THE EFFECTS OF TEACHERS' PLAYFULNESS AND CREATIVITY ON TEACHER-CHILD INTERACTIONS

by

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(ABSTRACT)

This study was conducted to examine the relationships among teachers' playfulness scores and creativity scores and their styles of interaction with children in a play environment. The Play Interaction Scale, the Multidimensional Stimulus Fluency Measure (MSFM), and the Adult Behavior Inventory were administered to 46 students (future teachers) and 37 teachers of three- and four-year-old children in group settings. The Play Interaction Scale, developed for this study, was based on the five environmental components identified by Rubin, Fein, and Vandenberg (1983) as facilitative of play. The instrument was comprised of 20 play vignettes. Subjects indicated the frequency with which they might respond in a structured, elaborative, or unstructured manner to each vignette. The subjects' creativity was measured by using the MSFM and playfulness was determined by each subject evaluating themselves on the Adult Behavior Inventory.

Pearson product-moment correlations were computed for the teacher group and the student group. The expected relationships between creativity, and playfulness, and an elaborative teaching style were found for the student group. However, the elaborative style
of interaction and ideational fluency were not significantly related in either group. The predicted negative correlation between creativity and a structured interaction style was found only for teachers.
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CHAPTER 1

Introduction

Rubin, Fein, and Vandenberg (1983) have stated that "play is a behavioral disposition that occurs in describable and reproduceable contexts and is manifest in a variety of observable behaviors" (p. 698). This definition involved three dimensions: (1) the disposition, feeling or motivation of the person; (2) the environment in which play occurs; and (3) the types of behaviors which are involved. Rubin and his colleagues (1983) identified five components of the environment which have been demonstrated to facilitate play behaviors. They were:

(1) an array of familiar peers, toys, or other materials likely to engage children's interest; (2) an agreement between adults and children, expressed in word, gesture, or established by convention, that the children are free to choose from the array whatever they wish to do within whatever limits are required by the setting or the study; (3) adult behavior that is minimally intrusive or directive; (4) a friendly atmosphere designed to make children feel comfortable and safe; and (5) scheduling that reduces the likelihood of the children being tired, hungry, ill, or experiencing other types of bodily stress.

(p. 701)

As can be seen the adult has an involvement in all of these environmental components.
The main focus of this study was on individual differences in adults' ability to provide a facilitative play environment or context. The rationale for the study was drawn from two bodies of research, the role of the adult in fostering play in the classroom environment and the role of the adult in the home environment.

The research findings reported in the play literature indicated not only the essential role of the adult but the influence of individual differences in the adult in their ability and willingness to provide the environment for play. The style of the adult-child play interaction appeared to have either a facilitating or detrimental effect. Adults have been shown to differ in their manner or style of interaction. The key component of style appeared to be the amount of structure or directiveness of the interaction on the part of the adult. Adult involvement has been characterized as a continuum ranging from uninvolvment to directiveness. The medium range representing an optimal level of involvement has been associated with sensitive, responsive, and playful interactions.

Extrapolating from the literature on child's play two factors which would appear to contribute to individual differences in the adult's play interaction styles with children were ideational fluency and playfulness. The purpose of this study was to investigate teachers' playfulness and creativity as related to their responses to a measure of style of interaction with children in a play environment.
The adult or teacher's role in providing the environment for play has been recognized by many researchers. From studying the early home environment A. W. Gottfried (1985) concluded that the two most influential factors in cognitive development were the provision of play materials and parental involvement. Sutton-Smith (1979) emphasized that stimulation, modeling, and protection by adults were the most important prerequisites for play. Further, Rubin, Fein, and Vandenberg (1983) described three general components of play: dispositions, observable behaviors, and the context or environment. The inclusion of the environment in the definition of play indicated the facilitating or inhibiting impact it could have on play behaviors. Thus the environment has become recognized as an important aspect of play.

The supportive environment for play has been described as: (1) an array of familiar peers, toys, or other materials likely to engage children's interest; (2) an agreement between adults and children, expressed in word, gesture, or established by convention, that the children are free to choose from the array whatever they wish to do within whatever limits are required by the setting or the study; (3) adult behavior that is minimally intrusive or directive; (4) a friendly atmosphere designed to make children feel comfortable and safe; and (5) scheduling that reduces the
likelihood of the children being tired, hungry, ill, or experiencing other types of bodily stress. (Rubin, et al., 1983, p. 701)

As can be seen the adult is involved in all of these environmental components. The parent or teacher decides which materials and toys will be available for the children to choose, the experiences provided, and what limits will be necessary in the setting. In addition, the adult is involved in communicating the limits, choices, and the amount of structure and directions given to the children. The teacher is also influential in determining whether the environment is friendly, safe, and comfortable through actions, activities planned, and appearance of self as well as the room. Finally, the adult is responsible for the scheduling or planning of activities in a way that will enhance development and reduce bodily stress. Given the obvious importance of adults this study focused on the teacher in the play environment.

**Play Interaction Styles of Adults**

**Parent/child interactions.** In the home environment parent-child interactions have been investigated to determine their effects on children's play behaviors and development. Based on data from five longitudinal studies of the early home environment, A. W. Gottfried (1985) concluded that parental involvement and the provision of play materials were the two most important influences on cognitive development in infants and preschoolers.

Fein (1979) identified three play interaction styles of mother's through observation of mother-child interaction. The styles she
identified varied in the degree of elaborativeness with which the mother interacted with the child. The mothers who were elaborative took into account the action-object relationship that the child used. These mothers modified either the child's action or object, but not both. The "imitative" mother simply repeated the child's action with the object. The "unrelated style" mother changed both parts of the play activity--the object and the action. Her actions were not contingent upon the child's behavior. She was intrusive and imposed her actions and an object on the child. In another study, Levenstein (1985) reported that when mothers were demanding of the child's learning the interaction was not playful and the interactions were no longer successful.

