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**A comparison of teacher-child play interactions in mentally
retarded and nondisabled groups**

Schwartzman, Jason Isaac, Ph.D.

City University of New York, 1988

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**300 N. Zeeb Rd.
Ann Arbor, MI 48106**

A COMPARISON OF TEACHER-CHILD PLAY INTERACTIONS
IN MENTALLY RETARDED AND NONDISABLED GROUPS

by

JASON ISAAC SCHWARTZMAN

A dissertation submitted to the Graduate
Faculty in Psychology in partial fulfillment of
the requirements for the degree of Doctor of
Philosophy, The City University of New York.

1988

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This manuscript has been read and accepted for the Graduate Faculty in Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

7/29/1958
Date

Roger A. Hart
Chair of Examining Committee

September 24, 1958
Date

Robert D. Silfky
Executive Officer

Dr. Roger Hart

Dr. John Dore

Dr. Joseph Glick

Dr. Margery Franklyn

Dr. Milt Budoff
Supervisory Committee

The City University of New York

ACKNOWLEDGEMENTS

I used to be scared of flying, but at the end of my first year at CUNY I hopped on a plane and met my brother in Italy. I was to discover the perfect Italian moment: sitting in a Piazza drinking cappuccini and reading the box scores in the Herald Tribune. But this and many other things lay before me. And so starved for sleep and food, and in search for both, we raced through the small streets breaking every traffic ordinance. I look at Paul, cigarette dangling, Mastriani growth on his face, shades perched, waving his hands about, we are giggling as the gears grind and the wind whips by and we shout at the top of our lungs, "Ahhh Rrrroma."

Sandwiched between beginnings and endings is the work. Education is a retooling of the mind. I used to walk around with a sense of how things worked, only to have such visions stripped and laid bare. For this I have mixed feelings. My mind has been ravaged. Being hooded is preceded by much poking and probing. It is to do the slow strip tease. Dissertation writing is a heavy leather experience.

Making this experience more pleasurable has been the companionship and support of a number of people.

I would like to thank my family for not bugging me too much about What and When, and my grandmother for picking up the slack by constantly asking me When. I point to my dog and say Soon.

The members of the Children's Environments Research Group provided the context and support for this work. We shared many a hot summer day at a playground in Queens, making special trips to the Corona Ice King

for relief. Lincoln Walters, and his staff of John, Bo and Max provided the technical support that was heaven sent. Judy Malone's steady hand and dedicated assistance in collecting the data was invaluable. The Hasbro Bradley Children's Foundation provided the financial support that enabled me to devote my attention to my research. Laurie Dien was always reliable, a debt I hope to be able to repay. And besides, it will give us an excuse to gossip and giggle.

And to she who forever wondered what she could do, let me put it this way: Nancy Jane was always.

The Developmental Psychology faculty and students create an environment that is challenging and enduring. I would particularly like to thank Harry Bellin for the manner in which he advised me during the initial part of my training. He gave me the freedom to explore which I carry with me still. His direct manner was a quality I found beneficial to elicit; he is fun to argue with and fun to joke with.

Most painful is the leaving of my officemates and close friends, David Kritt and Marianne Arleux. We do have the best office in the department. Amidst the plastic mermaids and constant innuendos the Bransford and Franks Research Group was born. Marianne's knowledge of the roots of psychology and its interdisciplinary nature, and the breadth of David's understanding of the field provided me with the nuts and bolts of my training. While we shall remain as we were, I will strangely miss idling through a long afternoon of high tension. The soul of my experience rests with them.

I would like to thank my dissertation committee as a group. Their strengths blended and gave me footing. Margery Franklyn and Milt

Budoff have been gracious. To the core of the committee I say this:

There are certain ideas that seem to mesh with everything you have ever learned. Those are the ideas I found where ever I used to go. Then I met John Dore. I do not think I fully grasp how profoundly he changed my understanding of people in and out of psychology.

There is a man who rides in a helicopter, and sweeps down on remote places, brings some meaning to what lives there, and then disappears over a hilltop. I used to visit Joe Glick in his home and sit by his Golden Gate speakers. Amidst the scream of some far off siren, slouching lower and lower into his couch, I would freely unravel everything I had seen or heard while collecting data. Joe makes things coherent.

During a time when the world was closing in, I visited Queens for the first time in my life. I am sitting eating very good Italian food, maybe a bit too acidic, and there is Chuck Mangione playing the trumpet for those few patrons left. Falling asleep to the peaceful roar of the #7 train, I wondered why I felt so free. Roger is contagious. Without his constant support and confidence in me, without his friendship, I would not have been able to make it to this point, nor would I have been interested in going beyond.

Through all this are countless nights lying in a darkened room, staring at the ceiling. The curtains waver, and the air accelerates through my mind, exposing me to the elements: fear and hope. To be anywhere but where I am.

And Laura tells me stories about a childhood in Ohio. Of husbands armed with World War II binoculars, hands steadied by back yard

fences, ogling at the Marilyn Monroe look alike sunbathing in the distance. The French Canadian cousin who always said, "Merci." The Italian wife who decorated the living room with Renaissance art, filled the house with opera, and mixed wine with water for her children. The neighbor, dressed in waist high waders, who went fishing every day. The tragedy of the dog who leaped over a fence, only to hang by the chain he was tethered to. The stories fill my mind, and as I drift off to sleep, a smile comes, fueled by a rush of feeling that soars from my lips, "Ahhhh Laura." To you I am dedicated.

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CHAPTER I

REVIEW OF LITERATURE

Introduction

Developmental theories offer two possible, often complementary, metaphors for understanding children's play. The first considers play to be the child's domain; the child determines his interests, pursues a line of action, and explores the world. While adults may provide the settings and objects that the child investigates, it is the child who is the architect and constructor of his play. The second metaphor does not necessarily conflict with the first, but implicates the adult world more directly in the child's play. Rather than being the chief architect, the child is initially considered to be the apprentice who learns about the possibilities of play through his participation in it with adults or more knowledgeable peers. The child becomes the chief architect after a period of learning has occurred.

The play of mentally retarded children has been the target of research by developmental psychologists working within both metaphorical views. Within the child-as-chief-architect framework, a number of studies have investigated the solitary activities of mentally retarded children, and have documented differences in the development of their play as compared to similarly aged nondisabled children. Varying rates of development are subsequently related to the different capacities that the child-as-architect brings to the play. Within the child-as-apprentice view, studies have focused on the role of the

adult, usually a parent, who interacts with the mentally retarded child as compared to the nondisabled child. These studies have investigated whether the process of apprenticeship differs for the two groups. The central goal of these studies is to determine ways in which the adult may hinder or foster the child's further development.

However, interest in teachers (as opposed to other caretakers) and their role in the play activities of mentally retarded children has not been the topic of research. The lack of research in this area is somewhat surprising given that educational settings have often served as the site of data collection. Since teachers have been found to effect the kinds of play activities in which nondisabled children engage, it is expected that teachers of the mentally retarded would be similarly implicated.

The focus on teachers is also justified by Vygotsky's theory of development (1962; 1978). Arguing that development is inherently a social process, inter-individual processes are posited to be related to intra-individual development. The argument that development is a social process has led to a focus on communication as the mechanism for coordinating individuals in their pursuit of common goals. Talk does not only refer to objects in the environment, but also has an instrumental function in terms of planning future events, regulating the flow of interaction, signalling involvement in interaction, and accomplishing stated purposes. One potential influence on the child is found in the teacher's talk. Assuming that a teacher knows more than a child, and can better anticipate immediate future events, she can then make available through her talk the meaning of what is occurring and

how it relates to what is to come. The teacher's talk can thus serve as an organizing device for the child. This inter-individual event, over time, has been posited to be internalized by the child, and contributes to the regulation of his own behavior.

Vygotsky's argument has motivated a line of research that focuses attention on the child as the apprentice who interacts with the more skilled adult. The critical question addressed by this dissertation research study is whether or not teachers treat mentally retarded children and nondisabled children as if they were apprentices with different capacities. How such differences might impact upon the further development of these children is the motivating force driving the study.

Overview of Literature Review

The literature review will indicate that there are a number of potential ways of understanding differences in teacher-child interactions, when the child is either mentally retarded or nondisabled. A number of studies have detailed differences in the play of mentally retarded and nondisabled children, and related these findings to cognitive differences between the two (Copoblanco & Cole, 1960; Crawley & Chan, 1982; Field, Roseman, De Stefano & Koewler, 1982; Guralnick & Groom, 1985; Guralnick & Weinhouse, 1984; Hill & McCune-Nicolich, 1981; Horne & Philleo, 1944; Koolj, 1978; Mindes, 1982; and Tilton & Ottinger, 1964). These studies focus on the abilities of the child-as-architect.

Differences in the capacities that children bring to interactions

could potentially account for differences in the process of apprenticeship. Such an argument has been offered by a number of studies that have compared early mother-mentally retarded child play interactions to early mother-nondisabled child play interactions (Brooks-Gunn & Lewis, 1982; Buckhalt, Rutherford, & Goldberg, 1978; Bulum, Rynders, & Turnure, 1974; Cunningham, Reuler, Blackwell, & Deck, 1981; Gunn, Berry, & Andrews, 1982; Jones, 1976; Kogan, Wimberger, & Bobblitt, 1969; Marshall, Hagerenes, & Goldstein, 1973).

There is also evidence that the adult influences the nature of play interactions. Teacher practices have been found to effect the play activities of nondisabled children (Fagot, 1973; Huston-Stein, Friedrich-Cofer & Susman, 1977; Johnson, Ershler & Bell, 1980; Murphy & Goldner, 1976; and Tizard, Phillips & Plewis, 1976). There are no studies that duplicate these findings in mentally retarded populations. Two studies have focused on the different roles or goals a parent assumes when interacting with mentally retarded children as compared to nondisabled children (Mash, 1984; Stoneman, Brody & Abbott, 1982). To extend the metaphor, these studies suggest that adults may expose children to different kinds of experiences that effect the repertoire of skills the child-as-architect acquires (Harkness and Super, 198).

As Schneider and Gearhart (1988) have suggested, the critical question raised by these studies is whether the adult is helping or hindering the child's further development. If the adult is adapting their input to the abilities of the mentally retarded child, then the child is exposed to developmentally progressive interactions. On the other hand, if the adult is not adapting input to the abilities of the

mentally retarded child, then there is evidence that the adult may be hindering the child's development.

Evidence that adaptation does occur is found in peer interaction research (Guralnick and Paul-Brown 1980, 1984; Milne & Johnson, 1985). In addition, nondisabled peers have been found to have a positive impact on the level of the mentally retarded child's activities (Guralnick, 1981; Field, Roseman, De Stefano, and Koewler, 1981).

The following sections will provide a more detailed account of the research findings that have been briefly sketched. The literature review is organized around ways of examining differences between teacher-mentally retarded child interactions and teacher-nondisabled child interactions. Reported differences are attributable to the different capacities the children bring to the interactions, differences in the capacities of the partner in interaction, or an interaction between the two. In the latter case, the critical question is whether the partner is adapting their input to the child's abilities.

Empirical Studies Comparing the Play of Mentally Retarded and Nondisabled Children

A number of studies have observed the play of mentally retarded children in categories derived from Parten (1932). Given the fact that mentally retarded children have lower IQ scores than similarly aged nondisabled children, does their play exhibit a similar lag? As defined by Parten, these studies have used observational categories of play that include: solitary, parallel, group play, and two non-play categories including unoccupied and onlooker.

Mindes (1982) reports that educable mentally retarded children, with a mean chronological age (CA) of 5.3 engage in more non-play and solitary play, and less parallel and group play than 3- to 5-year-old nondisabled children. The mentally retarded children were observed in either non-play or solitary play activities 65% of the time. These children were observed to be playing in groups 17% of the time. Guralnick and Weinhouse (1984) found in their sample of preschool children, with a mean CA of 4.5, consisting mostly of children with mild or moderate developmental delays, that less than 10% of their observations were of children in group play. In a study of educable and trainable mentally retarded children between the chronological ages of 7- and 12-years, Copobianco and Cole (1960) report differences between the two groups. The educable mentally retarded children, with a mental age ranging from 4.5 to 7 years, were observed to be involved in group play about 34% of the time. The trainable mentally retarded children were observed to be involved in group play about 8% of the time. Normative data on nondisabled children varies in the frequency of group play, but the range is from 25.4% (Barnes, 1971) for 3- and 4-year-olds, to 43% for 5-year-olds (Rubin, Watson & Jambor, 1978).

Crawley and Chan (1982) observed moderately and mildly mentally retarded children during free-play. Both groups consisted of 3-year-old and 5-year-old children. The IQ range of the mildly mentally retarded group ranged between 52 and 67. The IQ range of the moderately retarded group ranged between 20 and 51. This study used a modified Parten observational scheme, making direct comparison to other studies difficult. In addition, for reasons that are unclear, solitary

and parallel play categories were collapsed. The older and mildly mentally retarded group interacted with peers 14% of the time. This frequency is close to that found by Guralnick and Weinhouse (1984), as reported above. In nondisabled groups, Parten reports that with age, solitary and parallel play decreased, while Rubin found that only solitary play decreased with age. Crawley and Chan found that solitary and parallel play increased with age in their sample of mentally retarded children.

A few studies have looked more precisely at the peer interaction of mentally retarded children. The focus was on the initiations and responses of children to one another. Field et al. (1982) compared the play of 3- and 4-year-old children ranging from nondisabled to severely disabled. They found that with increasing developmental age, children became more socially interactive. Guralnick and Weinhouse (1984) found that when interacting with peers, the disabled children were most likely to be involved in brief, initiation-response exchanges. Initiations rarely led to more extended and elaborate exchanges. Similar findings are reported in a separate study by Guralnick and Groom (1985).

A number of studies have compared the play of mentally retarded children and nondisabled children, but did not use Parten's observational categories. One theme running through these studies is the finding that mentally retarded children are less able to structure their environment; hence, their play appears more random. Horne and Philleo (1944) compared 11-year-old mentally retarded children (with a mean IQ of 67, and a mean mental age of 7.5) with 7-year-old

nondisabled children. The mentally retarded children switched the focus of their activities more frequently than the nondisabled children. In addition, the mentally retarded children were found to play with materials which prescribed set activities, while nondisabled children preferred creative materials.

R. van der Kooij (1978) reports on the research of Hetzer (1966, not published in the English language), who found that the play of mentally retarded children lacked a play-plan. In his own research, Kooij found the play of mentally retarded children, between the ages of 7 and 11 years (with an IQ range between 61 and 81) to be dominated by constant movement that prevented sustained progress toward an endpoint. Tilton and Ottinger (1964) compared the toy play of 5-year-old mentally retarded children, with IQ's under 55, to 4-year-old nondisabled children. They found that the mentally retarded children engaged in frequent contacts with toys that lasted for short periods of time. They also found that the mentally retarded children pounded objects, and used fewer toys in combinations than nondisabled children. In a study of 3- and 5-year-old developmentally delayed children, Guralnick and Weinhouse (1984) report that the older and less delayed children were involved in some goal-oriented constructive play, but also spent a great deal of time manipulating objects in a planless manner.

