of Responses for Checklist Items.

Item	Frequency	
	Yes	No
D1	25	26
D2	36	15
D3	16	35
D4	16	35
D5	14	37
D6	4	47
D7	34	7
D8	35	16
D9	19	32
D10	6	45
D11	18	33
D12	8	43
D13	25	26
D14	5	46
D15	35	16
D16	22	29
D17	8	43
D18	18	33
D19	9	42
D20	24	27
D22	29	22
D23	12	39
D24	12	39
D25	24	27

Thirteen Selected Items

Each item on the checklist was examined according to the relationship: (a) to the other items on the rating forms (see Appendix G); (b) to total original and popular scores on the MSFM (Table 4); and (c) to IQ (see Table 4). Thirteen items were found to meet the following criteria:

(a) Significant correlation with total originality score indicating a relationship between the teacher's rating of a child's behavior and measured original thinking (social validation).

(b) Correlations with greater than 50% of the other items on at least two of the three subscales, A, B, and C, indicating a degree of internal validity.

These items are:

A6. Child is opinionated, outspoken, willing to talk openly and freely.

A9. Child is a nonconformist, does things his or her own way.

B1. Child is verbally expressive, e.g., makes up funny words.

B2. Child is interested in many things, is curious, questioning.

B3. Child is self-directed, self-motivated.

B7. Child is imaginative, enjoys fantasy.

B8. Child engages in deliberate, systematic exploration, develops a plan of action.

C3. Child likes to use his or her imagination in play, prefers pretend play.

C5. Child is innovative, inventive, resourceful.

C7. Child explores, experiments with objects, e.g., pulls things apart purposefully.

D13. Flexible.

D24. Good at designing things.

D25. Creative.

Intercorrelations of the 13 items are listed in Table 6.

Two items, B2 and C7, met the preceding criteria but were found to have significant differences between raters ($T = -3.61$, $p \leq .005$; $T = -3.13$, $p \leq .001$, respectively) according to the T-tests. Another item, C4, had a positive, significant correlation with total originality scores; however, it did not show significant intercorrelations with greater than 50% of the items on any subscale. Later comparisons of C4 and the 13 items selected revealed nonsignificant correlations with 10 of the 13 items. This item was dropped.

Relationship of MSFM to DEModel

The 13 selected items were examined according to their respective categorization in the DEModel: Personality, Cognitive, and Contextual. The intercorrelations of the items within each of the three categories were examined (see Table 7). The intercorrelations within the

Table 6. Intercorrelations of Thirteen Selected Items.[a]

	A9	B1	B2	B3	B7	B8	C3	C5	C7	D13	D24	D25	TOT	IQ
A6	.60**** (51)	.42**** (51)	.65**** (51)	.38*** (49)	.44**** (51)	.55**** (51)	.10 (50)	.32** (49)	.49**** (50)	.04 (51)	-.02 (51)	.03** (51)	.33** (51)	.18 (51)
A9		.28** (51)	.33*** (51)	.30** (49)	.35*** (51)	.23** (51)	.21** (50)	.41*** (49)	.22* (50)	.24** (51)	-.05 (51)	-.01 (51)	.30** (51)	.11 (51)
B1			.52**** (51)	.23* (49)	.57**** (51)	.43**** (51)	.32** (50)	.48**** (49)	.34*** (50)	.01 (51)	.15 (51)	.21* (51)	.32** (51)	.05 (51)
B2				.40**** (49)	.46**** (51)	.67**** (51)	.25** (50)	.45**** (50)	.49**** (50)	.01 (51)	.04 (51)	-.18* (51)	.31*** (51)	.17 (51)
B3					.40*** (49)	.55*** (49)	.36*** (48)	.59**** (47)	.12 (48)	.03 (49)	.12 (49)	-.08 (49)	.36*** (51)	-.18 (51)
B7						.43**** (51)	.55**** (50)	.32** (49)	.30** (50)	.07 (51)	.10 (51)	.13 (51)	.30** (51)	.02 (51)
B8							.10 (50)	.49**** (49)	.40*** (50)	-.06 (51)	-.00 (51)	.08 (51)	.30** (51)	.03 (51)
C3								.35*** (49)	.09 (50)	.06 (50)	.35** (50)	-.12 (50)	.27** (51)	.17 (51)
C5									.21* (49)	.02 (49)	.12 (49)	-.24** (49)	.35*** (51)	.04 (51)
C7										-.05 (50)	-.03 (50)	.22* (50)	.29** (51)	.19 (51)
D13											.20* (51)	.18 (51)	.25* (51)	.04 (51)
D24												.22* (51)	.36*** (51)	.24 (51)
D25													.25** (51)	-.07 (51)

Note: [a]Criteria for selection of items were significant correlations with total original scores on MSFM and correlations with greater than 50% of the other items on at least two of the three subscales, A, B, and C.

Number of subjects in parentheses.

* p≤ .1
** p≤ .05
*** p≤ .01
**** p≤ .001

Table 7. Intercorrelations of Items Within the DEModel Domains.

	Personality					Cognitive								Contextual		
	A9	B2	C3	C7	IQ	B2	B3	B7	B8	C3	C5	C7	IQ	C5	C7	IQ
A6	.60****	.65****	.01	.49****	.18											
A9		.33***	.21*	.22*	.11											
B2			.25**	.49***	.17											
C3				.09	.17											
C7					.19											
B1						.52****	.23**	.57****	.43****	.32***	.48****	.34***	.17			
B2							.40***	.46****	.67****	.25**	.45****	.49****	.17			
B3								.40***	.55****	.36***	.59****	.12	-.18			
B7									.43****	.55****	.32***	.20**	.02			
B8										.10	.49****	.40***	.03			
C3											.35***	.09	.17			
C5												.21*	.04			
C7													.19			
C3														.35***	.09	.17
C5															.21*	.04
C7																.19

Note:
* p≤ .1
** p≤ .05
*** p≤ .01
**** p≤ .001

personality domain ranged from .09 to .65, with only 2 intercorrelations out of 10 being nonsignificant. The intercorrelations for the cognitive domain ranged from .09 to .67, with 3 out of 28 being nonsignificant intercorrelations. The intercorrelations within the contextual domain ranged from .09 to .35, with 1 nonsignificant intercorrelation out of 3, indicating that this scale was not strong.