Dunn (1985) in her unstructured observations of young children playing at home reported that some mothers were eager to join in their pretend play, some were simply not interested, and others actively discouraged it. She suggested that the parents that discouraged pretend play were worried that it was closely related to lying. Brian Vandenberg (Dunn, 1985) suggested that some parents may have been hesitant to become involved because they viewed themselves as in control and to become involved would have violated their power status. Based on these parent-child studies, similar play styles may be found in teacher-child play interactions.

**Teacher-child interactions.** In the preschool environment the amount of direction from the teacher is influenced by the philosophy or curriculum of the program. Programs tend to range from structured
to unstructured. Generally researchers defined structure as the amount of control the teacher has over activities or the degree to which the program involves adult-directed activities (Huston-Stein, Friedrich-Cofer, & Susman, 1977). Structured programs have been found to focus on convergent learning and encourage constructive, goal-directed, manipulative play whereas programs that provide less structured experiences enhance divergent thinking and encourage dramatic and functional play. In a study of 13 Head Start classes, Huston-Stein et al. (1977) found that children in high structure classes demonstrated less prosocial behavior to peers, less imaginative play, and less aggression than children in low structure classes.

In a review of the research on curriculum effects on preschooler's play, Johnson and Ershler (1982) suggested that structured programs may decrease opportunities for peer interaction whereas less structured programs provide for social play. Thus the less structured programs, which emphasize a minimum of teacher direction, appeared to enhance the development of important social skills.

Several researchers have raised the question of whether the reported findings indicating the benefits of play on problem-solving result from the opportunity to play or from the involvement of an adult (Rubin, 1980; Smith, 1977; Smith & Sydall, 1978). In a review of the play training literature, Smith and Sydall (1978) indicated that only a few studies have attempted to control for the amount of adult interaction and of these studies the results are varied. As a result Smith and Sydall (1978) concluded that both the quality and quantity of adult interaction during tutoring may have been the
reason for varied improvements on competency tasks, rather than the opportunity to play.

Smith and Sydall (1978) conducted detailed observations of play tutoring and non-play tutoring conditions with 14 children, ages three and four. During a five week period each child attended 15 sessions which involved supervised free-play experiences with little adult involvement and 40 minute tutoring periods for play or skills. Themes and props were suggested during the play tutoring periods to initiate and maintain fantasy play. The skills training periods encouraged activities with a definite end product, such as painting, modeling, and learning numbers or colors. Pre and post observations were used to record each child's level of spontaneous play and social participation. Competencies were assessed by a pre and post verbal comprehension and expressive language test, a basic concepts test, the Goodenough-Harris "Draw-A-Man" test, the "Dog and Bone" test of creativity, and two role-taking preference tests. The results of this study suggested that play tutoring facilitated performance in activities closely related to play, such as fantasy activities, but that adult attention, not the play tutoring was responsible for the improvements noted.

Evidence from another study, indicated that adult directiveness may interact with the structure of materials in influencing children's behavior (Moran, Sawyers, & Moore, 1982). In this study children were assigned to one of four conditions: structured instructions with either structured or unstructured materials and unstructured instructions with either structured or unstructured materials. In
a second session the materials were reversed with the instructions remaining constant. The materials used were a set of legos in which the structured set differed only in the addition of a set of wheels. The same adult was present in all sessions, but demonstrated how to build either an airplane or a truck and asked the child to build the same object in the structured instructions session. The structured instructions when combined with the structured materials appeared to limit the child's ideational fluency or generation of ideas.

**Individual Differences in Adults**

Betty Caldwell (1985) described children's play as fun and something that you do not have to do too well. She explained that play changes as we develop into adults. Typically adult play is not spontaneous, is deadly serious, is not flexible and has many rules, is very literal with no fantasy, has to be done well, and usually it is not fun. The differences between child and adult play characteristics are the basis for the "play paradox" that Caldwell described in adults who no longer play but who are teaching children how to play. She explained that child's play is quite different from adult's play because adults are so used to playing by rules that they encourage play in a convergent way. They should also teach children to play divergently (Caldwell, 1985).

Two factors which would appear to contribute to individual differences in the adult's play interaction styles with children are ideational fluency and playfulness. Since studies of play or
playfulness in adults are limited it is necessary to extrapolate expected relationships among playfulness, ideational fluency and styles of interaction from the literature with children.

Ideational fluency. Many theorists have cited ideational fluency as an essential component in the process of creative or original problem solving (Guilford, 1956, 1967; Mednick, 1962; Wallach & Kogan, 1965). Ideational fluency has been the most commonly used single predictor of divergent thinking or creativity. Play has been linked both theoretically and empirically to creativity. Play has been thought to contribute to ideational fluency by providing the child with a large repertoire of experiences from which he/she may generate ideas. Although the relationship between play and creativity has not been examined in the adult, it seemed likely that it would exist.

It appears that the adult also plays a role in fostering divergent thinking as well as play behaviors. Findings from one study indicated that young children's ability to think divergently can be increased significantly through repeated exposure to divergent thinking situations posed by teachers. Cliatt, Shaw, and Sherwood (1980) studied the effects of training teachers to use divergent questioning techniques on the divergent thinking abilities of kindergarten children. In their study children were randomly assigned to two classrooms. The teachers of one classroom received special training in asking questions that promoted divergent thinking and teachers of the second group were instructed to ask the children questions but were not trained as to the types of questions to ask. A pretest of
the Torrance Test of Creative Thinking indicated that the two groups of children were homogeneous. After eight weeks the post test indicated that the children exposed to divergent thinking questioning by their teachers showed significantly more growth in divergent thinking ability than the children in the other group.