In the Guralnick and Weinhouse (1984) study, in which they observed developmentally delayed children over the course of a year, there was no evidence of pretend play. Mindes (1982), using similarly aged mentally retarded children, report very low frequencies of pretend play. For example, 6% of her observations were of dramatic play in

groups. Rubin et al. (1978) observed 5-year-old, nondisabled children engaging in this same kind of play about 21% of the time, and 4-year-old nondisabled children doing the same about 10% of the time.

Hill and McCune-Nicolich (1981) investigated the emergence of symbolic play in Down Syndrome children, between the ages of 20 and 53 months, with corresponding mental ages between 12 and 26 months. They used an observational scheme based on Piaget's stages of play development. They found that over 50% of their sample failed to move from single scheme symbolic games to combinatorial symbolic games. The failure to make the transition existed despite the fact that the mental ages of the children were within the appropriate range. They suggest that language delays in the Down Syndrome children may underlie their failure to combine schemes in play.

Summary. In summarizing research on the play of mentally retarded children, we can distinguish between findings that report on the extent to which these children differ from nondisabled peers in their social involvement with others, and findings that focus on the cognitive complexity of play. Mentally retarded children--when compared to similarly aged nondisabled children--engage in less group play, more solitary play, and more solitary non-play. When interacting with others, exchanges are brief, and do not often lead to more elaborate sequences. Mentally retarded children are also described as lacking the ability to structure the environment. Their play with toys is brief, and switches its focus more frequently than the play of nondisabled children. A number of investigators also report that the play of mentally retarded children lacks the appearance of a plan.

Pretend play is also found to be lacking in the play of these children.

Odom (1981) and Hulme and Lunzer (1966) report that when mental age serves as the basis for comparing mentally retarded children to nondisabled children, differences are not found in play activities. Hill and McCune-Nicolich (1981), and Guralnick and Weinhouse (1984) report that the level of play falls behind that which would be expected of the mental age of the mentally retarded children. Hill and McCune-Nicolich suggest that a language delay may underlie the lack of correspondence between mental age and play development. Guralnick and Weinhouse cite two alternative explanations for the discrepancy. The first is based on early caretaker-child attachment research. The quality of early attachment has been hypothesized to influence later peer relations. Disabled children have been found to experience disruptions in this early attachment, and therefore, their later peer interactions would be expected to be deficient. Guralnick's second explanation focuses on the social environment of the disabled child. Disabled children are largely confined to environments where they are not exposed to nondisabled children. They lack experience with children who are more skilled in social interaction, and who might therefore act as appropriate models for development. In addition, the lack of appropriate models deprives the disabled child of experiencing the social consequences of his actions. This feedback has been suggested to function as a mechanism for further development.

Just as the cognitive status of the child might effect his play, teacher practices have been found to influence the kind of play in which children engage. A review of these studies follows.

Empirical Studies of Play Activities and Teacher Practices in Nondisabled Populations

Huston-Stein, Friedrich-Cofer and Susman (1977) distinguished between teacher practices that were structured and directive, in which children were involved in activities led by the teacher, and practices that were helpful and suggestive, in which children worked independent of the teacher. They found that children in the structured classes engaged in less imaginative play than children in the less structured classes.

Johnson, Ershler, and Bell (1980) compared the effects of two preschool programs which held differing educational philosophies. One school had a more formal educational agenda, and used directive teaching practices. The second school encouraged teachers to have an indirect role in the children's learning. The first school was found to encourage more constructive play, less functional play, and less non-play activities than the second school.

Murphy and Goldner (1976) compared two Montessori nursery schools to two traditional schools, in which the children spent more time in structured activities. They found that, during play, the amount of social interaction between children was about the same in the two types of schools, but interactions lasted longer in the Montessori school. Fagot (1973) distinguished between teachers who commented favorably on what children did, and those who initiated interactions, joined in activities, and criticized children. She found that during play activities, children with the first type of teacher exhibited significantly less "non-task" behaviors than children with the second

type of teacher.

Tizard, Phillips, and Plewis (1976) examined the relationship between preschool philosophy and the play activities of children. They compared traditional nurseries to nurseries that emphasized language development. They found the least amount of symbolic play, and the greatest amount of appropriate play (defined as play that exploits the physical properties of materials, but does not involve symbolic themes) in traditional nurseries. They specifically noted that the children's verbal abilities in the language-oriented nurseries were probably not the critical factor in fostering more symbolic play than observed in the traditional nurseries. They comment that the activities stressed by the teachers in the two schools fostered either more "appropriate play" or more symbolic play.

Summary. These studies indicate that teachers have an effect on the play activities of nondisabled children. By organizing the classroom setting in a certain manner--in terms of the activities offered or in having a certain style of interaction--teachers influenced the types of play in which children engaged. No such studies exist for mentally retarded populations. Two studies report on the frequency of interaction between mentally retarded children and their teachers. For example, Guralnick and Weinhouse (1984) note in a comparison of developmentally delayed children in two age groups that the younger and more severely delayed group interacted with teachers a little under 20% of the time. Among the older and less delayed group, teachers were involved in interactions a little more than 25% of the time. Crawley and Chan (1982) report in a study of mildly and

moderately mentally retarded preschool children that with increasing age, teacher involvement decreased. Teacher involvement with children ranged from a high of 26% of the time to a low of 13% of the time.

Research on Mother-Child Interaction

A number of studies have investigated early mother-mentally retarded child interactions compared to mother-nondisabled child interactions. The differences, in theory, can be attributed to the capacities (or lack thereof) that the disabled child brings to the interaction, to the capacities (or lack thereof) that the mother brings to the interaction, or to the effect of either on the other. The primary question is whether the mother is hindering or fostering the mentally retarded child's development.

Brooks-Gunn and Lewis (1982) compared the toy play interactions of mothers and disabled children to those of mothers and nondisabled children. The disabled group consisted of children with Down Syndrome, developmental delays, and physical impairments. The children ranged in age from 2 to 36 months. The nondisabled group ranged in age from 2 to 27 months. For both groups of children, toy play increased with the child's age. They report that the disabled group of children played with toys more often than the nondisabled children. This unexpected finding was attributed to the greater efforts of the mothers of the disabled children to engage the children in toy play. A number of differences in maternal behavior were found: mothers of the disabled children initiated interactions, gave toys to their children, demonstrated the use of toys to children, and engaged in more toy play

than mothers of the nondisabled children. The authors comment that the mothers of the disabled may have been more concerned with facilitating play than the mothers of the nondisabled children. Jones (1977) compared normally developing Infants and Down's Syndrome Infants interacting with their mothers. The 8 and 19 month old Infants were matched for developmental age. Jones points out how the capacities of the Down Syndrome child effected the role of the mother during play. Normally developing children frequently interrupted their own actions by pausing and looking at the mother, who, in turn, used the opportunity to comment on the child's actions. Down Syndrome children did not pause; therefore they did not provide the mother with a "natural" entry into the activity. There was less opportunity to provide feedback to the child.

Buckhalt, Rutherford, and Goldberg (1978) compared the verbal and nonverbal interactions of mothers and their Down Syndrome or nondisabled Infants. After reviewing literature that reported that Down Syndrome children exhibit language delays, the researchers investigated whether the early language environment of the Down Syndrome child is such that it contributes to the delay. The mean chronological age of the Down Syndrome children was 13.5 months, with a mean mental age of 8 months. The mean chronological age of the nondisabled Infants was 12.5 months, with a mean mental age of 13.6 months. Interactions were observed in both a free play and a structured task setting (in which the child was taught how to play with a toy). The primary finding was that the mother's mean length of utterance was correlated with the child's mental age. While the

mothers in the two groups did not differ in their responsiveness, measured in terms of the frequency of smiling and vocalizing, the Down Syndrome children were found to be less responsive to their mothers than the nondisabled children. Mothers of the Down Syndrome children also talked more than the mothers of nondisabled children during the structured task. The authors suggest that the greater amount of talk was a result of the mothers' attempts to elicit a good performance from the child. The authors conclude that they found no evidence to support the notion that the early language environment of the Down Syndrome child contributes to their language delay.

Marshall, Hegrenes and Goldstein (1973) also investigated the verbal interactions of mothers and their mentally retarded child or nondisabled child during a play session. The children were matched according to their chronological age (mean age was 4 years, 8 months). The mentally retarded children used less mands (demands, commands, requests, and questions), less facts (naming, labeling and describing), less intraverbals (unclear what these were defined as), and more echolcs (repetitions) than the nondisabled children. The only difference between the mothers of the two groups was that the mothers of the Down Syndrome children used mands more frequently. The researchers suggest that this was a result of the mother's attempts to exert more control over the children to compensate for their limited mental abilities. Findings that agree with those of Marshall et al. are reported by Bulum, Rynders, and Turnure (1974), who found that mothers of mentally retarded children used more imperatives when interacting with their children than mothers of nondisabled children.

In addition, Kogan, Wimberger, and Bobbitt (1969) found that mothers of mentally retarded children were more controlling (as measured by their greater use of orders, prohibitions, and restraints) than mothers of nondisabled children.

Cunningham, Reuler, Blackwell and Deck (1981) investigated the behavioral and linguistic development of nondisabled and mentally retarded children. The children were observed while interacting with their mothers. Interactions were observed in both an unstructured task and a structured task (in which a number of puzzles were supposed to be assembled). The mentally retarded children ranged in age from 28 to 96 months of age, while the nondisabled children ranged in age from 18 to 54 months of age. The mentally retarded children were found to be less responsive, less interactive, and spent more time in solitary play than the nondisabled children. The mothers of the mentally retarded children were found to be more directive, initiated fewer interactions, and were found to be less likely to respond positively to their child's compliant task-oriented efforts. The researchers divided the population of mentally retarded children into two subgroups: those who were assessed to have higher or lower mental age scores. They found that the complexity of the mother's speech to the children with lower mental age scores was not adjusted to the level of the child's abilities. The authors argue that the lack of adjustment was a result of the child's lack of responsiveness; the children failed to provide the mother with enough information about the level of language they could comprehend. Interestingly, although the mentally retarded children with higher mental age scores initiated more interactions and

were more responsive than the children with lower mental age scores, their mothers were less responsive than the mothers of the children with lower mental age scores.

Gunn, Berry and Andrews (1982) Investigated the early "looking behavior" of Down Syndrome Infants as compared to nondisabled infants. The two groups of mothers were not found to differ in terms of looking at the infant, holding the infant, or vocalizing to the infant. Down Syndrome Infants were found to look at the mother significantly more often than the nondisabled infants. The authors discuss this difference in terms of the Down Syndrome Infants' low distractibility, and the slow development of competing responses.

Summary. In summarizing mother-child research, mentally retarded children were found to differ from nondisabled children in a number of ways. Mentally retarded children--when compared to nondisabled children--were found to focus on the mother more frequently (Gunn et al., 1982), be less responsive to the mother (Buckhalt et al., 1978; Cunningham et al., 1981), provide fewer natural opportunities for the mother to intervene (Jones, 1977), be less interactive and engage in more solitary play (Cunningham et al., 1981), engage in more toy play (Brooks-Gunn, 1982), and use mands, facts, and intraverbals less frequently, but use echolcs more frequently (Marshall et al., 1973).

Mothers of mentally retarded children--when compared to mothers of nondisabled children--were found to be more controlling (Kogan et al., 1969), utilize Imperatives more frequently (Bulum et al., 1974), use mands more frequently (Marshall et al., 1973), be more directive, initiate fewer interactions, and respond less positively to the child

(Cunningham et al., 1981).

The key question raised by these findings centers around the relationship between maternal variables and child variables. When the mother of the mentally retarded child is found to be different from the mother of the nondisabled child, is her behavior adapted to the mentally retarded child's abilities, and does she facilitate the child's further development; or are her behaviors limiting the child's opportunity to contribute to the interaction and limiting the opportunity to regulate his own actions. Hence, is she hindering the child's further development. The reported findings are ambiguous in answering this question. For example, Buckhalt et al. (1978) found that the mother's complexity of speech was adapted to the level of the mentally retarded child's ability, while Cunningham et al. (1981) reported similar results for mothers of mentally retarded children with high mental age scores but reported that mothers of mentally retarded children with low mental age scores did not match the complexity of her speech to the level of the child.

The notion of adaptation has been considered in relation to research on peer interaction. A number of such studies are detailed in the next section.

Empirical Research Comparing Interactions Between Developmentally Disabled Children and Nondisabled Partners With Interactions Between Nondisabled Partners

Gurlanick and Paul-Brown (1980, 1984), in a series of studies, investigated the nature of a mainstreaming environment. They were interested in the complexity of talk targeted for developmentally

delayed children. If the communicative environment is too complex in an integrated setting, then the delayed children may be overwhelmed and unable to interact with others. On the other hand, if the communicative environment is adjusted to the abilities of the delayed children, then the children are afforded the opportunity at least, to interact with others.

Gurainick and Paul-Brown paired a nondisabled child with either another nondisabled child or with a developmentally delayed child. The nondisabled child was instructed to "teach" the partner how to use a certain toy. The interactions were then analyzed for behavior-request episodes. Behavior-request episodes were defined as containing a request made by the nondisabled child to which the partner did not comply. The subsequent attempts to achieve compliance were then analyzed. Results showed that regardless of who the companion was, compliance was obtained in over 49% of the episodes. There were differences in how this was achieved, though. When the partner was developmentally delayed, the nondisabled "teacher" attempted to gain compliance by demonstrating the requested behavior; they modeled the targeted behavior. When the companion was nondisabled, the original request was justified or mitigated in an attempt to gain compliance. In addition, more information would be given.

Milne and Johnson (1985), in a referential communication task, compared the speech of a nondisabled child (mean age was 9 years) to either a nondisabled peer, a similarly aged mentally retarded child, or a younger nondisabled child (mean age was 6 years). They report that speech was modified for the mentally retarded children but not for the

younger listener, as measured by an increase in the total amount of speech and an increase in the semantic coherence of the communications.

While not detailing specific adaptations, Guralnick (1981) and Field, Roseman, De Stefano, and Koewler (1981) found that integrating disabled and non-disabled children in a play environment increased the frequency of social interaction in the disabled population, and decreased the frequency of their inappropriate play (defined as the use of an object in a mechanical and repetitive fashion). These two studies indicate that the social environment, in the guise of nondisabled children, can elicit behavior from the disabled that is developmentally more advanced than their behavior in non-integrated settings.

Summary. The issue of adaptation is important when addressing the implications of interaction on the further development of the mentally retarded child. The expectation is that parents, teachers, and peers can provide a supportive context that can enable the mentally retarded child to perform in a manner that, if left on their own, they might not otherwise achieve. But not every kind of interaction is necessarily promoting the child's opportunity to learn and develop. For example, the importance of Guralnick and Paul-Brown's studies (1980, 1984) is to document whether or not the mainstreaming environment actually provides a disabled children with the opportunity to learn from nondisabled children. If the disabled child is immersed in a communicative environment that is too complex, then the child will presumably become alienated from other children, and miss out on the opportunity to learn from them. Similarly, research on mother-mentally retarded child

Interaction attempts to isolate what it is that a mother might do that either exposes the child to developmentally progressive or developmentally regressive experiences. If the mother is overly controlling and directive, then the child will presumably be prevented from developing the ability to regulate their own behavior.