IQ Versus Creativity

The correlations between the rating form items and total original scores, total popular scores and IQ demonstrate the effectiveness of the rating forms in discriminating between creative and intelligent preschoolers (see Table 4). For the 13 select items, all were significantly correlated with IQ (see Table 6). Of the total 34 items, only 5 items correlated significantly with IQ scores but not with original scores. These items were A8, C2, C6, C10, and C12 ($r=.37$, $p=.029$; $r=.24$, $p=.07$; $r=-.26$, $p=.06$; $r=0.27$, $p=.05$; and $r=.26$, $p=.05$, respectively).

Summary

The results indicate that behaviors associated with creative potential in young children can be classified according to the domains of the DEModel: cognitive,

personality, and contextual. The 13 selected items demonstrate certain behaviors may be more closely related to creativity than intelligence.

CHAPTER V

DISCUSSION

This chapter discusses the findings reported in Chapter IV. The discussion is followed by the implications of this research and suggestions for future studies.

Psychometrics

Among the 34 rating form items and 25 checklist items, 13 met the criteria that were established for selection. These descriptors of creative behaviors represented the three domains within the DEModel (personality, cognitive, and contextual) and were substantiated throughout the creativity literature and by teachers' classroom observations. None of the 13 items were correlated with intelligence. These items have been shown to discriminate between creativity and intelligence in this study.

The interitem reliability demonstrated the strength of descriptors across time, from one day to the next, and served as checks of the reliability of teacher ratings. However, no items from rating form C were involved in the interitem reliability. This has been noted as a weakness in the research methodology.

Creativity and Intelligence and the DEModel

The present study found that only 5 items out of 34 were correlated with IQ. In contrast, a similar study of teacher ratings of creativity by Nicholson and Moran (1986) concluded that when given a definition of creativity and asked to describe children within a range of "extremely creative" to "extremely uncreative," teachers were more likely to choose the more intelligent children as creative. Rather than using a single definition of creativity, perhaps teachers need short phrases that are descriptive of creative behaviors to guide their identification of creative potential. The descriptors may provide a more precise distinction between the creative child and the intelligent child.

When given brief descriptions, teachers may be able to look at more specific behaviors within a theoretical framework than when teachers are given only a single definition of creativity. The 13 selected items represent the three domains of the DEModel (cognitive, personality, and contextual). This model illustrates the numerous influences that may determine the creative potential in young children. The cognitive, personality and contextual variables, theoretically linked to creative potential, may be displayed in different ways and combinations in any child. Therefore, this rating form may be more effective

than a single definition for outlining creative behaviors in young children. Nicholson and Moran (1986) found no correlations between their teacher ratings and the measured creativity and suggested a study similar to the present study.

While Nicholson and Moran (1986) found significant correlations between teacher ratings of creativity and IQ, Runco (1984) reported negative and nonsignificant correlations between teacher ratings of creativity and IQ in his sample of intermediate school-aged gifted children and talented children. The present study found, among the 13 selected items, no correlations with IQ and significant correlations with original scores. While the present study attempted, in part, to replicate Runco's findings, similar results were not found. Only three of the checklist items correlated with creativity but not with IQ for preschoolers. One explanation for these results may be the differences in the two samples. While the methodologies were similar, Runco's sample consisted of intermediate school children and teachers who were highly educated. The present sample consisted of preschool age children and teachers with a wide variety of educational backgrounds.

Another explanation may be that a more structured form of presentation, such as short descriptive phrases, is needed in order to assess creative potential in young children. Perhaps the less structured atmosphere of a

preschool classroom provides more opportunities to exhibit creative behaviors. Therefore, the more structured approach of short descriptive phrases may be the more appropriate means for teachers to recognize these behaviors.

The differences in the results may also be explained by the use of the seven-point Likert scale in Runco's study versus the use of a Yes/No response choice in the present study. The biserial correlations associated with the Yes/No response are more difficult to interpret as opposed to the Likert scale.

The five items that correlated with IQ were (a) ". . . sensitive to others, thoughtful," (b) ". . . can find diverse uses for ordinary objects, . . .," (c) ". . . content of child's stories . . . related to things in environment . . .," (d) ". . . is joyful and spontaneous," and (e) ". . . chooses many activities . . . ." They have no apparent interrelationship based upon their content. However, there are possible explanations for these items' correlations with IQ. The wording may have been confusing (two items were longer than most of the others) or too vague (e.g., child is joyful, spontaneous).

The correlations between the five items and IQ may have been a function of the methodology. Because four out of these five items were from rating form C, which was administered on the third day, teacher fatigue may have

played an important role. The teachers may have become less conscientious in completing the daily rating forms. Examination of the comment sections on the three rating forms revealed fewer teacher comments on rating form C than on rating forms A or B. Also, in their haste to complete the forms, the teachers may have attributed positively perceived descriptors to the intelligent children. Nicholson and Moran (1986) found that the teachers in their study were more likely to select positive attributes for the more intelligent children. Rater fatigue may have also been a factor in the discrepancy between Runco's results and the results of the present study. In future study, the fatigue factor needs to be taken into consideration.

Conclusions

This study has demonstrated that the teacher rating forms designed for this study provided assistance in distinguishing between creative young children and intelligent young children. The 13 selected items were shown to be distinct from IQ and significantly correlated with original scores on the MSFM.

It has also been shown that brief descriptions of observable behaviors, in the cognitive, personality and contextual domains of the DEModel, may be more effective in contributing to the identification of creative potential in

young children than either a single definition of creativity or a checklist of synonyms for creativity.

Implications for Teachers

In order to provide a classroom environment that encourages creativity in young children, teachers need to be able to identify the creative behaviors. Through the use of a short rating form that consists of brief descriptions of creative behaviors, teachers may be assisted in the identification of creative behaviors and plan curricula that facilitate creative learning.