**Playfulness.** In a review of the play literature, six dispositional factors that characterize play have been identified. They were: (1) play is intrinsically motivated; (2) play is focused on the means not the ends; (3) play is dominated by the player rather than the stimulus; (4) play often involves pretense; (5) play is free from externally imposed rules; and (6) the player is actively involved, not passive (Rubin, et al., 1983). Although these dispositions were used to describe play behaviors in young children, it appears that they may be carried over into adulthood. In adults they have been conceptualized as flow characteristics (Csikszentmihalyi, 1975a; 1975b; 1979). According to Csikszentmihalyi, flow is likely to occur when the level of skills match the challenges of an activity. Six characteristics of flow have been identified. They were: (1) the merging of action and awareness, (2) the centering of attention on a limited stimulus, (3) the loss of ego, (4) the control of action and environment, (5) the presence of clear, unambiguous feedback, and (6) the autotelic nature of the activity (Csikszentmihayli, 1975a, 1975b, 1979). Behaviors of adults and children are different, but the dispositions represented in play and flow appear to overlap. Some concepts present in both flow and play are intrinsic motivation, learning as an end in itself, individual control of the situation,
attention centered on the activity rather than the outcome, and active involvement.

Based on studies of kindergartners, high school students, and adult teachers, Lieberman (1977) speculated that playfulness becomes a part of an individual's personality and is an essential ingredient in creative thought. She suggested that playfulness is made up of physical, social, and cognitive spontaneity; manifest joy; and sense of humor.

Several studies have linked playfulness and/or the predisposition to engage in symbolic play to high levels of ideational fluency in children. Researchers from Virginia Tech have investigated this relationship in preschoolers with results of mixed findings (Davis, 1983; Goodwin, 1984; Moran, Sawyers, & Fu, 1985; Moran, Sawyers, Fu, & Milgram, 1984; Sawyers, 1986; Sawyers & Horm-Wingerd, 1986; Spector, 1984). Moran and colleagues (1985) were unable to replicate findings from an earlier study (Moran, Sawyers, Fu, & Milgram, 1984) showing a significant relationship between ideational fluency and observations of childrens naturally occurring symbolic play. Results from recent studies (Sawyers, 1986; Sawyers & Horm-Wingerd, 1986) indicated that the playfulness trait may be assessed more adequately through a rating scale.

Such a scale was recently developed by Rogers and Moore (1985) to assess playfulness in children. The Child Behavior Inventory (CBI) was formed by asking 16 scholars in the area of play to identify items which they believed represented the six dispositional
characteristics of play identified by Rubin, Fein, & Vandenberg (1983) and would therefore assess playfulness. Based on their responses a scale was formed and sent to 16 other scholars in the area of play. These scholars were asked to rate the appropriateness of each item in regard to the criteria it was intended to measure. Content validity ratings were tabulated and items which received a mean rating of two or below were discarded resulting in the 31 item scale.

Summary

Based on the review of the literature, it seems reasonable that for adults to provide the necessary environment for play for young children they must exhibit qualities of play themselves. Betty Caldwell (1985) reminded us of the play paradox in the adult-child interaction process. She stated "we're talking about having adults, who don't know how to play, teach children, who know quite well, how to play" (p. 169). Therefore it appears that in order for an adult to provide a facilitating environment for play they must possess the qualities of playfulness and divergent thinking. The purpose of this study was to investigate teachers' playfulness and creativity as related to their responses to a measure of teaching style.

Hypotheses

1) It was expected that subjects that scored high on the Adult Behavior Inventory would score high on divergent thinking as measured by MSFM.

2) It was expected that subjects that scored high on elaborative responses of the Play Interaction Scale would score high on creativity and the Adult Behavior Inventory.
3) It was expected that subjects that scored high on structured responses of the Play Interaction Scale would score low on creativity and the Adult Behavior Inventory.

4) It was expected that subjects that scored high on unstructured responses of the Play Interaction Scale would score low on creativity and the Adult Behavior Inventory.
CHAPTER 3
Methodology

Subjects

The convenient sample of this study was composed of 83 adults from Southwestern Virginia. There were 37 teachers, 20 three- and four-year-old teachers from child care centers and 17 Head Start teachers. The remainder of the sample was students including 18 students enrolled in a child development program at a community college and 28 students enrolled in an undergraduate child development class at a large university.

The demographic variables included were age, years of experience working with children, and years of child development education. The mean age of the student group was 21.30 with the range being from 18- to 40-years-of-age. The teachers' ages ranged from 18 to 52 with the mean age being 29.78. In the student group the mean for the years of experience working with children was 2.28 indicating one to two years of experience while the mean for the teacher group was 3.11 indicating three to six years of experience. Education was indicated by the subjects according to the number of completed years of child development education. The mean for the students' education indicated one or more high school years of child development whereas the teachers' education mean was one to two years of college in a child development program. Education ranged from none to more than four years of college.
Instruments

Ideational fluency. Creativity was measured by the Multidimensional Stimulus Fluency Measure (MSFM) developed by Moran, Sawyers, Fu, and Milgram (1984) (Appendix A). The MSFM was adapted for use with young children from Wallach and Kogan's (1965) original thinking materials. Godwin (1984) demonstrated construct validity for the MSFM and an interscorer reliability of .98 using standard scoring instructions and cumulative scoring protocols. The MSFM consisted of three tasks: alternate uses, instances, and pattern meanings. In the alternate uses task the subject was requested to list all the uses they could think of for a box and a piece of paper whereas in the instances tasks they listed all the things they could think of that were red or round. The pattern meanings task required listing all the things that two 3-dimensional, simple styrofoam shapes could be. In all three tasks the subjects were asked to give as many responses as they could think of. The responses were coded as popular or original. Popular responses were those given by 5% or more of the sample and the original as those given by less than 5% of the sample. Subjects who generated a large number of original ideas were considered creative.