Parental Goals During Interaction

The reviewed studies have considered interaction solely in terms of the capacities of either participant, or the effect of one on the other. Emerging patterns of interaction that emerge are the result of one member's response to the other. There are indications though, that differences between interactions involving mentally retarded children and nondisabled children are also the result of another factor. There is evidence from studies on mother-child interaction that mothers of mentally retarded children are defining the purpose of their interactions differently from mothers of nondisabled children. That is, mothers of mentally retarded children might behave differently from mothers of nondisabled children for two reasons: 1) the capacities of their children are different; 2) they are pursuing different goals when interacting with their children. It is unclear whether these alternative goals are in response to the child's actions or are in response to the "fact" that the child is mentally retarded.

In a preliminary report, Mash (1984), for example, compared the interactions between developmentally delayed, hyperactive, or abused children and their mothers in both a free play and structured task condition. While the mothers in the three groups were found to be

directive and controlling during the structured task, only mothers of the developmentally delayed children remained directive and controlling in the free play setting. The frequency with which mothers of the hyperactive and abused children directed during the structured task may have been the result of their efforts to manage their child's performance, but this management was not necessary when confronted by a different task--free play. The situation was redefined, freeing the mother to allow the child to pursue his or her own agenda. The mothers of the developmentally delayed children, on the other hand, were presumably not distinguishing between task conditions because their perceived responsibilities remained the same: the child needed to be taught or shown how to act in both structured and unstructured tasks. It was control in the context of the goal of teaching that distinguished mothers of developmentally delayed children from mothers of hyperactive and abused children.

It is interesting to note that Kogan et al. (1969) found that the most frequent form of communication for mothers of mentally retarded children was the "teaching" question, i.e. a kind of question where the mother already knows the answer, but is requesting that the child display the ability to answer. Perhaps situations are defined as pedagogical more frequently when the child is identified as having a cognitive deficit than when the child is either nondisabled or has some other kind of disability.

Stoneman, Brody, and Abbott (1983) provide additional evidence that parents of mentally retarded children define their role in interaction differently than parents of nondisabled children. They

observed Down Syndrome children (mean age was 5.3 years) interacting with both parents at home in a free play situation. These interactions were compared to those of similarly situated nondisabled children (mean age was also 5.3 years) and their parents.

Stoneman and colleagues classified the roles a parent assumed when interacting with their child. The three roles that proved to differentiate the two groups of parents were: 1) role of teacher, which was defined as the attempt to model, explain, demonstrate, provide labels, or question with the purpose of teaching; 2) role of manager, which was defined by commanding or requesting the child to perform or not perform a certain behavior; and 3) the role of playmate, which was defined as the participation in joint play. They report that the parents of the Down Syndrome children assumed the role of teacher and manager significantly more often than the parents of nondisabled children. On the other hand, parents of the nondisabled children assumed the role of playmate more often than the parents of the Down Syndrome children.

There is additional support for the notion that parents of mentally retarded children define situations differently than parents of nondisabled children. Maurer and Sherrod (1987) compared the use of directives in mother-Down Syndrome child interaction and mother-nondisabled child interaction. After finding that when the children were matched in terms of their mental age there was no difference between the two groups, the authors comment, "These parents [of Down Syndrome children] seemed to be more anxious for their children to be doing the correct things with their toys. They may have been more

concerned with the social acceptability of their children's behavior than were parents of nonretarded children (p. 588)."

Buckhalt et al. (1978) similarly comment:

We did make the general observation that mothers of Down's Syndrome children seemed to be "trying harder" on the direct teaching task than did mothers of nonretarded children. Because the Down's Syndrome infants demonstrated less competence in playing with the toy provided, it was our impression that their mothers used more language in trying to encourage their infants' good performance (p. 342).

It is possible to argue that the role the parent takes on, or the goal of trying to elicit certain behaviors from the mentally retarded child, is a result of the child's performance, or lack thereof; the parents' goals might be adapted to the (in)capacities of the child. Yet there are indications that this is not necessarily the case. For example, Brooks-Gunn and Lewis (1982) describe mothers of handicapped children as oriented to "facilitating" the toy play of their children, leading one to assume this was in response to the child's reported lack of initiative. Yet the authors comment, "However, in no case did developmental age totally erase the differences between the handicapped and normal children. Thus characteristics of the child other than mental age influence both infant and maternal behavior (p. 26)." It is possible that the knowledge that the child is handicapped elicits a different definition of a play setting, and this alternative definition is realized in the mother being a "facilitator," or in Buckhalt's case, an "encourager-of-good-performance," or in Maurer's case, a "corrector-of-behavior."

Guralnick and Paul-Brown (1984) directly address the implications of the knowledge that a child is disabled in their analysis of behavior

request episodes reviewed earlier. When a nondisabled child in the role of "teacher" attempted to get another nondisabled child to comply with a previously ignored request, a justification was offered. However, when the other child was developmentally delayed, the "teacher" would attempt to gain compliance by demonstrating the original request. While it is possible to argue that the strategy of providing a demonstration was adapted to the perceived abilities of the disabled child, Guralnick and Paul-Brown opt for an alternative explanation. They argue that the disabled child is perceived to be lower in status by the "teacher," and therefore does not merit a justification for the request. When the "teacher" is with another nondisabled child, they are perceived as being equal in status, and therefore have a better chance of eliciting a reason that justifies the original request. Guralnick and Paul-Brown are focusing on the perceived status of the disabled child that informs the responses of a participant.

That alternative definitions of similar situations effect patterns of interactions is an issue raised by Crawley and Spiker (1983). In a study of 18 dyads of mother-Down Syndrome child play interactions the authors focused on individual differences. Noting that mothers of Down Syndrome children, when compared to mothers of nondisabled children, have been characterized as a group as being more directive or more controlling, the authors were specifically interested in whether or not individual variation was evident. They found, for example, that some mothers were highly directive, while others observed and commented on their child's activities. Similarly, some mothers were rated highly

sensitive to the child, while others were rated as being insensitive and intrusive. Some mothers who were highly directive were found to be sensitive, and conversely, some insensitive mothers were found to be nondirective.

Crawley and Spiker present their dimensional ratings of maternal actions as indicative of an interactional "style." The notion of style indicates that the ratings of mothers in a particular play setting are assumed to be stable across situations and over time. Thus, mothers who were rated as being highly directive are assumed to be so in other unobserved settings, and also to be similarly directive over time. This assumption leads the authors to suggest that a certain combination of maternal variables may contribute over time to the child's higher functioning. For example, they found that mothers who were highly directive, highly sensitive, and provided an optimum level of stimulation for the child, had the most developmentally advanced children in the sample.

The strategy of correlating maternal variables with the child's mental development leads the authors to a problem. Lower functioning children should have mothers who were rated as being insensitive to their child's cues and signals. Yet when analyzing mother-low functioning child interactions, Crawley and Spiker found that:

Mothers who attempted to [engage the child in cognitively enhancing interactions] tended to elicit conflict and thus received low ratings on both stimulation value and sensitivity. Other mothers, however, who seemed to be aware of their child's low level of responsiveness/cooperation, assumed a relatively noninvolved observer-commenter interaction style. Such mothers were often rated as low on stimulation value, but in many cases were rated high on sensitivity (p. 1321).

The authors conclude that since sensitive mothers have low functioning

children, factors other than maternal variables contribute to the child's rate of mental development.

Rather than associating a style of interaction with higher or lower functioning children, it may be more fruitful to think of behavior as related to alternative definitions of the play situation. Mothers who were rated as being sensitive may have received this rating because they and their children were oriented to the play situation in a similar manner. That is, when a child and mother were aligned with each others definition of the situation (mothers allowed the child's interests to prevail), the mothers were judged as sensitive to the child. When a child and mother were not aligned with one another (mothers pressed for a cognitively oriented line of action that the child resisted), the mother was viewed as being insensitive. Rather than thinking of mothers as having a sensitive style across situations and over time, it may be valuable to understand how the mother's definition of a situation, and the immediate goals she, therefore, pursues in that situation, leads her to be alternatively aligned or not aligned with the child's actions.

Such a switch in research strategies would, for example, change the emphasis of Crawley and Spiker's discussion of their findings. Rather than focusing on maternal variables that might be related to higher and lower functioning children, the emphasis would be on whether the mother's definition of a situation was or was not aligned with the child's actions. Thus, a mother who intruded upon a child's actions to engage the child in a cognitively enhancing interaction was probably not contributing to the child's further development regardless of

whether that child was a high or low functioning child.

Crawley and Spiker's attempt to relate lower and higher functioning children to such maternal variables as sensitivity, directiveness, and the stimulation value of her interventions, again raises the issue of how adults may foster or hinder a child's development. In their review of literature on mother-mentally retarded child interaction, Schneider and Gearhart (1988) suggest that Vygotsky's notion of the zone of proximal development provides a way of understanding caretaker-child interactions. The zone of proximal development is an instructional context. Under the guidance of a more skilled peer or adult, the child is able to display abilities that he or she would not be able to display on his own. By providing a supportive context while challenging the child, the adult extends the child's abilities a bit further. The issue is not whether a mother, for example, is directive and/or sensitive, but whether the mother is participating in an activity with the child, in the child's zone of proximal development.

The zone of proximal development assumes that the adult and child are co-participants in a joint activity. The adult must adapt or adjust the level of his guidance to the child's understanding of the activity if learning is to occur. There has to be some overlap, therefore, in the child and adult's understanding of the situation in which they participate.

How a situation is defined is related to the immediate goals the adult pursues when interacting with a child. For example, in Crawley and Spiker's study, mothers who were reported to be intruding on their

child's actions in order to engage them in a cognitively enhancing experience found themselves to be at odds with the child. While the child may have wanted to do one thing with a toy, the mother may have attempted to initiate an alternative that the child resisted. The mother's goal appeared to be educational, and was perhaps the result of the definition of the play situation as an educational setting. The setting was not defined as an area of free play. It is difficult to imagine that this mother was sharing some understanding of the situation with her child; nor did she appear to be a joint participant in that situation with the child. On the other hand, mothers who were described as sensitive, but were reported to not engage the child in cognitively enhancing interactions were content to allow the child to do as he pleased. The mother observed and commented, but did not impose a definition of the situation that was at odds with the child's actions, nor did she pursue goals that brought her in conflict with the child. These mothers appeared to be sharing some common understanding of the situation with the child, and appeared to be participating in the child's actions by commenting on them.

Summary. This section has reviewed studies that suggest that mother-mentally retarded child interactions differ from mother-nondisabled child interactions because of differences in how situations are defined. Mothers may pursue different goals or assume different roles when interacting with mentally retarded children than when interacting with nondisabled children. These differences appear to be related to different patterns of interaction.

Summary of Literature Review

Summarizing the argument being made in the review of literature, it was found that mentally retarded children have been found to evidence a slower rate of development in their play (Copobianco et al., 1960; Crawley et al., 1982; Field et al., 1982; Guralnick et al., 1984; Guralnick et al., 1985; Hill et al., 1981; Horne et al., 1944; Koolj, 1978; Mindes, 1982; and Tilton et al., 1964). These studies argue that the child's cognitive deficits are reflected in the level of their play.

There is evidence, though, that the play of children is influenced by environmental factors. The play of nondisabled children has been found to be influenced by teacher practices (Fagot, 1973; Huston-Stein et al., 1977; Johnson et al., 1980; Murphy & Goldner, 1976; Tizard et al., 1976). The complexity of play of developmentally delayed children has been found to be influenced by the presence of nondisabled children (Field et al., 1981; Guralnick, 1981). The social world, therefore, is implicated in the level of play in which a child engages.

Schneider and Gearhart (1988) suggest that Vygotsky's notion of the zone of proximal development is useful for conceptualizing the operation of the social world in influencing the development of the child. The zone of proximal development is a learning context that effects the child's development. Interacting in the child's zone of proximal development involves participating in a joint activity; therefore, some overlap in how the adult and child define a situation is necessary.

Research was reviewed suggesting that mothers of mentally retarded

children define play situations differently than mothers of nondisabled children (Brooks-Gunn et al., 1982; Buckhalt et al., 1978; Mash, 1984; Stoneman et al., 1983). These alternative definitions appear to be related to patterns of interaction (Crawley et al., 1983; Mash, 1984). The question is whether these alternative patterns of interaction foster or hinder the child's further development.

CHAPTER 11

STATEMENT OF AIMS

The dissertation research study sought to document differences between teachers of mentally retarded children and teachers of nondisabled children. The following is a specific statement of the aims of this research study.

Research was reviewed that reports that situations are defined differently when a child is mentally retarded than when the child is nondisabled (Crawley et al., 1983; Mash, 1984; and Stoneman et al., 1983). The first statement of the aims of the dissertation is, therefore:

1. Do teachers of mentally retarded children define the play setting differently than teachers of nondisabled children.

Mash's study (1984), and to a certain extent Crawley and Spiker's study (1983), suggest that alternative definitions of a situation are related to different patterns of parent-child interactions. Mash found that mothers of mentally retarded children were directive in both a free play and a structured task condition, while mothers of hyperactive or abused children were directive only in a structured task setting. Crawley and Spiker found that mothers who observed and commented on the actions of low-functioning Down Syndrome children were judged to be sensitive to their children's cues and signals, while mothers who attempted to engage their low-functioning Down Syndrome children in cognitively enhancing interactions were judged to be insensitive to their children. The second purpose of the dissertation is therefore:

2. Do alternative definitions of a situation have consequences on how a teacher interacts with a child?

In discussing the findings of the research, the question that will be raised is whether the teacher is fostering or hindering the child's further development.

CHAPTER III

METHODS

Population

Since this study was concerned with the effect of teachers on children, sample size was based on the number of teachers. A total of 30 teachers were selected for participation in this study. Ten teachers from each of three groups, as defined by the age and disability of the children in that group, were selected. The children were either mildly or moderately mentally retarded or nondisabled. The mentally retarded children were from two age groups: 3- to 5-year-olds and 6- to 8-year-olds. The nondisabled group was from one age group: 3- to 5-year-olds. Diagnosis and age range was obtained from the home institution. In addition, age and diagnosis was confirmed by checking with the teacher prior to selection.

Subjects were obtained through the New York City Parks and Recreation Department's summer schedule for institutional visitors to a public playground. The population consisted of teachers and their children who came to the playground during the morning hours of weekdays, a time that was reserved by the playground for institutional groups.

Two age groups for the disabled population were chosen so that the younger group would match the nondisabled group according to chronological age. The older disabled group was selected to match the nondisabled group according to mental age. Children visiting the

playground were doing so as part of a trip scheduled by their Institution. They were not visiting the playground as subjects for this study. While permission was granted by parents and Institutions for children to serve as subjects of research, permission was not granted for access to files containing specific information on specific children. Therefore, precise IQ scores were not available for matching the mental ages of the nondisabled children and the older mentally retarded children.

The Setting

Teacher-child interactions were videotaped at a public playground. The playground is a 2.6 acre site, staffed by the New York City Parks and Recreation Department. Opened during the summer of 1984, the playground was designed for disabled and nondisabled children. The playground consists of both traditional and innovative resources for play. There are slides, swings, monkey bars, and a number of sandboxes. There is also a water wheel (a sprinkler of sorts), nets that can be climbed, and mats for tumbling. The playground is also equipped with "loose parts,"--toys, games, sports equipment, and an assortment of wheeled vehicles.

Procedures

Videotaping. Teacher-child interactions were recorded on videotape. Videotaping began approximately 1/2 hour after a group first arrived at the playground. A schedule of each day's visiting Institutions was available to the researcher. Teachers were randomly

chosen from the schedule for participation in the study.