By using an observational method of assessment, teachers may be able to see children and classrooms from a different perspective. The teacher who sees the nonconformist in his or her classroom as stubborn may become more patient with this behavior if it is positively linked to creativity. Instead of becoming irritated with the child who is outspoken, the teacher may see this behavior as a positive correlate to creativity and provide ways within the classroom to use this behavior to facilitate creative thinking. The use of an observational tool assists teachers in becoming more familiar with each student and his or her unique qualities.

By using a more structured observational guide to creative potential in young children along with a formal measure, teachers may be able to identify target behaviors

and implement changes within the curriculum that encourage these behaviors. Critical thinking skills and creative problem-solving can be facilitated within the classroom with the help of effective identification methods. The thinking skills learned in the early years provide a basis for future learning.

Researchers suggest that teachers take several steps in providing the appropriate environment for the development of creativity in young children. For children to feel secure enough to explore and create, classroom teachers must provide a psychologically safe environment. This environment encourages creative problem-solving while providing children with the security of limitations (Tegano, Sawyers, Parsons, Bennett, Bakshi & May, 1988).

Teachers also need to be able to identify the children's interests and provide activities to enhance these interests and increase the level of problem-solving skills. Children also need to be encouraged to participate in decision-making activities and learn to judge his or her ideas. By developing these critical thinking skills, children can begin to see the merits of their solutions to problems (Tegano, et al., 1988).

An important skill that teachers need to develop is that of refraining from judging children's efforts at creative endeavors. By suspending judgment, teachers can

effectively encourage the generation of ideas (Tegano, et al., 1988).

Finally, teachers need to be aware of the amount of time children need to develop ideas. Individual children solve problems at different rates and this should be respected by classroom teachers (Tegano, et al., 1988).

By using a structured observational guide, such as a rating form, in conjunction with a standardized measure, teachers may be assisted in the identification of creative behaviors within the classroom and become more aware of individual children's problem-solving skills. The rating form may also increase teachers' observational skills while focusing on the identification of creative behaviors.

Future Study

A future study based upon the findings of this research is being planned. Using the 13 selected items, a revised rating form will be developed. Other items from the original 34 may be included if they are seen as theoretically sound but were not included in the 13 select items because of methodological weaknesses. This particularly applies to the items of rating form C.

A shorter rating form will maximize conscientious completion of the rating form by teachers. Teachers may pay more attention to the content of the items and be more motivated to complete the forms if there are fewer items.

In addition to the revised rating form, the checklist will once again be used. In this study, however, a seven point Likert scale will be employed as in Runco's study.

The revised rating form will be completed by preschool teachers; however, in an effort to establish further inter-item reliability, a greater number of teachers will complete rating forms on the same children. T-tests will be run to assess the differences. Also, responses will be examined according to teacher education levels.

The same version of the revised rating form and checklist may also be administered to the parents of the children in the sample. In order to obtain a more complete profile of a creative child, it is important to include behaviors observed at home.

By using a larger sample of children and teachers, and by including information from parents, more evidence can be gathered that may substantiate the findings of the present research concerning the distinction between creativity and IQ and the relationship of the domains of the DEModel to creative behaviors.

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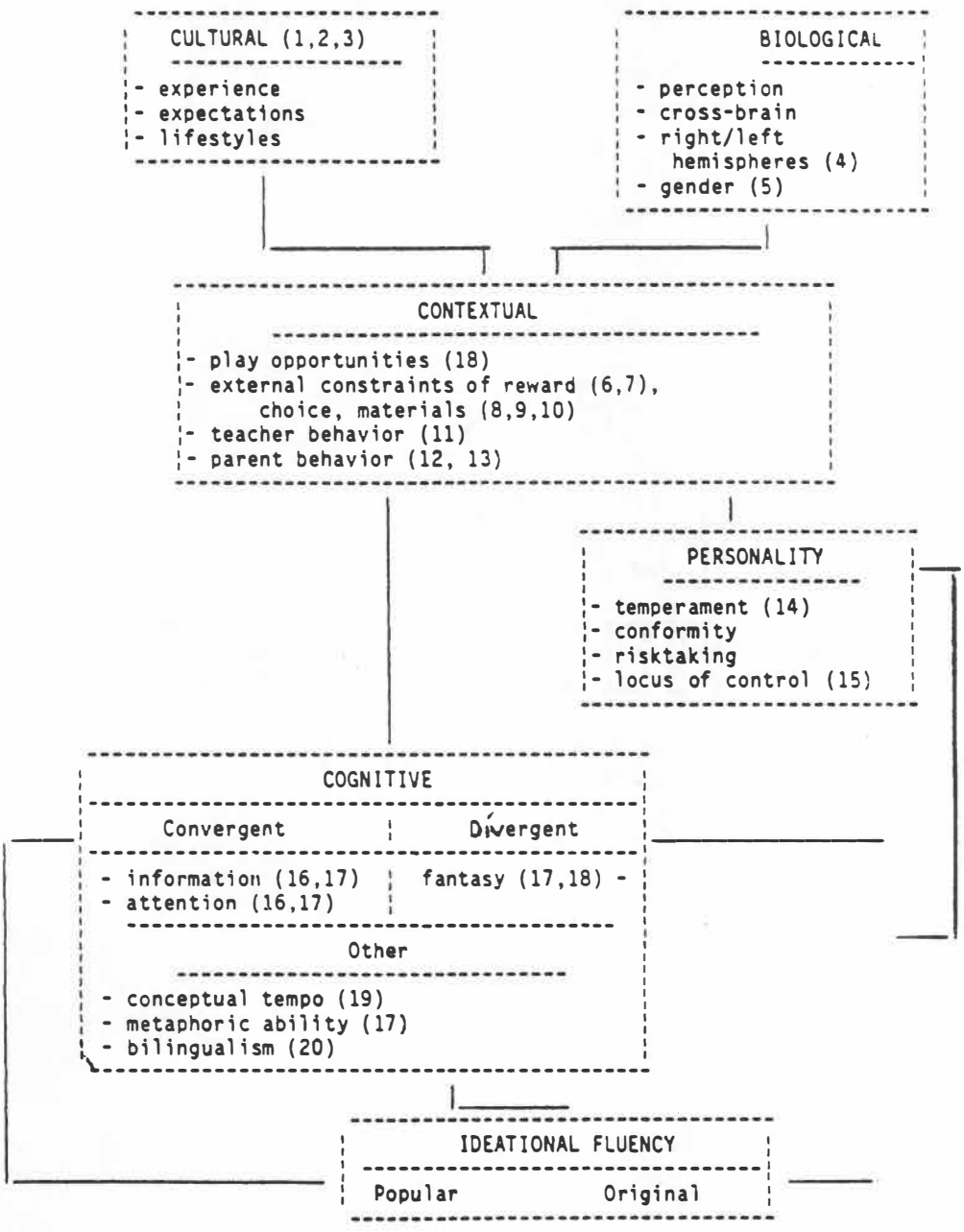
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APPENDIXES