Playfulness. Playfulness was measured by the Adult Behavior Inventory (ABI) (Appendix B). It was adapted for use with adult subjects from the Child Behavior Inventory (CBI) developed by Rogers and Moore (1985a). The CBI statements were changed to be characteristic of an adult subject. The subjects responded to the 31 statements by rating themselves on a continuum of one to four, with one
indicating the statement was very uncharacteristic and four indicating
the statement was very characteristic. The continuum of responses
was changed from five choices on the CBI to four due to the tendency
of subjects to select the middle number noted in previous research
with the instrument (Rogers & Moore, 1985a).

Two playfulness scores were calculated. The first score, overall
playfulness was the response to the item, "Am a playful person."
Based on results of factor analysis on the CBI (Rogers & Moore, 1985b)
the second score, play disposition, was calculated by totaling
responses to items 1, 4, 6, 9, 11, 12, 13, 14, 15, 16, 17, 19, 20,
21, 22, 23, 24, 27, 28, 29, and 30, which were found to load on a
playfulness factor. Items 25, 26, and 31 were taken from Leberman's
(1977) work. They were not based on the dispositions identified by
Rubin, Fein, & Vandenberg (1983) and therefore were not included
in the disposition play score.

Play interaction scale. The Play Interaction Scale (Appendix C)
was modeled after A Test of Skill for Project Interact prepared by
Innes (1985) and the Preactive Decision Exercises or PreDEx developed
by McNergney, Medley, Aylesworth, and Innes (1983). A Test of Skill
(Innes, 1985) was a testing device that measured whether a student
as a future teacher, possessed relevant knowledge and whether he/
she was able to relate that knowledge to problem situations like
those encountered in teaching. PreDEx (McNergney et al., 1983) was
a set of simulated exercises designed to assess teachers' abilities
to make typical planning decisions.
The Play Interaction Scale included four vignettes for each of the five components of the environment which facilitated play behaviors identified by Rubin, Fein, and Vandenberg (1983). Each of the 20 vignettes were followed by three responses or possible courses of action that a teacher might take. The responses were designed to represent the three styles (structured, elaborative, unstructured) identified in the literature.

The structured, intrusive, or convergent responses were ones in which the teacher was very demanding, intrusive, or imposed her activity or idea upon the child. The unstructured, imitative, or passive responses were ones in which the teacher did exactly what the child was doing, used nondirective statements, or did not respond at all. Finally, the minimally intrusive, elaborative, or divergent responses were ones in which the teacher interacted by introducing an idea, making a suggestion, or presenting divergent questions.

In developing the instrument six graduate student teaching assistants in a university child development laboratory were asked to classify the vignettes into the five components of the environment identified by Rubin, Fein, and Vandenberg (1983). The vignettes were designed to assess an array of familiar peers, toys or other materials likely to interest children; an agreement between adults and children that the children are free to choose from the array whatever they wish to do; adult behavior that is minimally intrusive; a friendly atmosphere designed to make children feel comfortable and safe; or scheduling that reduces the likelihood of the children
being tired, hungry, or ill. In addition they were asked to code the responses using a continuum describing the three styles of instructions. On the basis of their responses several vignettes and responses were rewritten or eliminated from the instrument. The resulting instrument was piloted in an undergraduate child development/early childhood course. As a result, points on the frequency continuum were changed from always, frequently, seldom, and never to almost always, frequently, seldom, and almost never.

The 20 vignettes to which the subjects responded were presented on 35mm slides and simultaneously on a cassette tape. The slides were projected on a screen from a carousel projector, synchronized with the cassette player. Each slide presented an open ended play vignette in the form of a verbal description typical of a situation which a teacher might encounter. The vignette remained visible while the three possible courses of action were presented on tape only. They were presented one at a time, at intervals of four seconds. The subjects were given a short response time to replicate typical classroom situations in which they must make decisions and/or respond quickly.

The subjects rated each response as to how frequently they would respond in that way (almost always, frequently, seldom, or almost never). For the purpose of this study, two procedures were used to score the Play Interaction Scale. In the first a separate score was determined for the structured, elaborative, and unstructured responses. A score of four was given for "almost always" responses, a score of three for "frequent" responses, a score of two for "seldom"
responses and a score of one for "almost never" responses. The theoretical range for each style was 20-80. A sum was calculated for the items in each of the three types of play interaction responses (structured, elaborative, and unstructured).

The second procedure involved calculating agreement scores comprised of almost always and frequent responses for structured, unstructured, and elaborative responses. The agreement score was the total of almost always and frequent choices for each style (structured, unstructured, and elaborative). Thus the theoretical range for each style was from 0 to 20.

Procedure

The instruments were group administered in one session to the convenient sample (Appendix D). The size of the groups varied from 3 to 28 people. The order of tasks was the same for all groups and was as follows: Play Interaction Scale, MSFM, and Playfulness (ABI). There were no time limits imposed for the ideational fluency or the Adult Behavior Inventory tasks. However, the student subjects completed the instruments within class periods ranging from 50 to 75 minutes.

Data Analysis

Pearson product-moment correlations were computed by group. These correlations were used to assess the interrelationship among adult playfulness, divergent thinking, and play interaction style.
CHAPTER 4

Results

Means, standard deviations, and ranges for ideational fluency, playfulness, and play interaction scores by group (students, teachers) are shown in Table 1. There was little difference in the means, standard deviations, and ranges of the groups with the exception of the ideational fluency scores. The teachers gave both more popular and original responses than the student group.