Teachers were asked if they would participate in the study in the following manner:

I am part of the research team working with the NYC Parks and Recreation Department. We are interested in finding out about teachers and children when they visit the playground. One of the ways we do this is to ask teachers if we can videotape their activities when they are here. I was wondering if you would participate in the study. It would involve putting this small microphone on you, and videotaping you for about 10 minutes. If at any time during the taping you feel uncomfortable, or you think the children are feeling uncomfortable, and would like to stop the filming, we will do so immediately. While we would appreciate your help, you do not have to participate if you do not want to.

Teachers and children were videotaped for about ten minutes. The ten minute time period was chosen since it allowed the teacher ample opportunity to engage a child or number of children in interaction. The camera shot focused on the target teacher, and included all of those children he or she was in direct contact with.

The teacher was given a small, wireless microphone to wear. This was clipped to a lapel or T-shirt, and an attached transmitter was clipped onto a belt, or placed in a pocket or purse. The microphone transmitted its signal to a receiver that was attached to the video recorder.

Interviewing. When the 10 minute videotaping segment was completed, the teacher was approached and the microphone was retrieved. At that time the teacher was asked if they would like to view the tape at some later time and discuss its contents with the investigator.

The interview of the teacher was based on viewing the videotape. The teacher was given two opportunities to view the tape in its entirety. During the first viewing the investigator used a remote

control device to play the tape, and the teacher was instructed as follows:

I am going to show you the videotape that we took of you and your children when you came to the playground. I am interested in understanding what was going on when we took this film. Some of the things you will see will probably seem so obvious that you will think that I must understand what was going on. I would like you to pretend that I know nothing, and that you have to explain everything to me, in as much detail as possible, no matter how irrelevant such details may seem. I would like you to tell me all this from one second to the next, from one moment to the next. I would like you to tell me what you might have been responding to, what you might have been anticipating, and just basically what was going on.

Whenever the teacher started to talk, the time, as displayed on the videotape, was noted. After the first viewing the teacher was given the remote control device, and was asked to re-view the film, but to now stop the tape whenever she wanted to say something. The instructions were offered again.

Data Analysis

Patterns of Interactions were thought to be potentially influenced by the size of the group in a teacher's charge. The teacher to child ratio for each group was determined in the following manner. The total time each teacher was observed was divided into ten equal intervals. At the end of each interval, the number of teachers overseeing the group of children was totalled (teachers were sometimes working in groups), as was the number of children being overseen. A frequency table was used to display the percentage of all intervals that contained the different teacher-child ratios for each of the three groups. Since teachers sometimes worked in groups, the percentage of intervals that a teacher worked alone or with others was also

calculated for each group.

Patterns of interaction were also thought to be potentially influenced by the area of the playground in which the teachers and children were observed. The calculation and display of play regions in which observations were recorded was similar to that used for teacher-child ratios.

Play regions were defined by the areas immediately surrounding playground equipment. Playground equipment was classified into one of three categories, defined by the quality of the physical boundary surrounding the specific piece of equipment. Play regions with rigid boundaries were either raised off the ground, making entry and exit difficult without assistance from the teacher, or had a wall around it making entry and exit easily controllable. For example, a large number of sandboxes at the playground were built approximately three feet off the ground, making access difficult. Play regions with permeable boundaries were in open areas, but traffic was centered on a distinct structure. For example, the slides and monkey bars were distinct structures, but stood alone in the center of open areas. Play regions with open boundaries were large, unstructured, and had multiple points of entry and exit. For example, the playground had a large, open padded play area in which loose parts were diffusely placed.

Units of interaction. Teacher-child interactions were segmented into units according to criteria outlined by Stubbs (1983). Individual moves in an interaction are contained in turns, which are sequenced in exchange sequences. An exchange is an interactive unit, to which, for example, two people contribute. The classic example is of a question-

answer exchange sequence. The question and the answer are both moves which form an exchange. An exchange sequence minimally contains an initiation and a response. Sequences begin with initiations that predict a next move, and terminate with moves that are predicted, but do not in themselves predict any follow-up move. Exchanges can be extended by optional moves. In addition, Stubbs provides criteria for determining whether or not an initiation is part of an ongoing exchange, or initiates an exchange.

Whenever a teacher made a bid for a child's attention, or responded to a child's bid, the videotape was stopped. Using Stubbs's criteria, the boundaries of the exchange sequence were located, and the time coordinates noted.

Defining teacher goals. The purpose for interviewing teachers was to document the different goals teachers of the two mentally retarded groups of children, and teachers of the nondisabled were pursuing. Interview comments were coded into one of three categories: 1) the teacher talked about how she was managing or supervising the children; 2) the teacher talked about how she was trying to educate or socialize the children; 3) the teacher talked about engaging the children in an activity, where the focus was on the activity itself. The following are examples of the above three distinctions:

1. Supervisory goal: The teacher expresses a supervisory goal in referring to where other caretakers and children are:

"Right now they're just running and I'm just trying to keep watch, trying to watch all of them. I think Miss C had some of them in the sandbox, and Miss P was over by the monkey bars with some, and I, basically I was just trying to keep them close to me, cause I was nervous I was going to lose somebody."

2. Educational goal: The teacher expresses an educational goal in referring to her reason for trying to get a child to push some sand in a pail:

"You see its important that he feels the tactile of the sand. A lot of the kids don't know sand. They've never been to a sandbox, and never been to a beach, so I want, I'm trying to have him push so that he feels the wet cold sand."

3. Activity goal: The teacher expresses an activity goal in his talk about creating or initiating activities in which the children can become involved. The focus is on this engagement and not on an educational or supervisory issue:

"We're going from the bridge over to the monkey bars, and we're crossing over another little bridge here, and you know, instead of just saying o.k., we're going over there and pointing and walk over there, you know, during that time, I try to take that time to keep them moving too, and have some kind of activity going. So here I'm going to start running, and what happens is sure enough the one kid's going to be running behind me and the other kids will probably start running too, and when they see that I'm moving and I'm interested and involved they pick up on that."

The Teacher's Role: Direct or Indirect Participant in Play. On the basis of pilot data, it was found that teachers varied according to their direct or indirect participation in their children's play. That is, some teachers were overseeing their children's play without becoming directly involved in it, while others were directly involved in the content of what transpired. This latter category is similar to the categories of teacher, manager and playmate used by Stoneman et al. (1983), while the former appears to similar to Crawley and Spiker's (1983) observation that some mothers were observing and commenting on their children's play without becoming directly involved in it.

This observation indicated that teachers were defining their role

vis a vis the children differently. This dimension of teacher-child interaction was considered to be an additional aspect of how teachers might differently define the play setting.

To code for the teacher's role, a matrix (Figure 1) was created. Each exchange sequence was coded into one of four categories.

Figure 1
Matrix Used for Classifying Teachers
According to Their Role in Children's Play

	Participatory Exchange	Directive Exchange
Individual		
Group		

As shown in Figure 1, the horizontal axis indicates the type of exchange being coded: participatory or Directive (definitions to follow). The vertical axis indicated whether the exchange involved a teacher and single child, or teacher and a group of children (defined as two or more children).

Directive exchanges were considered to be the enactment of the teacher's role as regulator of the orderliness of the children's play, and indirect participant in play. The teacher's role as directive was coded when the exchange sequence addressed one of four issues: 1) Safety: when a teacher responded to a child's or children's actions, or initiated an exchange with a child or children, by orienting to the

possibility of an accident, or by attempting to avoid the possibility of its occurrence, she was considered to be accomplishing a directive exchange. An example is when a teacher asks a child to move so that they do not fall. 2) Management: when a teacher initiated an exchange with a child or children, or responded to the actions of a child or children, by orienting to the whereabouts of the child or children, she was considered to be accomplishing a directive exchange. An example is when a teacher calls a child back to the immediate play region when he or she is moving away from it. 3) Trafficking: when a teacher initiated an exchange with a child or children, or responded to the actions of a child or children, by orienting to the flow of bodies and the easing of congestion or managing the taking of turns, she was considered to be accomplishing a directive exchange. An example is when a teacher requests that children take turns sliding.

4) Monitoring: When a teacher initiated an exchange with a child or children, or responded to a child or children, by supporting an action without becoming involved in it, she was considered to be accomplishing a directive exchange. An example is when a teacher is "catching" children at the bottom of a slide. This kind of directive exchange occurred when the teacher was acting almost as an extension of the environment. She was monitoring the play, assuring its continuity, but was not directly involved in what transpired.

Participatory exchanges occurred when a teacher was a direct participant in play. These were typically face-to-face exchanges. Participatory exchanges accomplished: 1) the proposal of an activity; 2) the directing of the participants toward realizing some step in an

activity; 3) the evaluation of progress in an activity; 4) the formulation of the participant's actions in terms of an activity; and 5) the orientation to breaches in the doing of the activity.

To augment findings that potentially reported differences in how teachers were defining the play setting, differences between the three groups of teachers in terms of their rate of interaction, mean length of an exchange sequence, and proportion of total time observed spent in exchange sequences were calculated.

Cross-Classification of Teachers. In order to examine whether alternative definitions of the play setting effected patterns of interaction, individual teacher profiles were examined. Two pieces of data served to classify teachers according to how they defined the play setting. Each teacher's most frequently stated goal during the interview (educational, activity, or supervisory) was used as an indication of the teacher's definition of the play setting. For example, if the teacher's most frequently stated goal during the interview was educational, then the teacher was considered to be defining the play setting as an educational one. The second piece of information was whether the teacher was most frequently engaging in directive or participatory exchanges with children. This piece of information indicated whether the teacher considered her role to be one of direct participant in the children's play, or as an indirect supporter, where the children's independent activities were monitored. The following matrix was created:

Figure 2

Matrix Used for Classifying Teachers According to
Their Definition of the Play Setting

Most Frequent Exchange Category	<u>Teacher's Most Frequently Expressed Goal</u>		
	<u>Educational Goals</u>	<u>Activity Goals</u>	<u>Supervisory Goals</u>
Participatory Exchanges			
Directive Exchanges			

As shown in Figure 2, an individual teacher's most frequently expressed goal and most frequent exchange category served to classify each teacher, regardless of their original group (as defined by the age and status of child), in the matrix. In this manner, two teachers were understood to be defining the play setting differently if, for example, Teacher X was classified in the box indicating that she engaged in participatory exchanges most frequently, and expressed educational goals during the interview most frequently, and Teacher Y was classified in the box indicating that she engaged in directive exchanges most frequently, and expressed supervisory goals during the interview most frequently. The matrix yielded teacher groupings according to similarities in setting definitions. These groupings then served as the basis for comparing patterns of interaction.

Classifying Teacher-Child Exchange Sequence. The critical dimension of teacher-child interactions was the distinction between

exchange sequences in which the teacher was aligned with the child's focus, and those sequences in which she was not. The status of the teacher and child's alignment is an important dimension of the zone of proximal development. When aligned, the teacher and child are jointly focused, there is an overlap in how they understand the situation and the relevance of each other's contributions to maintaining that situation. When not aligned, the different definitions of the situation are the focus of the exchange, and either participant can take steps to repair the alignment. Joint participation is a feature of the zone of proximal development, which has been advanced as a useful notion for understanding how interactions with mentally retarded children might differ from interactions with nondisabled children (Schneider and Gearhart, 1988).

The status of the teacher and child's alignment was determined by the relationship between the teacher and child's moves in an exchange sequence. When aligned, the teacher oriented to the child's actions by:

- 1) focusing on the child's actions by commenting on them, responding to requests, providing assistance, or proposing a goal. The following is an example:

Teacher (T) and Child (C) are in the sandbox. The child is making a sandcastle with the teacher's involvement. Having filled a pail with sand, and dumping it upside down, C is about to lift the pail up to unveil the castle.

C: (Hands on both sides of pail, about to pick it up)

T: Now pick it up

C: (Tries, then looks at T)
I can't

T: (Putting her own hands on the sides of the pail)

OK, ready?

We'll do it together

C: (Picks up pail, looks at T)

T: (Taps C's nose)

You did it!

2) extending or elaborating on the child's actions. The following

is an example:

The Teacher (T) and Child (R) are climbing through the monkey bars, with a second child (B), following each other. The teacher initiates a change in the tempo, but announcing that she will chase R.

R: (Climbing through monkey bars)

T: There's R

I'm gonna go this way and see if I can catch up to you

R: (Looks at T)

T: (Feigns move to left, then right)

Which way?

R: (Moves to right)

T: (Catching R)

Gotcha

3) providing procedural information for the child. The following is an example:

Teacher (T) and Child (R) are climbing through the monkey bars, when R hits his head on a bar.

R: (Hits head on bar, looks at T)

T: Oh!

You bumped your head

We have to be very careful

Right?

B had bumped his head just before

Are you alright R

We've got to make ourselves real small, short little people

When not aligned with the child's actions, the teacher oriented to the child's actions by:

1) competing with the child's focus by suggesting an alternative.

The following is an example:

Teacher (T) and Child (J) are sitting opposite one another. J is stacking Lego blocks. The teacher starts to build a similar structure, and attempts to draw J's attention toward this structure.

J: (As she stacks Lego blocks, one falls off)

T: (Takes the block that has fallen and stacks it on her own structure)

Look at the house

J: (Looks toward ground for another Lego block)

2) Mismatching the child's actions by prohibiting or blocking their continuation. The following is an example:

Teacher (T) and Child (L) are both standing in front of a chest-high (to the child) sandbox. The teacher had been guiding the child through a series of actions that involved making imprints in the sand with an ice cube tray the child was using. Prior to the start of the following sequence, the child has been involved in chopping at the sand with the ice cube tray.

L: (Chopping at sand)

T: Now watch this

Add one more

(Puts hands on L's, stopping his chopping)

L: (Stops chopping)

T: (Pushes L's hands, holding tray, through sand, then removes own hands)

L: (Takes hands off mold)

3) Orienting to the child's actions as a breach. The following is an example:

Teacher (T) and Child (K) are at a slide. The teacher is standing at the bottom, while the child is climbing the stairs to the top. He takes a colored ribbon from around his neck, one that he is supposed to wear, and throws it to the ground.

K: (Throws ribbon to ground)

T: K!

Come here!

Down

K: (Continues walking up stairs)

T: Nope

(Pursuing K)

Nope

What did I tell you,

No throwing anything

(Takes K's hand)

C'mon

K: (Complies)

4) Usurping the child's actions by radically altering the child's participation in his focus. In this case, the child's participation is radically altered if the teacher uses the child's focus as an opportunity to engage the child in a pedagogical exchange, or if the teacher regulates the child's actions so completely that his

participation in an exchange sequence is effectively reduced to a bare minimum.

Teacher (T) and Child (J) are sitting opposite one another. J is stacking different colored Lego blocks on one another. The teacher has been talking to another child, but at the start of the sequence turns her attention to J.

J: (Stacking Lego pieces)

T: What color--

Where's the red block?