APPENDIX A

DEVELOPMENTAL-ECOLOGICAL MODEL OF CREATIVE POTENTIAL IN YOUNG CHILDREN

Theoretical Model of Creative Potential in Young Children
@ Sawyers, J. K., Moran, J. D. III, & Tegano, D. W., 1986



APPENDIX B

MULTIDIMENSIONAL STIMULUS FLUENCY MEASURE

MSFM
Creativity Research
Examiner Report Form

Subject Number _____ **Date:** _____ **Time of Day** _____

Gender: Male Female **Experimenter** _____

Race: _____

The Examiner Says:

> **Today we are going to play some games. They are a new kind of game which you have probably not played before. We will play several different games. These are thinking and imagination games. You don't have to hurry. We can play as long as you want.**

Proceed to Task 1.

General Comments:

MSFM
Creativity Research

Uses Task Intructions

"Now today we have a game called 'What can you use it for?' The first thing we're going to play with will be a pencil. (Experimenter hands pencil to child). I want you to tell me all the things you can think of that you can do with a pencil, or play with it, or make with it. What can you use a pencil for?" (Let child try to generate responses). Then replay with "Yes, that's fine. Some other things you could use a pencil for are as a flagpole, to dig in the dirt, or you could use a pencil as a mast in a toy boat. Probably there are a lot of other things too." (The examiner should vary answers so as to give all of these which the child did not give). Then proceed by saying "You see that there are all kinds of different answers in this game. Do you know how to play?" If the child does not understand, repeat procedure from beginning. If child still doesn't understand, terminate. The examiner should then say: "Now remember I will name something and you are supposed to tell me as many uses for it that you can think of. Take as long as you want. Let's try this one." (No help should be given to the child on test items).

1. What can you use a BOX for?

2. What can you use PAPER for?

Problems may arise when children ask additional questions. For example, if the child asks "What size box?" the experimenter should reply with a very neutral answer such as "Whatever size you think of." All clarifications of the test questions should be of non-commital type.

When the child stops responding ask "What else can you think of" or "Is there anything else you can think of" until child indicates he or she has no more responses

Uses Answer Form - Box

Subject Number _____

What can you use a BOX for?

Child's Reponse	

Uses Answer Form - Paper

Subject Number _____

What can you use PAPER for?

Child's Response	

Patterns Task Instructions

This task deals with the three dimensional designs. The administration of the test should go as follows:

"In this game I'm going to show you some blocks. After looking at each one I want you to tell me all of the things you think each block could be. Here is an example--you can turn it any way you'd like to." (Give the example block to the child.) "What could this be?" (Let the child respond). "Yes, those are fine. Some other things I was thinking of were a bridge, a bed, a building block, a chair and there are probably a lot of other things too." (The experimenter should vary answers so as to give different ones than the child. If the child indicates understanding of the game, then proceed with the tasks.)

Patterns Answer Form - 

Subject Number _____

Name all the things you think this could be: 

Child's Response

Patterns Answer Form - 

Subject Number _____

Name all the things you think this could be: 

Child's Response	

Instances Task Instructions

"Now we're going to play a game called 'All the things you can think of.' I might say 'Tell me things that hurt' and I would like you to tell me as many things as you can that hurt. Let's try it. Please tell me all the things you can think of that hurt." (Let the child try to generate responses.) Then reply with "Yes, that's fine. Some other kinds of things which hurt are falling down, getting slapped, fire, getting bruised, a knife and probably there are a lot of other things too." (The examiner should vary answers to as to give all of these which the child did not give.) Then proceed by saying "You see that there are all kinds of different answers in this game. Do you know how to play?" (If the child indicates understanding of the game then proceed with test items. If the child does not understand, repeat procedure from beginning. If child is still not understanding, terminate test session). The examiner should then say "Now remember, I will name something and you are supposed to name as many things as you can. Take as long as you want. OK, let's try another." (No help should be given to the child when test items are being used.)

1. Name all the things you can think of that are Round.

2. Name all the things you can think of that are Red.

When child stops responding, ask "What else can you think of" or "Is there anything else you can think of" until child indicates he or she has no more responses.

Instances Answer Form - Round

Subject Number _____

Name all the things you can think of that are ROUND:

Child's Response	

Instances Answer Form - Red

Subject Number _____

Name all the things you can think of that are RED:

Child's Response	

APPENDIX C

TEACHER AND PARENTAL CONSENT FORMS

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

April 4, 1988

Dear Teacher:
I am a graduate student in Child and Family Studies at The University of Tennessee, Knoxville, and am studying the ways that children think and act in school. I am developing a measure that will assist educators in identifying certain cognitive behaviors in young children and am asking for your assistance in this development.