Both teacher and student subjects tended to rate themselves as playful people. On a score from one to four, the teacher group mean was 3.11 whereas the students' mean was slightly higher (3.50). The theoretical range of scores on play disposition was from 21 to 84. As shown in Table 1, the scores were skewed toward high playfulness. The mean scores for the teachers, $M = 61.73$, and for the students, $M = 62.83$, differed little.

The Play Interaction Scale consisted of three types of responses (structured, elaborative, and unstructured) in which the teachers chose how often they would respond in that way. As described previously two scores were derived from the responses. The first group of scores reflected weighted frequencies whereas the second group of scores indicated how often the subjects would almost always or frequently respond in a structured, elaborative, or unstructured manner. The theoretical range for the weighted frequency scores was from 20 to 80 and the possible range for the three play interaction agreement scores was from 0 to 20. Teachers and students
Table 1
Means, Standard Deviations, and Ranges for Ideational Fluency, Playfulness, and Play Interaction Scores by Group

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<td>Ideational Fluency Popular</td>
<td>65.38 (24.34)</td>
<td>32-125</td>
<td>56.98 (16.13)</td>
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<td>Ideational Fluency Original</td>
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<td>Ideational Fluency Total</td>
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<td>79.22 (26.00)</td>
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<tr>
<td>Overall Playfulness</td>
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<td>3.50 (.75)</td>
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<tr>
<td>Play Disposition</td>
<td>61.73 (9.27)</td>
<td>39-80</td>
<td>62.83 (8.04)</td>
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<tr>
<td>Structured</td>
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<tr>
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<td>Agreement Elaborative</td>
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<td>17.63 (2.03)</td>
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<td>Agreement Unstructured</td>
<td>6.62 (2.09)</td>
<td>1-11</td>
<td>5.71 (1.96)</td>
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</table>

Note. Standard deviations are given in parentheses.
differed little on the frequency with which they would use structured and elaborative responses whereas teachers were more likely than students to respond in an unstructured manner. As reflected in the mean scores, it appears that teachers and students tended to choose elaborative responses more often than structured or unstructured responses. The ranges of scores on the Play Interaction Scale indicated that subjects' responses were more highly differentiated on the structured responses than on the elaborative and unstructured scores.

Pearson product-moment correlations by group were computed to determine the relationships among ideational fluency scores, playfulness scores, and play interaction style scores. The correlations are shown in Tables 2 and 3.

It was expected that subjects who scored high on the Adult Behavior Inventory would score high on divergent thinking as measured by the MSFM. Although none of the relationships between the ideational fluency scores and the playfulness scores were significant for the teachers the correlation between dispositional play and original ideational fluency ($r = .29, p < .05$) was significant for the student group. Thus, students that scored high on original responses also scored high on dispositional play scores.

It was predicted that subjects who scored high on the elaborative responses of the Play Interaction Scale would score high on the Adult Behavior Inventory. The expected correlations were found only for students. For this group the elaborative weighted frequency score was related to play disposition ($r = .30, p < .04$). None of
Table 2
Correlations Among Ideational Fluency, Playfulness, and Play Interaction for Teachers

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<tr>
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<th>Agreement Structured</th>
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"p < .05
**p < .01
***p < .001
### Table 3
Correlations Among Ideational Fluency, Playfulness, and Play Interaction for Students

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</table>

*p < .05

**p < .05

***p < .001
the other correlations among the playfulness and the elaborative style scores was significant.

It was also expected that subjects' elaborative responses on the Play Interaction Scale would be related to their level of ideational fluency. The predicted relationships were not found for either group.

The third hypothesis predicted a significant negative correlation between structured responses on the Play Interaction Scale and creativity and playfulness. The predicted negative correlations between structured responses and ideational fluency scores were found only for teachers. As shown in Table 2 the relationships were found for both weighted frequency and agreement play interaction scores. The expected negative relationships between the playfulness scores and structured style response scores were not found for either the teachers or students.

The final hypothesis dealt with the relationships between unstructured responses on the Play Interaction Scale and scores on creativity and playfulness. As the correlations reported in Tables 2 and 3 show, the expected negative relationships were not found for either group of subjects.
CHAPTER 5
Discussion and Conclusion

One of the purposes of this study was to examine the hypothesized relationship between creativity and playfulness reported in the literature (Lieberman, 1977). Using an adaptation of the CBI for adult subjects, results found in this study provided partial support. Student subjects who scored high on original ideational fluency rated themselves high on play disposition. Given that the playfulness means for teachers and students were similar and that teachers scored higher than students on all of the ideational fluency scores it is surprising that the relationship was not found for teachers as well. In examining individual subjects' scores on original ideational fluency it was found that three teacher subjects scored 33 to 46 points higher than the other subjects. Further two of these three subjects rated themselves low on play disposition. Thus it appeared that these outlier subjects' scores might explain the lack of significant correlation between playfulness and creativity for teachers. When these extreme scores were eliminated the correlations changed to the predicted positive direction but were not significant.

A second purpose was to explore the relationships between elaborative responses on the Play Interaction Scale and creativity and playfulness scores. The Play Interaction Scale was designed to tap the style of teacher-child interaction in the play environment. Cliatt, Shaw, and Sherwood (1980) found that when teachers promoted divergent thinking in their class the children showed more growth
in divergent thinking ability. The elaborative responses in the Play Interaction Scale were thought to promote divergent thinking, stimulate play, and to minimally intrusive. In this study neither the subjects' weighted frequency elaborative scores nor the elaborative agreement scores were related to ideational fluency scores. As the means in Table 1 reveal, both teachers and students tended to respond high on elaborativeness. The range of scores was thus restricted. This restricted range may explain the failure to find the expected correlation between ideational fluency and an elaborative interaction style. Also, responses to the Play Interaction Scale within a given style varied greatly. For example, not all of the elaborative style responses dealt with promotion of divergent thinking. Therefore it is possible that the failure to find a relationship between elaborative style scores and ideational fluency scores may have been due to the construction of the instrument.