J: (Points to green block)

T: Re:d

(Points to red block)

When determining the status of the teacher and child's alignment there were ambiguous cases. This was usually because there was not enough behavioral evidence for a coder to adequately determine what it was that the child was focused on that the teacher was responding to, or intervening on. In order to be focused, the child had to be involved in some action. That the child was acting was determined by examining his gestures, gaze direction, body orientation, and verbal output. That is, when the child was talking, or his gestures, gaze, and/or body was engaging an object, person, or piece of equipment, he was considered to be displaying enough physical evidence for a coder to judge that he was focused on something. Having determined that the minimal requirements for establishing the child's focus had been met, the teacher's response to the child, or initiation to the child, could be coded as aligned or not aligned with that focus. If the minimal requirements for determining the child's focus were not met, the exchange sequence was coded as an ambiguous case. Typical ambiguous cases were when the child was standing still or staring into the distance when a teacher bid for the child's attention. In these cases,

since the child was not directly engaged in a line of action, it was not possible to determine whether the teacher was aligned with or not aligned with the child's focus. The following is an example:

Teacher (T) and Child (J) are at a slide. The child, having completed a slide, is standing at the bottom and not moving, while another child waits to slide at the top. The teacher intervenes to apparently clear the bottom of the slide for the next child.

J: (Standing at the bottom of the slide)

T: Do you want to go back up?

J: (Looks at T)

T: Go back up

 You can go back up again

 Go ahead

J: (Complies)

Reliability

Reliability was assessed for the following: 1) the teacher's direct or indirect participation in an individual child's play or group of children's play (Figure 1 depicts these categories); 2) the teacher's goals (educational, activity, or supervisory) as expressed during the interview; 3) the boundaries of exchange sequences; 4) the status of the teacher and child's alignment. The investigator coded all tapes and interviews. A second person coded three complete teacher-child observations, one from each of the groups (as defined by the age and status of the child), for each of the four reliability checks. Viewing videotapes of three different teachers for each of the four reliability checks, led to a sampling of 12 different teacher profiles.

In order to determine reliability, an agreement matrix (Bakeman & Gottman, 1986) was created for each of the four reliability checks. An agreement matrix is composed of a vertical and horizontal axis, both composed of the same categories that are being checked for reliability.

One axis is reserved for the first observer's coding, while the second axis is reserved for the second observer's coding. The diagonal of the matrix indicates the number of times that observer 1 and observer 2 agreed in their coding, while all entries off the diagonal indicate a disagreement. The total number of agreements (represented by the total number of entries along the diagonal) is divided by the total number of agreements and disagreements (determined by the total number of entries that are not on the diagonal).

The percentage of agreements were the following: 1) the Interobserver agreement on exchange sequences that were coded for the teacher's indirect or direct participation in an individual's or group's play was .92; 2) the Interobserver agreement for the teacher's goals as expressed during the interview was .87; 3) the Interobserver agreement for determining the boundaries of exchange sequences was .83; 4) the Interobserver agreement for determining the status of the teacher and child's alignment was .88.

CHAPTER IV

QUANTITATIVE RESULTS

Were All Teachers Responsible for the Same Number of Children?

Patterns of interaction between teachers and children were thought to be potentially influenced by the different numbers of children and teachers making up the group. Table 1 reports the different teacher to child ratios that were found for the three groups.

Table 1

Mean Proportion of Intervals Observed in Various Teacher to Child Ratios for Three Groups

Group	<u>Teacher to Child Ratio</u>			
	1:1	1:2	1:3	1:4 or more
3-5 ND	.01	.15	.32	.52
3-5 MR	.35	.36	.11	.18
6-8 MR	.17	.25	.25	.33

Note. Numbers represent the percentage of all intervals for each group observed in different teacher-child ratios. The total observational period for each subject was composed of ten intervals.

As shown in Table 1, teachers from each of the three groups were observed to be in different sized groups. Teachers of the nondisabled were observed to be more frequently in higher teacher-child ratios than either of the groups of teachers of the mentally retarded. Teachers of 3- to 5-year-old nondisabled children were observed to be in a ratio of

one teacher to four or more children 52% of the time. In contrast, teachers of 3- to 5-year-old mentally retarded children were found to be in a teacher-child ratio of 1:1 or 1:2 71% of the time. Teachers of 6- to 8-year-old mentally retarded children were found in a teacher-child ratio of 1:2 or 1:3 50% of the time.

The teacher to child ratio reduces the actual number of teachers of children in a group to a proportion. An additional question is whether or not teachers were working alone or with other teachers when with their group of children.

Table 2

Mean Proportion of Intervals Observed That Teachers in Three Groups Worked Alone, or with 1, 2, 3, or 4 Other Teachers

Group	Number of Other Teachers Working With				
	Alone	1 other	2 other	3 other	4 other
3-5 ND	.76	.13	.03	.08	0
3-5 MR	.61	.11	.17	.11	0
6-8 MR	.49	.23	.15	.10	.03

Note. Numbers represent the percentage of all intervals for each group in which the focal teacher was observed to be working alone, or with various numbers of other teachers. The total observational period for each subject was composed of ten intervals.

As shown in Table 2, teachers from each of the three groups were found to be working alone, or with other teachers, to different degrees. While teachers of the nondisabled were primarily working alone most of the time, both groups of teachers of the mentally retarded were found to be working with other teachers much of the time.

Teachers of 3- to 5-year-old nondisabled children were working alone 76% of the time. Data reported in Table 1 indicated that these teachers were also in a higher teacher-child ratio than teachers from the other two groups. Teachers of 3- to 5-year-old mentally retarded children were working with at least one other teacher 39% of the time. As reported in Table 1, these teachers were in a low teacher-child ratio most of the time. Teachers of 6- to 8-year-old mentally retarded children worked with one or more teachers a total of 51% of the time. As reported in Table 1, these teachers were usually overseeing two or three children.

Did Teachers Differ in Terms of Where They were Locating Their Group?

Patterns of interaction were thought to be potentially influenced by where teachers and children were observed. Table 3 reports where teachers and children were located when observed.

Table 3

Mean Proportion of Intervals Teachers in Three Groups were Observed With Children in Play Regions with Three Kinds of Environmental Boundaries^a

Group	<u>Environmental Boundary Quality</u>		
	<u>Rigid</u>	<u>Permeable</u>	<u>Open</u>
3-5 ND	.57	.37	.06
3-5 MR	.21	.58	.21
6-8 MR	.46	.38	.16

Note. Numbers represent the percentage of all intervals for each group in which teachers were observed to be in three kinds of play regions. The total observational period for each subject was composed of ten intervals.

^aThe environmental quality deemed important was the relative fluidity of the physical boundary around the area the teacher and children were located in. See Data Analysis in the chapter on Methods for criteria.

As Table 3 shows, teachers in each of the three groups were observed in different kinds of play regions. Teachers of the 3- to 5-year-old nondisabled children were most likely to be observed in play regions with rigid boundaries. These teachers were also found to be overseeing more children than the other two groups of teachers (Table 1), and were found to be mostly working without the assistance of other teachers (Table 2). Similarly, teachers of 6- to 8-year-old mentally retarded children were most likely to be observed in play regions with rigid boundaries, although they were usually overseeing fewer children (Table 1) and usually working with more teachers than teachers of 3- to 5-year-old nondisabled children. Teachers of the younger mentally retarded group were observed to frequent play regions with permeable

boundaries. These teachers were usually overseeing one or two children (Table 1) and were usually working alone (Table 2).

Did Teachers Differ In Their Direct or Indirect Participation In Children's Play?

Teachers were compared in terms of the frequency in which they engaged in directive or participatory exchanges. This was a measure of their role as an indirect or direct participant in children's play.

Table 4

Mean Proportion of Total Time in Exchange Sequences in Four Types of Exchange Categories for Teachers in Three Groups

<u>Exchange Category</u>					
<u>Participatory Exchanges</u>			<u>Directive Exchanges</u>		
<u>Group</u>	<u>Individual</u>	<u>Group</u>	<u>Individual</u>	<u>Group</u>	<u>Total</u>
3-5 ND	.19	.19	.22	.41**	1.0
3-5 MR	.38*	.21	.19	.23	1.0
6-8 MR	.19	.20	.41*	.20	1.0

Note. Numbers represent the mean percentage of time teacher spent in category in comparison to all time teacher spent in interaction. Percentages are based on time spent in a total of 739 exchanges for 3-5 ND group, 573 exchanges for 3-5 MR group, and 690 exchanges for 6-8 MR group. Significance is a comparison between groups in the same column.

* $p < .10$

** $p < .05$

As shown in Table 4, teachers differed according to the frequency in which they were observed in the four kinds of exchanges. Teachers of 3- to 5-year-old nondisabled children were observed in directive exchanges with groups of children most frequently (Mean = .41). This

was significantly more frequent than teachers of 6- to 8-year old mentally retarded children [$E(1, 18) = 4.26, p < .10$], and had a tendency to be more frequent than teachers of 3- to 5-year-old mentally retarded children [$E(1, 18) = 2.68, p < .25$]

Teachers of 3- to 5-year-old mentally retarded children were observed in participatory exchanges with individuals most frequently (Mean = .38), and this was significantly more frequent than both teachers of 3- to 5-year-old nondisabled children [$E(1, 18) = 3.48, p < .10$] and teachers of 6- to 8-year-old mentally retarded children [$E(1, 18) = 3.53, p < .10$]

Teachers of 6- to 8-year-old mentally retarded children were observed in directive exchanges with individuals most frequently (Mean = .41), and this was significantly more frequent than both teachers of 3- to 5-year-old mentally retarded children [$E(1, 18) = 5.93, p < .05$] and teachers of 3- to 5-year-old nondisabled children [$E(1, 18) = 3.72, p < .10$]

Did Teachers Differ In Terms of the Amount of Time They Interacted With Children, Their Rate of Interaction, or the Mean Length of an Exchange Sequence?

Table 5

Mean Length of Exchange Sequence, Mean Rate of Interaction, and Mean Proportion of Total Time Observed in an Exchange Sequence for Teachers of Three Groups

Group	Mean Length of Exchange ^a	Mean Rate of Interaction ^a	% Total Time In Exchanges
3-5 ND	4.5 ^b	8.4	.61** ^c
3-5 MR	3.9	8.3	.50
6-8 MR	4.6 ^b	9.3	.50

Note. Numbers represent group means. Significance is a comparison between groups in the same column. Numbers are based on time spent in a total of 739 exchanges for 3-5 ND group, 573 exchanges for 3-5 MR group, and 690 exchanges for 6-8 MR group.

** $p < .05$

^aNumbers represent seconds.

^bThese means tended to be greater than the mean for teachers of the 3- to 5-year-old mentally retarded children ($p < .25$), but did not differ from one another.

^cThis was found to be significantly different than teachers of 6- to 8-year-old mentally retarded group, but only tended to be greater ($p < .25$) than teachers of 3- to 5-year-old mentally retarded group.

Differences were found between groups in the percentage of total time spent in exchange sequence with children. An analysis of variance indicated that teachers of nondisabled children spent more of the total time observed in exchanges (Mean = .61) than teachers of 6- to 8-year-old children (Mean = .50), $F(1, 18) = 5.34$, $p < .05$, and there was a tendency to spend more time in an interactive exchange when compared to teachers of 3- to 5-year-old mentally retarded children (Mean = .50), $F(1, 18) = 2.37$, $p < .25$. There was no significant difference between

the two groups of teachers of the mentally retarded.

An analysis of variance indicated that groups did not differ in terms of the rate of interaction. The mean rate of interaction for teachers of the nondisabled children, and teachers of the younger and older mentally retarded children was: an exchange every 8.4 seconds, an exchange every 8.3 seconds, and an exchange every 9.3 seconds, respectively.

An analysis of variance indicated that there was a tendency for the three groups to differ in terms of the mean length of an exchange (in seconds). Teachers of the nondisabled children showed a tendency to engage in longer exchanges (Mean = 4.5 seconds) than teachers of the younger disabled group (Mean = 3.9 seconds), $F(1, 18) = 1.89$, $p < .25$, but did not differ from teachers of the 6- to 8-year-old mentally retarded children. The teachers of the older mentally retarded children (Mean = 4.6 seconds) tended to engage in longer exchanges than the younger mentally retarded children (Mean = 3.9 seconds), $F(1, 18) = 2.71$, $p < .25$.

Teacher Interviews

Teachers were interviewed to discover whether they expressed different goals when interacting with children. Differences in goals have been found to be related to different patterns of interaction (Mash, 1984).

Table 6

Mean Percentage of Expressed Goals in Each of Three Interview Response Categories for Teachers in Three Groups

Group	Interview Response Category		
	Educational	Activity	Supervisory
3-5 ND	.29	.31	.40**
3-5 MR	.39*	.32	.29
6-8 MR	.53**	.28	.19

Note. Numbers represent mean percentage of all interview responses for each group in each response category. Percentages are based on a total of 196 interview responses for 3-5 ND group, 211 interview responses for 3-5 MR group, and 210 interview responses for 6-8 MR group. Significance is a comparison between groups in the same column.

* $p < .25$

** $p < .05$

As shown in Table 5, teachers in each group were found to express different goals with different frequencies. Teachers of 3- to 5-year-old nondisabled children expressed supervisory goals most frequently (Mean = .40), and this was significantly more frequent than teachers of 6- to 8-year-old mentally retarded children [$E(1, 14) = 4.91, p < .05$], but was not significantly different than teachers of the 3- to 5-year-old mentally retarded children.

Teachers of 3- to 5-year-old mentally retarded children were found to express educational goals most frequently (Mean = .39). This tended to be more frequent than teachers of 3- to 5-year-old nondisabled children [Mean = .29; $E(1, 14) = 1.86, p < .25$] and tended to be less frequent than teachers of 6- to 8-year-old mentally retarded children [Mean = .53; $E(1, 14) = 2.26, p < .25$].

Teachers of 6- to 8-year-old mentally retarded children were found to express educational goals most frequently (Mean = .53), and this was significantly more frequent than teachers of 3- to 5-year-old nondisabled children [$F(1, 14) = 6.93, p < .05$], but only tended to be more frequent than teachers of 3- to 5-year-old mentally retarded children [$F(1, 14) = 2.26, p < .25$].

Setting the Stage: Rationale for Cross-Classification of Teachers

Table 7

Descriptive Table Summarizing Group Differences Between
Teachers In Three Groups

<u>Measure</u>	<u>Group</u>		
	<u>Teachers of 3-5 ND's</u>	<u>Teachers of 3-5 MR's</u>	<u>Teachers of 6-8 MR's</u>
<u>Most Frequent In Interaction</u>	<u>Direct groups</u>	<u>Participated with Individuals</u>	<u>Direct Individuals</u>
<u>Most Frequent In Interview</u>	<u>Supervisory goals</u>	<u>Educational goals</u>	<u>Educational goals</u>
<u>Teacher with # other teachers?</u>	<u>Work alone</u>	<u>Work with 1 or more teachers</u>	<u>Work with 1 or more teachers</u>
<u>T/C Ratio</u>	<u>Oversee 4 or more children</u>	<u>Oversees 1 or 2 children</u>	<u>Oversee 1 or 2 children</u>
<u>Environmental Boundary Quality</u>	<u>Play area=rigid</u>	<u>Play area=permeable</u>	<u>Play area=rigid</u>
<u>Rate of Interaction</u>	<u>Intervention every 8.4 sec.</u>	<u>Intervention every 8.3 sec.</u>	<u>Intervention every 9.3 sec.</u>
<u>Mean Length of Exchange</u>	<u>4.5 sec.</u>	<u>3.9 sec.</u>	<u>4.6 sec.</u>
<u>% Total Time in Interaction</u>	<u>61% of total time Intracting</u>	<u>50% of total time Interacting</u>	<u>50% of total time Intracting</u>

Table 5 provides a useful summary of the differences between groups reported thus far. Teachers of nondisabled children were usually working alone, and overseeing four or more children. These teachers were found to engage in directive exchanges with children most

frequently, and expressed supervisory goals most often during the interview. The teachers were located in play regions characterized by rigid environmental boundaries, perhaps to assist in the teacher's attempt to supervise the children. For these teachers, the play setting, as evidenced in their interactions and interview, is largely a supervisory setting.