I have developed a rating form that consists of four brief sections that focus on various areas of behavior. Each section should take about 10 or 15 minutes to complete. I am requesting that you complete one checklist, a section a day for four days, for four or five of the children in your class. At the end of the four days, I would also like to interview you to get your reactions and opinion of the process. This interview will be audiotaped with the tapes transcribed and then erased. All information gathered during this process will be kept strictly confidential and used for research purposes only. No names will be associated with the results. The benefits for participation in this project include sharpening of observational skills and being involved in research that is designed to assist other educators of young children. No risks are anticipated with this project and participation is strictly voluntary with no penalty for withdrawal.

If you agree to participate in this project, please sign the attached form and return it to me at the address given. If you have any questions, please feel free to call me or Dr. Debbie Tegano at 974-5316.

In appreciation for your cooperation, my major professor and I will offer to conduct an inservice workshop, at your convenience, to share the results of this and similar projects. Thank you for your cooperation.

Respectfully,

Elizabeth Kay Bennett

Elizabeth Kay Bennett
Department of Child and Family Studies
The University of Tennessee, Knoxville
974-5316

College of Human Ecology
Department of Child and Family Studies

*** Please keep this copy for your records ***

Informed Consent

-- I have been informed of the nature of this project which is to study the various cognitive behaviors of young children and develop a measure to assist educators in identifying these behaviors.

-- I understand that I will be given a brief four-part rating form to complete for each of four or five children. The forms should take no longer than 10 minutes each to complete. An interview, lasting no longer than 10 or 15 minutes, will be conducted upon the completion of the rating form.

-- I understand that the information will be kept confidential and used for research purposes only. No names will be associated with the results of this project.

-- I understand that, by participating in this project, I will potentially benefit by sharpening my observational skills and by assisting in the development of a useful tool for other educators. I also understand that these benefits outweigh the potential risk of lack of confidentiality.

-- I understand that participation is voluntary and that there is no penalty for choosing not to participate or withdrawing from the project. I understand, too, that I may contact the principal investigators, Elizabeth Kay Bennett and Dr. Debbie Tegano, at 974-5316 with my questions concerning this project or for further information.

-- I give my consent to participate in this project.

Name _____.

School _____

Signature _____

I am interested in having the results of this and similiar projects shared at a future inservice session at my center.

Yes _____ No _____

I am not interested in having an inservice workshop conducted but I am interested in a written summary of the results of this study.

Yes _____ No _____

*** Please return this copy to the principal investigator***

Informed Consent

-- I have been informed of the nature of this project which is to study the various cognitive behaviors of young children and develop a measure to assist educators in identifying these behaviors.

-- I understand that I will be given a brief four-part rating form to complete for each of four or five children. The forms should take no longer than 10 minutes each to complete. An interview, lasting no longer than 10 or 15 minutes, will be conducted upon the completion of the rating form.

-- I understand that the information will be kept confidential and used for research purposes only. No names will be associated with the results of this project.

-- I understand that, by participating in this project, I will potentially benefit by sharpening my observational skills and by assisting in the development of a useful tool for other educators. I also understand that these benefits outweigh the potential risk of lack of confidentiality.

-- I understand that participation is voluntary and that there is no penalty for choosing not to participate or withdrawing from the project. I understand, too, that I may contact the principal investigators, Elizabeth Kay Bennett and Dr. Debbie Tegano, at 974-5316 with my questions concerning this project or for further information.

-- I give my consent to participate in this project.

Name _____.

School _____

Signature _____

I am interested in having the results of this and similiar projects shared at a future inservice session at my center.

Yes _____ No _____

I am not interested in having an inservice workshop conducted but I am interested in a written summary of the results of this study.

Yes _____ No _____

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

April 4, 1988

College of
Human Ecology

Department of
Child and
Family Studies

Dear Parents or Legal Guardians:

I am a graduate student in Child and Family Studies at The University of Tennessee, Knoxville, and am interested in the ways that young children think and act in school settings. As a part of my master's thesis, I am assessing the various thinking styles of young children and developing a measure that will assist educators in identifying the ways that children think and act.

In order to continue with this project, I am requesting permission to interview your child. With your permission, he or she will be asked to do a few activities that involve identifying shapes and giving uses for familiar items. These activities are similar to those already in your child's home or school. There are no right or wrong answers and no names will be used in reporting the results. Those who have used these activities with young children have reported that the children enjoy playing these games. In addition, two subtests of the Weschler Preschool and Primary Scale of Intelligence will be administered. The process will take no more than 10 or 15 minutes.

All information pertaining to this project will be kept strictly confidential and used for research purposes only. No names will be associated with the results as only numbers will be used. If you wish to review the results of the project, they will be made available upon completion of the project. There is no risk anticipated to your child. Each child will be asked for voluntary participation and may decline or withdraw from the project at any time without its affecting their regular school participation.

If you give your permission for your child to participate in this project, please sign the attached consent form and return it to your child's teacher. Thank you for your cooperation.

1215 West Cumberland Avenue, Room 115 / Knoxville, Tennessee, 37996-1900 / (615) 974-5316

If you have any questions, please feel free to contact me or Dr. Debbie Tegano at 974-5316.

Respectfully,

EKB

Elizabeth Kay Bennett
Department of Child and Family Studies
The University of Tennessee, Knoxville
974-5316

*** Please keep this copy for your records ***

Informed Consent

-- I have been informed of the nature of this project, which is to assess the various thinking styles of young children and develop a measure that will assist teachers in identifying the ways young children think.

-- I understand that my child will be engaged in several activities to determine his or her thinking styles and a shortened version of an intelligence test.

-- I understand that the information will be kept confidential and used for research purposes only. No names will be associated with the results.

-- I understand that my child will be asked for voluntary participation and may choose not to participate or withdraw from the project at any time without penalty. Additional information about this project is available from the principal investigators, Elizabeth Kay Bennett or Dr. Debbie Tegano, at 974-5316.

-- I understand that my child may potentailly benefit from the one-to-one interactions with an adult in a nonthreatening, game-like setting and that there are no foreseeable risks to my child in association with participation in this project.

.....

-- I give my consent for my child to participate in this project.