Limited support was found for the predicted relationship between playfulness and an elaborative interactive style. The correlation between dispositional play and the weighted frequency elaborative scores was significant \( p < .05 \) for student subjects only. Students who rated themselves as playful also responded that they frequently interact in an elaborative manner. An obvious explanation for this finding would be that while both students and teachers tended to rate themselves high on elaborativeness, student subjects responded in an elaborative manner more frequently (e.g., weighted frequency scores). However, the mean scores (Table 1) do not support this
explanation as teachers had higher weighted frequency elaborative scores than the students. No other obvious explanation of this finding is apparent.

Another purpose of this study was to examine the relationship between structured interaction styles and creativity and playfulness. The findings of Moran, Sawyers, and Moore (1982) indicated that a structured adult interaction style had a detrimental effect on creativity. As predicted both the weighted frequency structured scores and the agreement structured scores were negatively correlated to all three measures of ideational fluency (popular, original, and total) but for teachers only. The correlations ranged from \( r = .44 \) to \( r = .47 \). Although the correlations for the student group were in the predicted direction, they were not statistically significant. Again no obvious explanation can be drawn from the data. The expected relationships between structured style interaction scores and playfulness scores were not found for either group.

The unstructured style interaction scores were not found to be significantly correlated with either the ideational fluency or the playfulness scores for either group of subjects. For the students the correlations were in the predicted negative direction except for overall playfulness whereas the correlations for the teachers were zero order and positive except for overall playfulness which had a negative correlation.

In sum, this study indicated that students who were more playful were also more creative and they more frequently chose an elaborative interaction style during play. The teachers who
more frequently selected a structured interaction style were less creative or generated fewer ideas on the ideational fluency measures. Due to the variety of responses assessed by the three styles of interaction future studies should include item and factor analysis of the play interaction instrument.
REFERENCES


Skillman, N.J.: Johnson & Johnson.


APPENDIX A

Multidimensional Stimulus Fluency Measures
Subject No.___________________________

Name as many uses for box that you can think of.
Name as many uses for paper that you can think of.
Name all the things you can think of that are red.
Name all the things you can think of that are round.
Subject No. ____________________________

Name all the things you think this could be:
Subject No.____________________

Name all the things you think this could be:
APPENDIX B

Adult Behavior Inventory
Below are statements describing some behaviors. Please rate each item by circling a number on the continuum, with "1" being Very Uncharacteristic and "4" being Very Characteristic as they pertain to you.

1. Always have ideas of things to do.  
2. Use resources in typical rather than unusual ways.  
3. Once a goal is achieved, stop working with the object/material.  
4. Explore different ways to accomplish activities.  
5. Need reinforcement to continue activities.  
6. Invent new activities.  
7. Ask many questions about what to do.  
8. Seek approval frequently.  
9. Use things in my own way.  
10. Look to others to tell me what to do.  
11. Enjoy learning new skills.  
12. Work well on my own.  
13. Enjoy doing things even when there's no purpose.  
14. Have fun doing things without worrying how well they turn out.  
15. Get so involved in an activity that it is hard to quit.  
16. Start activities for my own enjoyment.  
17. Dream a lot.  
18. Use resources only in the way they were designed to be used.  
19. Participate eagerly.  
20. Participate intently.  
21. Invent variations or different ideas.  
22. Display exuberance much of the time.  
23. Rearrange situations to come up with novel ones.  
24. Once I have been shown how to do something, I create my own way.  
25. Have a sense of humor.  
27. Use resources in unusual ways.  
28. Find unusual things to do with common objects.  
29. Identify with many people.  
30. Get so involved in an activity that I forget what is going on in the room.  
31. Am a playful person.
APPENDIX C

Play Interaction Scale
Subject No. ____________________________

Circle either AA for almost always, F for frequently, S for seldom, or AN for almost never.

1. AA F S AN 31. AA F S AN  
2. AA F S AN 32. AA F S AN  
3. AA F S AN 33. AA F S AN  
4. AA F S AN 34. AA F S AN  
5. AA F S AN 35. AA F S AN  
6. AA F S AN 36. AA F S AN  
7. AA F S AN 37. AA F S AN  
8. AA F S AN 38. AA F S AN  
9. AA F S AN 39. AA F S AN  
10. AA F S AN 40. AA F S AN  
11. AA F S AN 41. AA F S AN  
12. AA F S AN 42. AA F S AN  
13. AA F S AN 43. AA F S AN  
14. AA F S AN 44. AA F S AN  
15. AA F S AN 45. AA F S AN  
16. AA F S AN 46. AA F S AN  
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24. AA F S AN 54. AA F S AN  
25. AA F S AN 55. AA F S AN  
26. AA F S AN 56. AA F S AN  
27. AA F S AN 57. AA F S AN  
28. AA F S AN 58. AA F S AN  
29. AA F S AN 59. AA F S AN  
30. AA F S AN 60. AA F S AN
The vignettes tapped one of the five components of the environment which facilitate play behaviors (Rubin, Fein, and Vandenberg, 1983).

Each vignette was coded as follows:

(1) an array of familiar peers, toys, or other materials likely to engage children's interest;

(2) an agreement between adults and children, expressed in word, gesture, or established by convention, that the children are free to choose from the array whatever they wish to do within whatever limits are required by the setting of the study;

(3) adult behavior that is minimally intrusive or directive;

(4) a friendly atmosphere designed to make children feel comfortable and safe;

(5) scheduling that reduces the likelihood of the children being tired, hungry, ill, or experiencing other types of bodily stress.