In contrast, teachers of the younger mentally retarded children were usually working with at least one other teacher, and each teacher was responsible for one or two children. Within these small groups, teachers participated with children in face-to-face exchanges most of the time and expressed educational goals most frequently during the interview. Perhaps as a result of the small size of these groups, teachers and children were usually located in play regions characterized by permeable boundaries. For these teachers, the play setting presented an opportunity to educate individual children.

Teachers of the older mentally retarded children were also usually working with at least one other teacher, and each teacher was usually responsible for one or two children. These teachers present a somewhat mixed picture, though, in that they spoke of their educational goals during the interview, but were observed to engage in mostly directive exchanges with individual children. The qualitative analysis will further clarify the nature of this relationship.

On the basis of the reported findings thus far, the picture that emerges is consistent with that of past research. Teachers of the mentally retarded are more educationally oriented when engaged with children than teachers of the nondisabled (Mash, 1984; Stoneman et al.,

1983). These findings suggest that teachers of the mentally retarded are attempting to influence the child's play and development, while teachers of the nondisabled provide a setting, manage the children when in the setting, but are not as directly involved in the content and quality of a child's play.

While the findings indicate differences between groups, one problem that emerged was that individual teacher profiles did not necessarily reflect that of their group's. Variation among individuals was not solely a result of quantitative differences, though; it was also due to qualitative differences between teachers in the same group. For example, the analysis of variance indicated that teachers of the younger mentally retarded children only tended ($p < .25$) to express educational goals more often than teachers of nondisabled children. An analysis of the profiles of individual teachers indicated that a greater difference between groups was not found because of great variation among the teachers of the mentally retarded. Of the seven teachers in this group, three reported educational goals most often, two reported activity goals most often, and two reported supervisory goals most often. Thus, the interview data suggested that each of the three groups, defined by the status of the child (mentally retarded or nondisabled), was not as homogeneous as one might expect. Qualitative differences between teachers were evident, but were being masked by the quantitative comparison.

The combination of interview data and interactive data suggested that individual teachers in the same group, in expressing different goals with different frequencies, were defining the play situation

differently, and in addition, that individual teachers from different groups, in expressing similar goals with similar frequencies, were defining the play setting similarly.

As discussed in the review of literature, Schneider and Gearhart (1988) argue that the caretaker's goals are critical for understanding the meaning behind patterns of interaction. Furthermore, it is difficult to assess the teacher's impact on the child without some measure of the relationship between the teacher's interventions and the child's focus. When pursuing educational, activity, or supervisory goals, was the teacher facilitating or enhancing the child's play, or was the teacher somehow hindering or constraining their play?

In order to investigate this question a mechanism for classifying teachers according to their goals was necessary. Rather than grouping teachers according to the status of the child (mentally retarded or nondisabled), grouping was based on the most frequent interview response type and most frequent exchange category. For each teacher, the most frequent interview response type was cross-classified with the two major exchange categories: directive or participatory exchanges.

Cross-Classification

Table 8

Cross-Classification of Teacher's Most Frequently Expressed Goal and Most Frequently Observed Exchange Category^{ab}

Most Frequent Exchange Category	<u>Teachers Most Frequently Expressed Goal</u>			<u>Total Number of Teachers</u>
	<u>Educational Goals</u>	<u>Activity Goals</u>	<u>Supervisory Goals</u>	
Participatory Exchanges	3 3-5 MR T's 1 6-8 MR T	2 3-5 MR T's 2 6-8 MR T's 3 3-5 ND	0 T's	11 Teachers
Directive Exchanges	5 6-8 MR T's	0 T's	2 3-5 MR T's 5 3-5 ND T's	12 Teachers
Total Number of Teachers	9 Teachers	7 Teachers	7 Teachers	23 Teachers

Note. Each subject was cross classified according to their most frequently expressed goal during the interview, and the most frequently observed exchange category.

^aThe appendixes contain tables detailing each subject's profile that was used as a basis for the cross-classification.

^bDue to the refusal of certain teachers to be interviewed, the cross-classification of teachers, and the subsequent analyses, only included 23 teachers. For a fuller explanation, see endnotes ¹ and ².

As shown in Table 7, of the 11 teachers who engaged in participatory exchanges the majority of time, four teachers expressed educational goals most frequently during the interview, seven teachers expressed activity goals most frequently, and there were no teachers who expressed supervisory goals most frequently. Only teachers of the mentally retarded children pursued educational goals most frequently.

Of the 12 teachers who engaged in directive exchanges the majority of time, five expressed educational goals most frequently during the

Interview, seven expressed supervisory goals most frequently, and no teacher expressed activity goals most frequently. Again, only teachers of the mentally retarded children stressed educational goals most frequently.

On the basis of the above cross-classification, two separate comparisons were undertaken. The first compared teachers who talked most frequently about either their educational or activity goals during the interview, but in both cases spent a majority of time in participatory exchanges. When engaged in participatory exchanges, what is the difference, if any, between teachers who pursued these two different kinds of goals? The second compared teachers who talked most frequently about either their supervisory or educational goals during the interview, but in both cases spent a majority of their time in directive exchanges. When engaged in directive exchanges, what is the difference between teachers who pursued these two different kinds of goals?

The following are descriptive statistical comparisons of the groups that resulted from the cross-classification.

Table 9

Mean Percentage of Expressed Goals In Each of Three Interview
Response Categories for Teachers with Similar Profiles

<u>Interview Response Category</u>			
<u>Group^a</u>	<u>Educational</u>	<u>Activity</u>	<u>Super</u>
Participatory- Educate	.55	.28	.17
Participatory- Activity	.30	.53	.17
Directive- Educate	.64	.17	.17
Directive- Supervisory	.26	.13	.61

Note. Numbers represent mean percentage of all interview responses for each group in each response category. Percentages are based on a total of 108 Interview responses for P-E group, 163 Interview responses for P-A group, 149 Interview responses for D-E group, and 189 Interview responses for D-S group.

^aEach group is characterized according to the pairing of the dominant exchange and Interview category. For each pair the top line is the exchange category, and the bottom line is the Interview category.

¹For the purposes of discussion, the four groups that resulted from the cross-classification will be referred to in the following fashion:

Those teachers that were found to engage in focused exchanges the majority of time, and who expressed educational goals most frequently during the Interview will be labeled Participatory-Educate.

Those teachers that were found to engage in focused exchanges the majority of time, and who expressed activity goals most frequently during the Interview will be labeled Participatory-Activity.

Those teachers that were found to engage in supervisory exchanges the majority of time, and who expressed educational goals most frequently during the Interview will be labeled Directive-Educate.

Those teachers that were found to engage in supervisory exchanges the majority of time, and who expressed supervisory goals most frequently during the Interview will be labeled Directive-Supervisory.

One of the criteria used in the cross-classification of teachers was the frequency with which they expressed one of the three interview response categories. As shown in Table 8, the two groups, Participatory-Educate and Directive-Educate, expressed educational goals more frequently (Means are .55 and .64 respectively) than the other two interview categories. Teachers in the Directive-Supervisory group expressed supervisory goals most frequently (Mean is .61), and the teachers in the Participatory-Activity group expressed activity goals most frequently (Mean is .53).

Table 10
Mean Proportion of Total Time in
Directive or Participatory Exchanges for
Teachers with Similar Profiles

Group ^a	Exchange Category	
	Participatory Exchanges	Directive Exchanges
Participatory Educate	.77	.23
Participatory Activity	.78	.22
Directive-Educate	.21	.79
Directive-Supervisory	.13	.87

Note. Numbers represent the mean percentage of time the teacher spent in category in comparison to all time teacher spent in interaction. Percentages are based on time spent in a total of 279 exchanges for the P-E group, 501 exchanges for the P-A group, 356 exchanges for the D-E group, and 447 exchanges for the D-S group.

^aEach group is characterized according to the pairing of the dominant exchange and interview category. For each pair the top line is the exchange category, and the bottom line is the interview category.

The second criteria that was used for the cross-classification of teachers was the relative frequency at which they engaged in participatory or directive exchanges with children. As shown in Table 9, the Participatory-Educational group and the Participatory-Activity group were engaged in participatory exchanges the majority of time (Means are .77 and .78 respectively). The Directive-Educational group and the Directive-Supervise group were engaged in directive exchanges

the majority of time (Means are .79 and .87 respectively).

Table 11
Mean Proportion of Intervals Observed in Various Teacher to Child
Ratios for Teachers with Similar Profiles

Group	<u>Teacher to Child Ratio</u>			
	1:1	1:2	1:3	1:4 or more
Participatory-Educate	.53	.28	.07	.10
Participatory-Activity	.05	.33	.30	.32
Directive-Educate	.22	.36	.22	.20
Directive-Supervisory	0	.14	.41	.44

Note. Numbers represent the percentage of all intervals for each group observed in different teacher-child ratios. The total observational period for each subject was composed of ten intervals.

As shown in Table 10, the four groups of teachers differed in terms of the teacher-child ratios in which they were observed. Those teachers in the Participatory-Educate group were observed in a 1:1 ratio 53% of the time. No other group neared this frequency. The Participatory-Activity group and the Directive-Supervisory group were observed in a 1:3 or 1:4 or more teacher to child ratio 62% of the time and 85% of the time respectively. In addition, both groups were rarely, if ever, observed in a 1:1 ratio. The Directive-Educate group presented mixed findings. While they were found in a 1:1 ratio 22% of

the time, they were fairly evenly distributed across all teacher to child ratios.

Table 12

Mean Proportion of Intervals That Teachers with Similar Profiles Worked Alone, or with 1, 2, 3, or 4 Other Teachers

Group	Number of Other Teachers Working With				
	Alone	1 Other	2 Other	3 Other	4 other
Participatory-Educate	.85	0	.08	.08	0
Participatory-Activity	.60	.13	.13	.14	0
Directive-Educate	.46	.22	.10	.16	.06
Directive-Supervisory	.50	.20	.19	.11	0

Note. Numbers represent the percentage of all intervals for each group in which the focal teacher was observed to be working alone, or with various numbers of other teachers. The total observational period for each subject was composed of ten intervals.

As shown in Table 11, the Participatory-Educate teachers were working alone 85% of the time and the Participatory-Activity teachers were working alone 60% of the time. Directive-Educate teachers were working with at least one other teacher 54% of the time, while Directive-Supervisory teachers were working with at least one other teacher 50% of the time.

Teachers Who Engaged In Participatory Exchanges: The Distinction
Between Educational Goals and Activity Goals

As detailed in the review of literature, caretaker goals have been found to be related to how caretakers interact with children. The critical dimension of interaction is whether or not teachers are aligned with the child's focus.

Table 13

Mean Proportion of Exchanges Coded as Aligned, Not Aligned, Breach, or Ambiguous for Teachers Who Engaged In Participatory Exchanges

Group ^a	Aligned	Not Aligned	Breach ^b	Ambiguous
Participatory-Educate	.31	.51*	.08	.11
Participatory-Activity	.72*	.07	.10	.09

Note. Numbers represent the mean percentage of all time spent in each category in comparison to all time teacher spent in interaction. Percentages are based on time spent in a total of 279 exchanges for the P-E group and 501 exchanges for the P-A group. Significance is a comparison between groups in the same column.

* $p < .001$

^aEach group is characterized according to the pairing of the dominant exchange and interview category. For each pair the top line is the exchange category, and the bottom line is the interview category.

^bTwo teachers in the Directive-Educate group, both observed in similar activities and settings, were found to engage in a large number of breach exchanges. For this reason, breach exchanges are displayed as a separate category.

As shown in Table 10, teachers who were observed in participatory exchanges most often, and expressed educational goals most frequently during the interview, were found to be not aligned with children (Mean

= .51) significantly more often than teachers who were observed in participatory exchanges most often but expressed activity goals most frequently (Mean = .07), $F(1, 9) = 38.66$, $p < .001$. The Participatory-Activity teachers, on the other hand, were found to be aligned with children significantly more often (Mean = .72) than the Participatory-Educate Teachers (Mean = .31), $F(1, 9) = 24.36$, $p < .001$. There was no significant difference between these two groups of teachers in their frequency of engaging in ambiguous or breach exchanges.

Teachers Who Engaged in Directive Exchanges: The Distinction Between Educational Goals and Supervisory Goals

Table 14

Mean Proportion of Exchange Sequences Coded as Aligned, Not Aligned, Breach, or Ambiguous for Teachers Who Engaged in Directive Exchanges

Group ^a	Aligned	Not Aligned	Breach ^b	Ambiguous
Directive-Educate	.49	.16	.13	.22
Directive-Supervisory	.47	.30*	.06	.16

Note. Numbers represent the percentage of all exchanges in each category for each group. Percentages are based on time spent in a total of 356 exchanges for the D-E group, and 447 exchanges for the D-S group. Significance is a comparison between groups in the same column.

* $p < .05$

^aEach group is characterized according to the pairing of the dominant exchange and interview category. For each pair the top line is the exchange category, and the bottom line is the interview category.

^bTwo teachers in the Directive-Educate group, both observed in similar activities and settings, were found to engage in a large number of breach exchanges. For this reason, breach exchanges are displayed as a separate category.

As Table 11 shows, the only significant difference between Directive-Educate teachers and Directive-Supervisory teachers was that the latter group was found to be not aligned with children more often than the former group (Means = .30 and .16 respectively), $F(1, 10) = 8.07$, $p < .05$.

CHAPTER V

QUALITATIVE FINDINGS

The discussion of the results of the cross-classification of teachers, and the comparison of teacher-child interactions, will proceed by qualitatively comparing groups. This qualitative discussion of the findings will be reviewed in two major sections.

The first section will compare Participatory-Educate teachers and Participatory-Activity teachers. While the teachers were all found to be involved in participatory exchanges the majority of the time, some of the teachers talked mostly of their educational goals during the interview, while others talked mostly of their activity goals. What is the difference between these two groups? Are they only talking differently during the interview, but actually interacting similarly, or are differences in interview talk revealing differences in the interactions.

The second section will compare Directive-Educate teachers and Directive-Supervisory teachers. All of these teachers were found to be involved in directive exchanges the majority of the time, but some of the teachers talked mostly about educational goals during the interview, while others talked mostly about their supervisory goals. What is the difference between these two groups? Are they only talking differently during the interview?

Teachers Who Engaged In Participatory Exchanges: The Distinction
Between Educational and Activity Goals

Teachers who were involved in participatory interactions with children were directly involved in the content and quality of the children's play. Teachers were sitting with or standing next to children and participating in what they did. The teachers differed though, according to how they defined the play setting. Seven teachers defined the setting in terms of the activity being pursued, while four teachers defined the setting in terms of the educational goals they were pursuing. These differing definitions were associated with the different frequencies with which the teachers were found to be aligned with children.