Name of Child _____

Birthdate of Child _____ Sex of Child _____

Name of Child's School _____

Name of Child's Teacher _____

Name of Parent or Guardian _____

Signature of Parent or Guardian

_____

I am interested in a summary of the group results of this study.

Home Address: (please include zip)

*** Please return this to your child's teacher ***

Informed Consent

-- I have been informed of the nature of this project, which is to assess the various thinking styles of young children and develop a measure that will assist teachers in identifying the ways young children think.

-- I understand that my child will be engaged in several activities to determine his or her thinking styles and a shortened version of an intelligence test.

-- I understand that the information will be kept confidential and used for research purposes only. No names will be associated with the results.

-- I understand that my child will be asked for voluntary participation and may choose not to participate or withdraw from the project at any time without penalty. Additional information about this project is available from the principal investigators, Elizabeth Kay Bennett or Dr. Debbie Tegano, at 974-5316.

-- I understand that my child may potentially benefit from the one-to-one interactions with an adult in a nonthreatening, game-like setting and that there are no foreseeable risks to my child in association with participation in this project.

.....

-- I give my consent for my child to participate in this project.

Name of Child _____

Birthdate of Child _____ Sex of Child _____

Name of Child's School _____

Name of Child's Teacher _____

Name of Parent or Guardian _____

Signature of Parent or Guardian

_____

I am interested in a summary of the group results of this study.

Home Address: (please include zip)

APPENDIX D

WPPSI SCORING SHEET

1. INFORMATION Discontinue: 5 consecutive failures	Score 1 or 0
1. Nose	
2. Ears	
3. Thumb	
4. Bottle	
5. Live—water	
6. Grass	
7. Animals (3)	
8. Milk	
9. Shines—night	
10. Legs—dog	
11. Letter—mail	
12. Wood	
13. Round (2)	
14. Water—boil	
15. Store—sugar	
16. Pennies	
17. Shoes	
18. Days—week	
19. Bread	
20. Seasons	
21. Rubies	
22. Dozen	
23. Sun—set	
Total	

Subject no. _____

Examiner _____

Date _____

4. PICTURE COMPLETION	
Discontinue: 5 consecutive failures, starting with Card 3	Score 1 or 0
1. Comb	
2. Wagon	
3. Doll	
4. Roses	
5. Girl	
6. Fox	
7. Table	
8. Seesaw	
9. Hand	
10. Cat	
11. Bridge	
12. Clothesline	
13. Watch	
14. Shoes	
15. Automobile	
16. Swing	
17. Door	
18. House	
19. Coat	
20. Card	
21. Rooster	
22. Scissors	
23. Screw	
Total	

APPENDIX E

RATING FORMS AND CHECK LIST

TO:

FROM: Kay Bennett

RE: Validation of rating scale

DATE: January 19, 1988

The attached rating scale and validation form is part of my thesis which deals with the social validation of creative potential in young children. As part of the research process, I am requesting your help in validating this rating scale.

The teachers who will use this instrument in my study will be ask to consider the events of a particular day at school and to base their rating on impressions of the child on this day (although I acknowledge that it will be nearly impossible for any teacher to ignore their prior knowledge of the child). I then will ask the teachers to note an example or a comment (a justification, perhaps) of how they rated the child.

This rating scale is designed for use by preschool teachers. Please keep this in mind as you validate the scale.

Directions:
Please read each item on this rating scale and judge it (with 1 = low and 5 = high) in the following categories:

FACE VALIDITY & CLARITY - Is the item clearly phased? After reading the item, would a teacher understand what behavior or attitude to look for?

DISCRIMINATIVE VALIDITY - Is the item likely to discriminate between children or will most children be rated the same on this item?

FREQUENCY OF BEHAVIOR - Is this behavior or attitude likely to be manifested by a child on any given day? How likely is it that the teacher will be able to rate this item for any given day?

Item #	Face Validity 1=not clear 5=very clear	Disc. Validity 1=not likely to discrim. 5=very likely to discrim.	Freq. of Beh. 1=not likely to 5=will observe
A 1	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 2	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 3	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 4	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 6	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 7	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 8	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 9	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 10	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 11	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 12	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
A 13	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 1	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 2	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 3	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 4	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 6	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 7	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 8	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B 9	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 2	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 3	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 4	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 6	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 7	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 8	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 9	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 10	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 11	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
C 12	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

References for Rating Forms

Rating Form A

Item	Reference	Model
1	1,6,8,T1	PER
2	8,T	PER
3	8,7,T	PER,COG
4	2,6,7,T	PER,COG
5*	T	PER
6	6,T	PER
7	T	PER
8	6,7,T	PER
9	6,7,T	PER
10	7,T	PER
11*	T	PER
12	8,T1	PER
13	3	PER

Rating Form B

Item	Reference	Model
1	1,7,T	COG
2	2,8,7,T	COG,PER
3	7,T	COG
4	7,T1	COG
5*	1,T	COG
6	6,T1	COG
7	6,7,T	COG
8	3	COG
9	7,T	COG

Rating Form C

Item	Reference	Model
1	4	CON,PER
2	7,T	CON
3	6,7,T	CON,PER,COG
4	T	CON,PER
5	7,T1	CON,COG
6	5	COG
7	1,2	CON,PER,COG
8	2,6,T1	CON
9*	2,T	CON
10	4,T	CON,PER
11*	T	CON,PER
12	T	CON,PER

Checklist

All Items	7

LEGEND:

Symbols

* = item has been reworded to create an antonym.

T = greater than 20% of teachers surveyed listed this or a similar response.

T1 = listed by less than 20% of teachers surveyed but substantiated by literature.

References

1 = Catron, C.E., et al. (1987). ITK Child Development Laboratories Curriculum. unpublished curriculum guide.

2 = Dowling, R.M. (1972). Preschool Creativity Rating Scale. unpublished rating scale, Edinboro State University, Edinboro, PA.

3 = Fuqua, R.W., Bartsch, T.W., & Phye, S.D. (1975). An investigation of the relationship between conceptual tempo and creativity in preschool-age children. Child Development, 46, 779-782.