Each response was designed to be structured, elaborative, or unstructured. They were coded as follows:

(S) structured, intrusive, or convergent responses in which the teacher was very demanding or imposed her activity or idea upon the child;

(E) minimally intrusive, elaborative, or divergent responses in which the teacher interacted by introducing an idea, making a suggestion, or presenting divergent questions;

(US) unstructured, imitative, or passive responses in which the teacher did exactly what the child was doing, used nondirective statements, or did not respond at all.
(1) You notice that the same group of children play in the block area everyday. The play always involves building a "space station."

You might:

(US) 1. Allow the play to continue as is.

(E) 2. Suggest a new idea for building a different structure with the blocks. For example, today the block area is a "transformer factory."

(S) 3. Put the blocks away for several weeks.

(3) You have put out some red and blue play dough for the children. Jonathan squeezes some red and blue dough together.

You might:

(S) 4. Say, "Jonathan we need to keep the red play dough separate from the blue so we can keep it nice."

(US) 5. Allow Jonathan to experiment, making no comment on the mixing of the play dough.

(E) 6. Say, "Jonathan look at the new color of play dough that you got when you mixed the red with the blue."
(5) You notice that Susie often appears to be tired and irritable when she comes to school in the morning.

You might:

(S) 7. Suggest to Susie's mother when she comes to pick her up that she put her to bed earlier so she will not be so tired.

(E) 8. Request a parent conference to discuss what might be triggering this behavior.

(US) 9. Ignore the behavior.

(2) You have put out blocks that are different sizes, shapes, colors, and thicknesses which you want the children to classify or put into groups. One child is using the blocks to make a sandwich.

You might:

(E) 10. Join in the child's play with the blocks, making other pretend things with them.

(S) 11. Redirect the child by showing him how to classify the blocks by color and then ask him to do it the same way.

(US) 12. Ignore the child.
You are conducting a small group activity in which you are asking the children to compare sets of objects determining which set has more. Johnny gives an incorrect response. You might:

(US) 13. Say nothing, assuming he will figure it out later.
(S) 14. Say, "That's not correct. Let me show you, Johnny."
(E) 15. Say, "Show me how you got that answer Johnny."

You are a teacher in a three and four-year-old classroom. Valentine's Day is approaching. You might:

(S) 16. Provide an art center in which children make cards for their parents by tracing hearts.
(US) 17. Plan nothing as holiday activities get the children too excited.
(E) 18. Provide red and white finger paint for children to play with.
(1) You notice that the children in your four-year-old group tend to be destructive with the toys available to them during free play activities.

You might:

(E) 19. Alternate the toys available to them on a daily/weekly basis.

(S) 20. Establish additional rules on how to play appropriately with the toys.

(US) 21. Put out all of the available toys for their use daily.

(2) You are planning a cooking experience for the children.

You might:

(US) 22. Plan the cooking experience as a teacher demonstration for the group.

(E) 23. Plan the cooking activity as a center and let children participate if they like.

(S) 24. Plan the cooking activity as a group activity in which all the children participate.
(4) Cathy brought a favorite storybook from home for show-n-tell. As she was passing it around the circle, Josh ripped a page as he grabbed it from Betty who was taking a long turn. You might:

(E) 25. Comfort Cathy and then offer to help Josh repair the torn page, reasoning with him about the need to handle other's toys carefully.

(S) 26. Comfort Cathy and then punish Josh, telling him he will not get to have his turn at show-n-tell.

(US) 27. Tell the group that if this happens again they will be sorry.

(3) You have a classroom rule of no guns. A couple of the children are using the bristle blocks to make guns. You might:

(US) 28. Ignore them unless their behavior becomes disruptive or unsafe.

(S) 29. Tell the children that they must leave the activity since they are not using the blocks correctly.

(E) 30. Redirect their play by asking them what else their block constructions might be.
(5) Development of good eating habits is a goal of the center. Children are required to clean their plates before they leave the table. Compliance with this rule is often a source of contention between you and the children.

You might:

(S) 31. Continue to enforce the rule.

(US) 32. Do away with the rule. Allow the children to eat whatever they want in whatever amount they like.

(E) 33. Encourage the children to try everything on their plate before they have seconds of their favorite food.

(4) You frequently plan creative movement activities as a part of group time. Joel often says he does not want to participate.

You might:

(E) 34. Encourage Joel to participate but allow him the choice of participating by watching.

(US) 35. Allow Joel to do something else while the rest of the group does the activity.

(S) 36. Require Joel to participate.
(1) You have a goal of teaching the four-year-old children the concept of numbers.

You might:

(E) 37. Encourage the children to construct relationships throughout the day. Say for example, "Bring me enough cups for everybody at your table."

(S) 38. Plan a 10 to 20 minute math period each day in which the children practice writing the number of the week.

(US) 39. Decorate the room with number posters.

(3) Many parents of the three and four-year-old children in your classroom have expressed an interest in their children learning to read and write.

You might:

(S) 40. Provide dittos of letters for children to trace and color.

(E) 41. Set up a drug store in dramatic play and let children read and write "pretend" prescriptions.

(US) 42. Ignore the request, since you believe reading and writing are not developmentally appropriate activities for this age group.
Your daily schedule includes free play or interest center activities. You might:

(E) 43. Plan the centers so the children can choose what they would like to participate in and to move freely from center to center.

(US) 44. Allow the children to play with any of the toys that are always available.

(S) 45. Plan the centers so that the children rotate every 10 minutes to ensure they take advantage of all the activities.

During warm weather you move as many of your activities outside as possible. Many of the children protest going outside and think of many reasons to return inside like going to the bathroom or getting a drink. This makes supervision difficult. You might:

(US) 46. Dismiss the protests, assuming this is just a phase the children are going through.