The group of 4 teachers who defined the play setting in terms of the educational goals they were pursuing were found to be aligned with children the least of all teachers (31% of the time) and were found to be not aligned with children the most frequently of all teachers (51% of the time). These teachers were defining the play setting as an opportunity to teach the child something, often something that was drawn from their current classroom curriculum. The playground became an "outdoor" classroom. The children's actions were not oriented to for the purpose of extension or elaboration, but for their potential use in pursuing an educational agenda. The child's actions on objects were the raw materials or props that were used in the pursuit of classroom-like exercises.

The group of 7 teachers who defined the play setting in terms of the activity goals they were pursuing, on the other hand, were found to be aligned with children significantly more frequently than any of the

other groups of teachers (72% of all exchanges were aligned). They were also found to be non-aligned with their children the least of all groups (7% of all exchanges were non-aligned). The most striking feature of these teachers, in contrast to all the other teachers in the sample, is that they appeared in their interactions with the children, and presented themselves during the interview, as participants in the children's play. In their words, they were "just": building sand castles, playing follow the leader, or "fooling around."

While they may have been a participant, they nevertheless intervened, at times, as a person who was more knowledgeable or more skilled at an activity than the children. Yet, when intervening these teachers were able to maintain their alignment with the child's focus while at the same time, provide the level of assistance the child may have required. In the discussion of those teachers who were primarily pursuing educational goals while in participatory interaction with children, it will be noted that the child's focus was intruded upon in the effort to provide a cognitively or socially "stimulating" experience. Teachers pursuing activity goals, on the other hand, were able to provide such an experience for the child, but at the same time maintain their alignment with the child. This was true even for those 4 teachers included in this sub-group who were interacting with mentally retarded children.

Examples will indicate: 1) During the interactions and interview the teacher was oriented to the child's focus as a participant; 2) The teacher was able to maintain her alignment with a child during moments when teachers from other groups were unable to do the same. It is

argued that because the teacher was orienting to the child's focus as the primary phenomenon, the teacher was promoting their development more effectively than those teachers who were pursuing educational goals.

The first set of examples will show prototypical examples of Participatory-Educate teachers, followed by Participatory-Activity teachers. It is argued that Participatory-Educate teachers monitored their children's actions for opportunities to engage the children in teaching exercises. The teacher was less concerned with the child's focus as an object of elaboration and extension, and more concerned with the child's focus as an opportunity to diagnose, work on, or stimulate an underlying (in)capacity. The child was not treated as accomplishing or pursuing a line of action that had merit. The child's focus was oriented to only to the extent that it provided the teacher with an initial point of departure for accomplishing her agenda. The high frequency of non-aligned exchanges was not a result of the child's lack of action, but a result of the teacher's goal of educating. The child's focus was rendered unimportant, irrelevant, or problematical by the teacher's educational agenda. The high frequency of non-aligned exchanges was a result of the teacher's efforts to create a focus that was explicitly educational.

The second set of examples are of the group of teachers who stressed activity goals when in participatory interactions with children. In some cases, examples from Participatory-Educate teachers will be re-examined to highlight the difference between these two groups.

Participatory-Educate Teachers

Example 1. MW (Teacher of 3- to 5-year old mentally retarded children): Teacher (T) and child (J) are sitting opposite one another. They are in an open space surrounded by toys that are used for constructing things--pieces of Lego, Lincoln Logs, etc. J is stacking oversized Lego pieces to make a box-like construction. The pieces are of different colors. The teacher turns to J and initiates the following:

Transcript of Interaction

J: (Putting Lego piece on construction)
 T: What color--
 Where's the red block?
 J: (Points to green block)
 T: Red
 (Points to red block)
 J: (Reaches for another Lego block)
 T: Look at red (points)
 J: (Looks)
 T: Red block
 (Puts white block on J's construction)
 White
 J: (Looks at T)
 T: Say "white"
 J: (Presses piece down onto construction,
 not responding)
 Another child enters the scene and the
 teacher turns to him.

Transcript of Interview

"Red is basically the only color J. knows and I was trying to see if she could recognize it outside the classroom."

"She's working on the color red, so I'm trying to reinforce the color red."

As shown in Example 1, the child's line of action--the stacking of Lego pieces--was not the target of the teacher's intervention. The teacher was not elaborating or building on the child's focus, but initiated an alternative line, one that used the child's interest as an opportunity to question and correct the child's knowledge of color. The child was required to respond to the teacher's line of questioning and demonstrate or display her knowledge of color terms. The teacher's line of inquiry was organized around the child's apparent deficient conceptual abilities, and was aimed at eliciting or diagnosing the

presence of the deficit. The child's focus was secondary to the accomplishment of the teacher's agenda.

Example 2. SS (Teacher of 3- to 5-year old mentally retarded children): Teacher (T) and child (L) are both standing in front of a chest-high (to the child) sandbox. The teacher is standing behind L, watching what he does. L is pushing an ice cube tray back and forth in the sand. The teacher intervenes to draw his attention to the imprints the ice cube tray has left in the sand. She refers to the imprints as a "train."

Transcript of interaction

Transcript of interview

L: (Moving ice cube tray in sand)
 T: Look at this one (points to Imprint)
 L: (Looks)
 T: But look
 Look at your train
 (Takes L's hand and moves it over
 imprint)
 L: (Looks at T)
 T: This train is nice and sm--
 L: Smooth
 T: But what about this one you have here?
 How does that feel?
 (Runs L's hand over Imprint)
 How does that feel?
 L: Rough
 T: Yea
 Rough, right?
 L: (Turns away)

"The idea of different textures
 with him"

As described in Example 2, the child had been pushing an object through the sand. His line of action was not the target of the teacher's intervention. The teacher curtailed the child's focus by taking his hand and moving it over an imprint. The teacher's alternative line was organized around the child's apparent deficient verbal abilities. The child was required to display his knowledge by responding to the teacher's questions. The child was faced with a

choice of resisting the teacher's intrusion, or responding to her questions. He moved from determining his own play to being determined by the teacher's agenda.

Example 3. MW (Teacher of 3- to 5-year old mentally retarded children): The teacher (T) and child (J) are sitting in an open area surrounded by construction toys of various kinds. The child is stacking large Lego pieces, making a tower-like structure. The teacher starts to build a similar structure, and intervenes to draw J's attention away from what J is building and toward her own (T's) building.

Transcript of Interaction

Transcript of Interview

J: (As she puts a Lego piece on her tower
a different piece falls off)
T: (Takes piece that has fallen,
attaches to her own piece on ground)
Look at the house
J: (Looks toward ground for another piece
of Lego)
T: (Lifts Lego piece in front of J's
eyes, then lets fall to ground)
Big
J: (Looks at Lego piece as it nears
ground)
T: Make big
(Puts piece on own construction)
(T's attention is drawn away by
another child)

"I'm working on the concepts of
big and little with her, and
her skills are lower than her
age."

Example 3 shows that as the child was stacking Lego pieces, the teacher attempted to draw the child into an alternative line of action, one that was centered on the teacher's Lego construction. The teacher attempted to accomplish this move by picking up a Lego piece that the child could use, holding it in the child's field of vision, and drawing the child's attention toward what the teacher is building. As she did so, she emphasized the word, "big."

The teacher linked her emphasis on the word "big" to her current

attempts to teach J the meaning of "big" and "little." As such, she was expressing an educational goal. The teacher's intervention attempted to draw J away from her focus on building to the teacher's focus on building something "big." The teacher provided an alternative focus to the child's that acted as the vehicle for the teacher's educational agenda.

For the teacher, the child's focus was something to draw the child out of. The teacher's line of action was organized around the child's deficient conceptual abilities, and discounted the child's focus in the pursuit of the educational agenda.

Example 4. GC (Teacher of 3- to 5-year old mentally retarded children): A teacher (T) and child (M) are in a sandbox. They are building a sand castle together. The child and teacher are filling a pail with sand.

Transcript of Interaction

C: (Putting sand in pail)
 T: Push it down now M
Push the sand down so we can make a nice castle
 C: (Continues to put sand in pail)
 T: (Takes M's pail and his hand and presses hand into sand)
 Here push it
Push it hard
Push
 C: (Pushes)

Transcript of Interview

"I'm trying to get him to talk. He's not a verbal child. I think he talks a little bit, but not too much."

In example 4, the teacher intervened on the child's focus on filling up the pail to get him to link the act of pushing the sand down into the pail with the word "push." The making of a sand castle thus provided the opportunity for the teacher to engage the child in a

language learning task. Yet, the teacher's educational agenda took precedence over the child's focus. The teacher did not time the intervention to coincide with the child's act of pushing. Rather, the teacher intervened to mismatch the child's act (taking the child's hand and pushing it down into the sand) in the effort to create the conditions under which the teaching of the word "push" was appropriate. The goal of getting the child to talk provided the immediate justification for intervening and mismatching the child's actions. In orienting to the child's deficient verbal abilities, the child's focus was interrupted for the educational agenda.

Example 5. JD (Teacher of 6- to 8-year old mentally retarded children); The teacher (T) and child (C) are at the slide. The teacher has been "catching" C at the bottom of the slide. The child has just finished a slide, and is at the bottom collecting all the mats that are lying there. He picks up one and hands it to the teacher.

Transcript of Interaction

Transcripts of Interview

C: Hold the mat?
 (Handing T a mat)
 T: (Takes mat)
 What do you want me to do?
 C: Use them
 T: Use them how?
 C: Let's make a--
 Let's make--
 Let's make a big slide
 T: Well you don't have enough people here
 for that
 C: Hey
 Let's get a couple of people
 I'm gonna get a couple of people
 (Starts to get off slide)
 T: (Blocks C's exit with arm)
 Yea but listen
 I think they're having fun what
 they're doing
 C: Alright
 T: Alright?
 So if they don't really want to do it
 we can't force them
 Right?
 C: Right
 T: OK

"He wanted other people around him which is a major problem with M. He'll go and try to grab somebody to do something they don't want to do, and he has to understand that he can't do that. I say, "Look, they're having fun doing what they're doing, you're having fun doing what you're doing, let it go."

Example 5 shows that the teacher did not align herself with the child's plan for gathering other children to slide with. The child's plan was treated as indicative of his underlying problem--his lack of respect for other children's play. The child was not understood as attempting to extend his play in a manner that might be appropriately accomplished. The child's plan was treated as being part of his problem, and therefore it was prevented from occurring. In orienting

to the child's "problem" the teacher's agenda took precedence over the child's plan.

Example 6. SS (Teacher of 3- to 5-year old mentally retarded children): Two children (K and L) and a teacher (T) are in the sandbox. K and L are both filling up trucks with sand.

Transcript of Interaction

K: (Filling truck with sand using an ice cube tray)
 T: Can you think of something that can help you put the sand in there quicker? (points to K's truck)
 K: (Looks at T, then begins to fill truck again)
 T: K, watch this
 (Takes K's ice cube tray from him)
 You can help L by putting the sand in the truck
 (Puts bucket in K's hand)
 Taking the bucket we used to make the letters of the alphabet
 (Pushes K's hand holding the truck through the sand)
 Yup look at that
 What do you have inside?
 K: (Looks inside bucket)
 (Moves to dump sand into his truck)
 T: Oh look
 Help L
 (Takes K's hands, steers bucket to L's truck)
 Help him
 K: (Dumps sand)
 T: What did he use L?
 (Points at sand)
 L: (Looks at truck)
 Another child asks a question that puts an end to the sequence

Transcript of Interview

"I was experimenting with a lot of vocabulary that I hadn't used with him"

In example 6, the teacher intervened to mismatch K's focus and she effectively usurped K and L's play. Her sequence of interventions were oriented toward getting either or both children to connect the word

"bucket" with the object. The children's focus on filling the trucks was redirected in the effort to create a situation that was related to her experiment in vocabulary usage.

If the children did not know the word "bucket," or if they had difficulty in providing a label for an object, it is difficult to understand how the teacher's intervention provided them with an experience that will enable them to connect the object with the word. She asked L, and later K, to supply the label for the object. Assuming they have difficulty with such requests, then her elicitation only functioned to recreate the "fact" of their difficulty. If they were to express the need for an object to fill the trucks, or if they were using a bucket for filling, then the teacher might emphasize the word in her effort to enlarge their vocabulary. The teacher was working within a pedagogical framework, and the children's focus functioned as a prop that was redirected to fit the requirements of the teacher's agenda. The children were forced to align themselves with the teacher, and it was the teacher who intervened to get them to do so.

Summary. Participatory teachers were found to be not aligned with children 51% of the time they were involved in exchanges. The examples indicate that when a teacher did not align herself with the child, she was orienting to the child's deficit. The teacher initiated an alternative line to that of the child's, one that attempted to redirect the child toward a focus that was organized around an educational agenda.

Participatory-Activity Teachers

The next set of examples are of teachers who pursued activity goals while in participatory exchanges with children. These teachers aligned themselves with the child's focus, and extended, elaborated upon, and participated in that focus. The first three examples are intended to convey the teacher's orientation to the child's focus as something in which to participate. The ensuing examples indicate how these teachers were able to pursue their goals while maintaining their alignment with the child. Similar exchanges from teachers who pursued educational goals are re-examined to show how their orientation to the child's disability was associated with interventions that were not aligned with the child.

Example 7. DH (Teacher of 3- to 5-year old mentally retarded children): Teacher (T) and child (R) are climbing through the monkey bars playing follow the leader. The teacher switches gears and tells R that she is now going to "catch" him.

Transcript of Interaction

R: (Climbing through bars)
 T: There's R
 I'm gonna go this way and see if I can
 catch up to you
 R: (Looks at T)
 T: (Standing opposite R, separated by a
 bar, begins to feign left then right)
 Which way?
 R: (Moves to right)
 T: (Pursuing)
 Here we go
 Gotcha!
 (Catches R)

Transcript of Interview

"I'm having a little fun
 myself. Sort of trying to
 motivate the child further as
 far as a little pursuit there,
 and picking up the pace."

As shown in Example 7, the teacher elaborated on an ongoing line

of action--climbing through monkey bars--so that it became a game of chase-and-be-chased. The teacher maintained the engagement while extending it a step further. The teacher was not oriented to the child as being mentally retarded, but was oriented to the content of what they were doing.

Example 8. MF (Teacher of 3- to 5-year old mentally retarded children): Teacher (T) is walking in front of a child (J) while holding both of his hands. T pretends not to know where J is, and begins to "search" for him.

Transcript of Interaction

J: (Standing behind, holding both T's hands)
 T: Now who's this behind me?
 Who's this behind me?
 J: (Hides face in T's back)
 T: Walks forward with J in tow)
 Where's J?
 I can't find J
 Where's J?
 He must have gone.

Transcript of Interview

Now I'm playing this game with J. He's behind me, following me, and I'm asking around where he is, because I know that it just takes a couple of words like that and J will just break up laughing. He thinks it's hilarious, and you know he gets beyond himself over things like this, and he's already leaning back because he's laughing like crazy."

In example 8, the teacher initiated a game with a child that was an elaboration of their walking together. While maintaining their engagement, and orienting to a feature of it (that they are holding hands and are one behind the other), the teacher extended the line so that it became humorous. As in the previous example, the teacher was not orienting to the child as being mentally retarded, but to the child as a participant.