4 = Lieberman, J.N. (1977). Playfulness: Its relationship to imagination and creativity. Academic Press: London.

5 = Moren, J.D. III., Milgram, R.M., Sawyers, J.K., & Fu, V.R. (1983). Original thinking in preschool children. Child Development, 54, 921-926.

6 = Renzulli, J.S. & Hartman, R.K. (1971). Scale for rating behavioral characteristics of superior students. Exceptional Children, 38(3), 243-248.

7 = Runco, M.A. (1984). Teachers' judgments of creativity and social validation of divergent thinking tests. Perceptual and Motor Skills, 59, 711-717.

8 = Starkweather, E.K. (1971). Creativity research instrument designed for use with preschool children. The Journal of Creative Behavior, 5, 245-255.

Model

COG = cognition (includes fantasy, IQ, curiosity, attention and cognitive style)

CON = contextual (includes curriculum and play)

PER = personality (includes risk taking, conformity, locus of control and temperament)

INSTRUCTIONS: Please read each statement carefully. Watch the child today. Keeping the individual child in mind, check the response which typifies your impression of the child today. Use the comment sections to give examples or reasons that justify your ratings.

(1) Never; (2) Rarely; (3) Sometimes; (4) Frequently; (5)Always

1. Child is willing to take risks, do things differently, try new things. Willing to try the difficult. (1) (2) (3) (4) (5)
Comments

2. Child has an extraordinary sense of humor, sees humor in everyday situations. (1) (2) (3) (4) (5)
Comments

3. Child is imaginative. (1) (2) (3) (4) (5)
Comments

4. Child is questioning, curious wonders how things work. (1) (2) (3) (4) (5)
Comments

5. Child goes along with the group, is passive, a follower. (1) (2) (3) (4) (5)
Comments

6. Child is opinionated, outspoken, willing to talk openly and freely. (1) (2) (3) (4) (5)
Comments

7. Child daydreams, seems to be in a world of his or her own. (1) (2) (3) (4) (5)
Comments

8. Child is sensitive to others, thoughtful. (1) (2) (3) (4) (5)
Comments

9. Child is a nonconformist, does things his or her own way. (1) (2) (3) (4) (5)
Comments

10. Child is self-sufficient, able to occupy and entertain self, content to play or work alone. (1) (2) (3) (4) (5)
Comments

11. Child is shy, needs prompts to get involved with groups and group activities. (1) (2) (3) (4) (5)
Comments

12. Child is aware of his or her impulses, able to recognize his or her own inner feelings, not afraid of showing a wide variety of emotions. (1) (2) (3) (4) (5)
Comments

13. Child is uninhibited, has a free-wheeling style. (1) (2) (3) (4) (5)
Comments

General Comments:

INSTRUCTIONS: Please read each statement carefully. Watch the child today. Keeping the individual child in mind, check the response which typifies your impression of the child today. Use the comment sections to give examples or reasons that justify your ratings.

(1) Never; (2) Rarely; (3) Sometimes; (4) Frequently; (5) Always

1. Child is verbally expressive, e.g., makes up funny words. (1) (2) (3) (4) (5)
Comments_____

2. Child is interested in many things, is curious, questioning. (1) (2) (3) (4) (5)
Comments_____

3. Child is self-directed, self-motivated. (1) (2) (3) (4) (5)
Comments_____

4. Child is able to make activities uniquely his or her own, "personalizes" what he or she does. (1) (2) (3) (4) (5)
Comments_____

5. Child is easily diverted from tasks, has a short attention span. (1) (2) (3) (4) (5)
Comments_____

6. Child comes up with many solutions to a problem. (1) (2) (3) (4) (5)
Comments_____

7. Child is imaginative, enjoys fantasy. (1) (2) (3) (4) (5)
Comments_____

8. Child engages in deliberate, systematic exploration, develops a plan of action. (1) (2) (3) (4) (5)
Comments_____

9. Child is flexible, able to accommodate to unexpected changes in situations. (1) (2) (3) (4) (5)
Comments_____

General Comments:

INSTRUCTIONS: Please read each statement carefully. Watch the child today. Keeping the individual child in mind, check the response which typifies your impression of the child today. Use the comment sections to give examples or reasons that justify your ratings.

(1) Never; (2) Rarely; (3) Sometimes; (4) Frequently; (5) Always

1. Child is playful. (1) (2) (3) (4) (5)
Comments

2. Child can find diverse uses for ordinary objects, experiments with new ways to use objects, uses objects in ways for which they were not designed. (1) (2) (3) (4) (5)
Comments

3. Child likes to use his or her imagination in play, prefers pretend play. (1) (2) (3) (4) (5)
Comments

4. Child is content to play alone, sometimes lost in own world. (1) (2) (3) (4) (5)
Comments

5. Child is innovative, inventive, resourceful. (1) (2) (3) (4) (5)
Comments

6. The content of the child's stories, drawings, dramatic play is related to things in the environment rather than to imaginary objects, situations, or characters. (1) (2) (3) (4) (5)
Comments

7. Child explores, experiments with objects, e.g. pulls things apart purposefully. (1) (2) (3) (4) (5)
Comments

8. Child transfers toys from area to area, rearranges things, moves things from one place to another. (1) (2) (3) (4) (5)
Comments

9. Child prefers materials that have specific, structured uses, (puzzles, Candyland, etc.) (1) (2) (3) (4) (5)
Comments

10. Child is joyful, spontaneous. (1) (2) (3) (4) (5)
Comments

11. Child chooses many activities, is easily diverted from one activity to another. (1) (2) (3) (4) (5)
Comments

12. Child is aware of surroundings, is observant, likely to use the classroom environment as a source of ideas. (1) (2) (3) (4) (5)
Comments

General Comments:

Checklist

Please read over the following lists of adjectives. Keeping the individual child in mind, circle the adjective(s) that best describe him or her.