(S) 47. Establish a rule that everyone gets drinks and uses the bathroom before they go outside.

(E) 48. Move the activities inside during the hottest times of the day.
Children are playing in the water table. All of the boats are taken by other children. Josh comes to you and says, "The other children won't let me play."

You might:

(E) 49. Suggest to Josh that he ask Tommy to share one of the two boats that he has.

(S) 50. Gather up all the boats explaining that until the children learn how to share they won't be allowed to play with the boats.

(US) 51. Tell Josh he needs to solve the problem himself.

Brad, Joey, and Allan, a group of four-year-old boys, always play together.

You might:

(S) 52. Separate the boys by assigning them to particular activities.

(US) 53. Allow the boys to continue to play together.

(E) 54. Encourage but do not insist that they include others in their play.
The daily 30 minute group time in which the four-year-old children pick helpers, discuss the calendar and weather chart, and sing the greeting song has become difficult to control. You might:

(E) 55. Alter the content of the group time frequently to include different activities like creative movement.

(S) 56. Alter the schedule to include more group times since they will need group time skills like listening and sitting quietly in kindergarten.

(US) 57. Ignore the disruptive children.

As a three and four-year-old teacher, you want to promote acceptable behavior. A child hits another child. You might:

(US) 58. Ignore the incident.

(E) 59. Put the child who hit in time out, telling him/her that he/she may return to the group when he/she can follow the rules.

(S) 60. Insist that the child who hit say, "I'm sorry." to the victim.
APPENDIX D

Directions for Administering the
Play Interaction Scale,
Multidimensional Stimulus Fluency Measure, and
Adult Behavior Inventory
Examiner's Instructions

Please complete the cover page to your response packet. Make sure your subject number is on every page.

Today we will be completing an exercise involving three parts, which are play vignettes, problem-solving tasks, and a behavior inventory. In the first part, the play vignettes, there will be a time limit to complete the exercise. The other two parts you may take as much time as you want. I will explain directions for completing the vignettes, then you will indicate your responses on the 3rd page in your response packet in the time allotted. I will give directions for the next two parts, the problem-solving tasks and the behavior inventory. You will write your responses on the corresponding pages in the response packet.

Play Vignette Instructions

Twenty vignettes will be projected on the screen from 35mm slides, one at a time. Each slide presents an open ended play vignette, a verbal description of a play situation in which you may encounter as a teacher. The vignette will be read aloud on the cassette tape at the same time. The vignette will remain visible while possible courses of action are presented on the tape only. The choices will not be repeated. There is a four second interval after each response is read for you to rate it as to how frequent you would respond in that way. Circle either AA for almost always, F for frequently, S for seldom, or AN for almost never. Circle only one choice. Because in real situations teachers must often
make decisions and respond quickly, this exercise give you little
time or information. Do not let this disturb you, these are the
conditions under which teachers work. Choose the responses that
best describes how frequently you would respond in that manner.

Do you have any questions?

This first one is a practice example. Do not write anything
for this, just listen.

Start the tape and slide.

Example

As Bethany looks at the book The Three Little Pigs, she tells the
story by saying the wolf ate the three pigs.

You might:

(US) 1. Listen to Bethany complete the story and say,
    "That's interesting."

(E) 2. Ask what are some other ways the story could have
    have ended.

(S) 3. Say, "Bethany the pigs really ate the wolf."

Stop the tape.

Does everyone have a pencil, a response packet, and is sitting so
you can see the screen and hear the tape?

Do you have any questions?

I will begin the tape.
Stop the tape and turn off the slide projector. Please stop writing and put your pencil down. Do not go back and change any of your responses. The next two parts you may complete at your own rate. I will now give you directions for both parts.

**Multidimensional Stimulus Fluency Measures**

These are some fairly commonly used problem-solving tasks. For the next two items I want you to write down on your corresponding answer sheet all the uses for box and paper that you can think of. When you finish these tasks you may move right on to the next set of problems in which you name all the things you can think of that are red and round. In the final set of problems, you will name all the things you can think of that this pattern could be (hold up the patterns) and then this one. You may turn the patterns in all ways. Be sure to use the corresponding answer sheet.

Remember you may take as long as you like. There are no right or wrong answers. Feel free to use the back of your answer sheets if you need additional space as we are interested in as many things as you can think of. When you finish you may continue to the final page of your packet.

**Adult Behavior Inventory**

There are 31 statements on the last page. Please read each statement and circle the corresponding number on the continuum, with "1" being Very Uncharacteristic and "4" being Very Characteristic, as the statements pertain to you.
Do you have any questions?

When you have completed all exercises please turn in your response packet and pencil. Thank you.
APPENDIX E

Cover Sheet for Teacher's Response Packet
Virginia Polytechnic Institute
and State University

Teacher's Response Packet

Date__________________________ Subject No._____________________

Birthdate________________________________________________________

Month      Day      Year

Years of experience working with young children.

Circle one:

None           7-25 years
1-2 years      25+ years
3-6 years

Child Development Education. Circle one:

0 years
1 or more years (high school only)
1-2 years (post secondary or CDA)
3-4 years (post secondary or CDA)
More than 4 years (post secondary or CDA)
APPENDIX F

Letter of Consent
We are conducting a research project investigating teacher's support of children's play. Three measures will be group administered in which you will respond in writing. All the information collected will be confidential. A summary of the results of the project may be obtained by contacting Dr. Janet Sawyers, FCD Department, Wallace Hall, VPI & SU, after May, 1987.

I acknowledge that I have been informed of the nature of the investigation and agree to participate in the study.

_________________________________________  ____________________________
(name)                                      (date)
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