Self-directed

Curious

Conforming

Original

Artistic

Inflexible

Intelligent

Interested in many things

Exploratory

Insensitive

Unique

Innovative

Flexible

Unoriginal

Imaginative

Always questioning

Nonconforming

Challenging

Uninhibited

Independent

Sensitive

Expressive

Inventive

Good at designing things

Creative

APPENDIX F

SURVEY AND SURVEY LETTERS

Creativity in Young Children Survey

What grade do you teach (if you teach)? _____.

When completing this survey, please keep the creative young child in mind.

I. PERSONALITY (What do you observe about the creative young child's personality? ...)

II. COGNITION (What do you observe about the creative young child's style of learning? Ways of processing information? Attention? Language? ...)

III. PLAY (What do you observe about the creative young child's play? ...)

IV. ENVIRONMENT (What do you observe about the ways that the creative young child interacts with, uses or reacts to the environment? The classroom environment? What are the environmental needs of the creative child? ...)

Please return to: Kay Bennett
115 Jessie Harris Bldg.
College of Human Ecology
University of Tennessee, Knoxville

THE UNIVERSITY OF TENNESSEE
KNOXVILLE

College of
Human Ecology

Department of
Child and
Family Studies

September 30, 1987

Dear Fellow Creative Thinker,

I am a graduate student in Child and Family Studies and am working on my Master's thesis. This summer, we shared Dr. Tom Turner's course Creativity in Elementary Education. Dr. Turner suggested, that as a member of that course, you might be willing to share your expertise on creative young children in helping me to develop a social validation of creativity.

My Master's thesis involves the development of a checklist that is to be administered by teachers in conjunction with the administration of a standardized measurement of preschool creativity. This checklist will provide a more complete profile of the creative preschooler while also providing a means for teachers to identify creativity in their classrooms. In order to develop the checklist, I am soliciting your expert opinions concerning the various aspects of the creative preschooler.

Enclosed, you will find a survey that asks for your description of the different aspects of the creative young child. Your description may be in the form of synonyms or short phrases.

Your cooperation and speed in completing this survey are greatly appreciated. If you have any questions, please feel free to call me at 522-1741, before 11:00 pm.

Sincerely,

Kay Bennett

Kay Bennett

1215 West Cumberland Avenue, Room 115 / Knoxville, Tennessee, 37996-1900 / (615) 974-5316

October, 15, 1987

Dear Fellow Creative Thinker,
How do you get people to answer surveys?

[] Appeal to their senses of kinship in the endeavor to understand the creative process.
[] Send a divergent follow-up letter.
[] Print the letter on wild-colored paper.
[] Beg and plead.

Seriously, your input is highly valued and necessary for my research. Thank you for your time and assistance.

Sincerely,

Kay Bennett

APPENDIX G

INTERCORRELATIONS FOR RATING FORMS

Intercorrelations for Rating Form A

	Items											
	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13
A1	.57****	.35***	.42****	.42****	.50****	-.12	-.16	.50****	.13	.52****	.05	.62****
A2		.49****	.36***	.18*	.51****	-.11	-.02	.31**	.07	.36***	.32***	.50****
A3			.29**	.21*	.31**	.05	.01	.28**	.15	.18*	.16	.56****
A4				.31**	.64****	-.01	.19*	.36***	.32***	.37***	.38***	.44****
A5					.67****	-.07	-.24	.52****	.20*	.48****	.18*	.61****
A6						.05	-.09	.60****	.31***	.39***	.35***	.73****
A7							-.10	.00	-.05	-.35***	-.19*	.03
A8								-.36***	.04	-.01	.23*	-.08
A9									.37***	.35***	.15	.54****
A10										.10	-.03	.15
A11											.14	.51****
A12												.31***

Note.* $p \leq .1$
** $p \leq .05$
*** $p \leq .01$
**** $p \leq .001$

Intercorrelations for Rating Form B

	Item							
	B2	B3	B4	B5	B6	B7	B8	B9
B1	.52****	.23	.31**	.04	.10	.57****	.43****	.23
B2		.40***	.49****	.13	.48****	.46****	.67****	.23**
B3			.57****	.47****	.60****	.40***	.55****	.39***
B4				.46****	.43****	.37***	.69****	.16
B5					.38***	.15	.39***	.38***
B6						.11	.62****	.42****
B7							.43****	-.01
B8								.27**

Note. * $p \leq .1$
** $p \leq .05$
*** $p \leq .01$
**** $p \leq .001$

Intercorrelations for Rating Form C

	Item										
	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
C1	.14	.20	-.13	.18*	.28**	.13	.14	.04	.55****	-.10	.16
C2		.41***	-.24**	.27**	-.45****	.45****	.21*	.24**	.19*	.14	.21*
C3			-.08	.35**	-.06	.09	.34**	.19*	.18*	-.05	.29**
C4				-.20*	-.01	.13	.24**	-.17	-.17	-.50****	-.32**
C5					-.07	.21*	-.20*	.02	.41**	.53****	.53****
C6						-.36**	.05	-.36**	.16	-.18	.06
C7							.21*	.12	.08	-.05	-.01
C8								.21*	-.04	-.58****	-.24**
C9									.01	.07	-.26**
C10										.15	.28**
C11											.44****

Note. * $p \leq .1$
** $p \leq .05$
*** $p \leq .01$
**** $p \leq .001$

VITA

Elizabeth Kay Bennett was born in Cornwall, Ontario, Canada, on January 15, 1961. She attended elementary schools in Richmond, Virginia, Durham, North Carolina, and Knoxville, Tennessee and was graduated from The Webb School of Knoxville in June of 1979. In December of 1983, she received a Bachelor of Arts degree in Psychology from The University of Tennessee, Knoxville.

She accepted a graduate assistantship in the Child Development Laboratories of the Department of Child and Family Studies at The University of Tennessee, Knoxville, in September 1986. A Master's degreein Child and Famy Studies was awarded in December 1988.

The author is a member of Psi Chi, Omicon Nu, Knox Area Association of Young Children, and Southwestern Society for Research in Human Development.