Example 9. DL (Teacher of 6- to 8-year old mentally retarded children): The teacher (T) and a group of children (C's) have been tumbling about in the mats. Having just freed herself from being under a pile of children, T gets up on her knees and moves toward a nearby child (U).

Transcript of Interaction

T: (On knees, walking toward U)
 OK, I'm going to get U!
 Rrrrr!
 (Monster motion and sound)
 U: (Moving back)
 T: (captures U)
 U: (Falls down)
 C's: (Start climbing on top of T and U)
 T: Rrrrr!
 The space monster is eating him up
 C's: (Continue to pile on)
 T: You got to save U!
 I'm eating him up
 C's: (Continue to pile on)
 T: Help!
 (Laughing)
 C: Jump on
 Jumping and laughing continue

Transcript of Interview

"Basically I'm just trying to have a good time with them. When I see them happy that makes me happy and that they can play with me also means they always don't have to look up to me as somebody who's always going to tell them what to do or scold them."

As shown in Example 9, the teacher's comments during the interview reveal her orientation to being a participant in "a good time." Her initiation and later announcement of being a space monster is an extension, or elaboration on, tumbling about the mats. That the children are mentally retarded is not material; they are participants to be engaged.

Example 10. DH (Teacher of 3- to 5-year old mentally retarded children): Teacher (T) and child (B) are on the monkey bars, climbing together. Another child (S) is near by on a slide.

Transcript of interaction

T: (Momentarily pauses while moving through bars)
 B: (Passes T)
 C'mon T
 T: Yes B
 (Starts moving)
 B: Let's get S
 T: What?
 B: Let's get S
 T: (Looks to slide where S is)
 Let's get S?
 B: Yes
 T: Well she's up on the slide now
 (Calling to S)
 C'mon
 B: (Stops and watches T)
 T: B wants to play with you
 And so do I
 We want to play with you
 B: (Starts to move through bars again)
 S: Not yet
 T: Not yet?
 Well you come and join us when you're ready
 (Rejoins B in moving through bars)

Transcript of interview

"That was neat that he initiated the action to try to go to her because we've been trying to promote his initiative to get involved with the other kids."

As indicated in Example 10, during the interview, the teacher noted that one of the goals for this particular (mentally retarded) child was to foster his involvement with other children. The child expressed the desire to include S in their play in the midst of climbing through the monkey bars with the teacher. In the context of his stated interest, the teacher pursued her educational goal. The goal was not pursued at other moments when it might have been an intrusion. The educational goal was aligned with the child's focus.

It is interesting to note that a different teacher discouraged a

similar intent, also expressed by a mentally retarded child, when on a slide. In Example 5 of JD, the child was sliding, and the teacher was "catching" him. When the child announced the desire to collect other children to slide with, the teacher prohibited him from moving off the slide. She explained that other children were doing what they wanted to do, and therefore he could not intrude upon their play just because he would like them to slide. The teacher also explained her intervention, during the interview, in terms of its educational goal: one of the child's problems was that he railroaded children into joining his activities. Anticipating that his stated intent would take the form of "bullying" behavior, she successfully prevented him from carrying out his plan.

Why the difference between the teachers' interventions? Why does one teacher accomplish an educational agenda without compromising her alignment with the child, while the other does not? The argument is that in Example 5, JD was primarily oriented to the fact the child was disabled. She was not participating in an encounter with a child as much as she was engaged in an encounter with a child-who-was-disabled. In the example cited, impacting on the disability entailed anticipating and preventing it from actually occurring. The child was being "educated" by explaining why he wanted to do. It is argued, though, that her educational goal was not effective since she did not show the child how he might persuade another child to participate in sliding while still respecting the other child's potentially negative response.

In Example 10, DH accomplished an educational goal while preserving her alignment with the child's stated intent. Her timely

intervention, when she called S to see if she would like to join their play, attempted to both extend the play to include an additional participant and support her own educational goal.

Example 11. MB (Teacher of 3- to 5-year old nondisabled children): A child (C) is building a sand castle with a teacher (T) close by. They are both hovering over the pail that is filled with sand and is dumped upside down. The child is about to unveil the castle.

Transcript of Interaction

C: (Hands on both sides of pail, about to pick it up)
 T: Now pick it up
 C: (Maneuvers pail slightly, then looks up at T)
 I can't
 T: (Putting hands on side of pail)
 OK, ready?
 We'll do it together
 C: (Picks up pail, with T's hands on it)
 (Beholds castle, looks at T)
 T: (Taps C's nose)
 You did it!

Transcript of Interview

"When we did it together, I didn't lift it up, I just put my hands on it. She lifted it up herself. All she thought was she needed help, but all I did was hold it."

In example 11, the child and teacher were engaged in making sand castles. When the child expressed the inability to lift up a pail, the teacher provided a measured response. The teacher maintained a balance between her judgement that the child was capable of lifting, and the child's judgement that she was not. The alignment was maintained.

In contrast, as shown in Example 6, SS pursued an educational goal while engaged in sand play with L. When the child was filling a truck with sand, the teacher intervened to ask if the child could think of anything that might help him to fill the truck quicker. The exchange became "educational" in the sense that the teacher knew the answer to

the question she was posing to the child, and it was the child's task to locate the appropriate response. The child's focus was serving only as a set of stimuli, or props, that could be used in a teaching exercise. The child's actions were not the object of the teacher's focus; what had merit was the teacher's goal of impacting on the child's deficient conceptual abilities.

Example 12. CC (Teacher of 3- to 5-year old nondisabled children): Teacher (T) and a group of children are making sand castles. They are taking turns dumping and revealing the castle. A child (C) brings her pail over to the display area, and prepares it for dumping. Next to her is another child (J) who has been systematically destroying everybody's castle.

Transcript of Interaction

C: (Places pail full of sand in front of T)
 T: Now C!
 C: (Dumps pail)
 T: OK
 C: (Picks up pail)
 (Looks at T)
 T: Hooray--
 J: (Destroys castle)
 T: (Throws up hands)
 We'll do it over there so J won't ruin them (pointing)
 OK?
 C: (Looking to where T points)
 Yea
 T: J likes to break our castles
 C: Yea

Transcript of Interview

"That was the thing about J that I noticed. It really wasn't interfering with their play, nobody was focusing on that, so I didn't want to stress it."

In example 12, the teacher intervened initially to align herself with C's unveiling of her castle, and then maintained the alignment in suggesting a new location, away from J, where the castles could be safely built. In her comments, the teacher indicates that since the

children were not objecting to J's destructive behavior she did not feel compelled to tell him to stop. The participants and their focus provided the framework for defining which acts were and were not problematical; the teacher was able to define J's destructiveness as another contribution to the evolution of the activity. The teacher was then able to align herself with both the child who wanted to destroy and the child who did not want her castle ruined by finding a suitable location for both to occur.

The previously cited example of JD (Example 5) again can be used as a contrasting case. M's stated intent to gather other children to slide with was anticipated to be destructive of their play. The teacher's intervention did not align itself with M's intention; she did not seek to locate a child who would like the opportunity to join M. Furthermore, the activity she was engaged in with the child--sliding--did not function as a framework for determining whether or not she should align herself with the child. M's intentions were only problematical within the teacher's mental context of understanding him to be a child-with-a-problem-of-the-grabbing-kind. His acts were being evaluated in the context of the teacher's definition of him as a person with a problem, not as a person who was contributing to the evolution of the activity. Such a definition led her to mismatch the intention in order to counteract the defined problem.

Example 13. CC (Teacher of 3- to 5-year old nondisabled children): Teacher (T) and children are in the sandbox making sandcastles. A child (L) is about to unvell her castle, and requests that the teacher watch.

Transcript of Interaction

L: Look at me
 T: (Looking at another child)
 L: Look at me
 T: Ah
 Let's see L's
 L: (Starts to pick pail up)
 T: Let's go
 Pick it up
 Up
 L: (Unvells castle, but it does not hold
 its shape)
 T: Ah!
 All falls down
 L: (Mushes sand down)

Transcript of Interview

"With some of the words, I know I stressed it then, up, I took advantage of that, I focused on particular words."

In Example 13, the teacher aligned herself with the child's desire to display the unvelling of her castle. As the child picked up the pail, the teacher stressed the word "up." In the interview, the teacher referenced the educational goal of providing an opportunity for the children to connect the action of picking up with the word "up." The timing of the educational intervention was such that the teacher's goal was accomplished while elaborating on with the child's actions.

GC (Example 4) provides a counter example of how a teacher's educational agenda supercedes the child's focus, and disrupts what the child is doing. While the child was filling a pail with sand the teacher stressed the word "push." In an effort to get the child to pair the meaning of the word with the action, the teacher intervened and took the child's hand, pressed it down into the sand, and again stressed "push." The educational agenda was not timed to coincide with

a pushing motion. The educational agenda took precedence over the child's focus. In the process, the teacher mismatched the child's focus to draw him into her alternative.

Summary of Comparison of Participatory-Educate and Participatory-Activity Teachers

In each of the transcribed examples of Participatory-Activity teachers, the teacher was found to be orienting to the child's focus as the framework for understanding what a child was doing, and for the timing of her interventions. Interventions were aligned with the child 72% of the time. These teachers were found to be aligned with their children more often than any other group of teachers. Examples of teachers who were involved in participatory interactions, but who were pursuing educational goals, were also offered. Educating teachers were found to be aligned with their children significantly less often (31% of the time), and were found to be not aligned with children significantly more often (51% of the time) than any of the other groups of teachers. It is argued that educating teachers were primarily orienting to the child as a child-with-a-problem. Interventions were oriented toward impacting on the disability. These interventions intruded upon the child's focus, and in its place substituted an alternative that was commensurate with the educational goal that the teacher was pursuing. The teacher's goal of impacting upon the disability took precedence over what the child was doing. The child was not understood to be a child-engaged-in-a-focus, but as a disability-to-be-fixed. The teacher's intervention supplanted the child's focus by intervening to provide the child with an educational

experience. It is argued that interventions accomplished by activity teachers have greater educational benefit for the child than those interventions of the teachers who are pursuing educational goals. This argument will be detailed in a later section.

The next section will discuss those teachers who engaged in directive exchanges the majority of the time.

Teachers Who Engaged In Directive Exchanges: The Distinction Between Educational and Supervisory Goals

Of those teachers who were found to be most involved in directive exchanges with children, 7 spoke mostly of supervisory goals (Directive-Supervisory group) and 5 spoke mostly of educational goals (Directive-Educate group) during the interview. The statistical comparison of these two groups yielded one quantitative difference: those stressing supervisory goals were found to be non-aligned with children more often than those stressing educational goals (Means were .30 and .16 respectively). The first set of examples will be of the Directive-Educate teachers, and the second set of examples will be of Directive-Supervisory teachers.

The Directive-Educate teachers engaged in exchanges that were uniquely driven by their pervasive orientation to the "fact" that the children were mentally retarded. Although the educating teachers were frequently aligned with the child's activity, the child was often being monitored for: 1) evidence of the presumed underlying disability; 2) opportunities to impact upon the presumed underlying disability. The child's disability was considered to be a lack of an ability--a deficit, and became the focal point and object of the teacher's

subsequent intervention. An examination of the interventions, though, indicates that the teacher failed to provide the child with the necessary vehicle for overcoming any difficulties that may indeed have been occurring. Educating-while-supervising teachers professed to be intervening to positively impact upon the child's deficit, but it is argued that, in fact, they only made the deficit more apparent. The following examples will address this finding, and show that the quality of the non-aligned moments is different in these two groups.

Directive-Educate Teachers

Example 13. TF (Teacher of 6- to 8-year old mentally retarded children): Teacher (T) and two children (R and L) are in a sand area. The two children sit in the sand, while the teacher is sitting on a low curb that surrounds the area. She is sitting with another teacher.

Transcript of Interaction

L: (Putting sand in wooden castle)
 R: (Inaudible)
 (Truck in hand, running it toward L)
 T: Watch out L, he's gonna run you over
 L: (Looks at R, then turns back to filling castle)
 R: (Moves truck in front of self)
 T: Fill it up
 R: (Looks at T, then at truck)
 T: Hi M (to child off camera)
 R: (Looking down at truck)
 T: Ok,
 Go to the dump now
 Its full
 R: (Leans back away from truck to look at show)
 T: Ok
 Go to the garbage dump now
 Its full
 Where're you gonna dump it?
 R: T
 T: (Looks)
 R: (Points to shoe)
 T: Got sand in your shoe?
 R: (Nods)
 T: So clean it off
 You're in the sandbox
 L: T
 T: What?
 C: (Points to truck)
 T: Well take it to the dump.

Transcript of Interview

"By making comments like that, it aids their imagination. They may be playing nicely, R may say, "I can roll the truck over." Encourage a different kind of interaction rather than the same repetitive filling and emptying."

"I'm just trying to tell them how to use the tow truck."

"They know a lot of times how to operate these particular toys, and then they just do it repetitively. They don't take it a step further, and that was what I was trying to tell them to do. Encourage them to use their imagination."

"Here you give them a setting and you tell them where a certain place is and they'll believe in their minds there's a garbage dump over there. And now you leave it up to them to do what they will. You create a situation for them and see what they'll do."

TF is an example of a teacher who stressed educational goals during the interview, while she was found to be mostly involved in directive exchanges. As shown in Example 13, she was consistently returning to the theme of getting R to take his truck to an imaginary

place in the sand where a "dump" was located.

The last two exchanges have enough evidence from the child's behavior to warrant the conclusion that the teacher was aligning herself with the child. The child initiates the exchanges, showing a clear orientation to getting the teacher to respond to what he was pointing at.

The two middle exchanges, sandwiched around her "hello" to a child off camera, targeted the child's apparent focus on a truck he was playing with, but since the child showed no evidence of moving it to the dump, the exchanges remained ambiguous as to whether or not the teacher was aligned with what he was doing. That is, while the child was looking at the truck, and hovering over it, he was not showing any behavioral indication that he was about to put sand in the truck, nor was he showing any indication that he was about to move the truck elsewhere.

The initial intervention, aimed at L, was coded as non-aligned. This was because L was turned away from R, engaging in a sequence of clear actions aimed at filling a castle with sand. The teacher was intervening to make L aware of another child's action that competed with L's behavioral focus.

Taken together, the transcript does not reveal a teacher who is as intrusive, or as non-aligned with the children's actions as was found when discussing the Participatory-Educate teachers. Perhaps the teacher appears "pushy" or anxious to get the children to do something more than they are actually doing, but the teacher is utilizing the children's interest in the toys as a basis for her interventions

The teacher's interview talk revealed the extent to which she was aware of their disability. The children's behavior was thought to be an expression of the limitations of their cognitive equipment. It was on what they were not doing that the teacher was focusing. Her repeated interventions aimed at getting R to take the truck to the dump stemmed from the lack of perceived evidence that his play was developing or changing. His acts were perceived to be repetitious, and were tied to a deficit; her attempt to extend his play was tied to her attempt to provide a stimulating environment that might move him toward a more developmentally advanced level of play.

In examining the sequence of TF's interventions, and we assume that her diagnosis of the children's play is accurate, it is unclear how her guidance was enabling the child's play to move from repetitive actions to, in the teacher's words, "a step further." If he did not have the capacity to sequence his actions, then he was not going to have the capacity to understand the statement that told him to do so. The teacher was telling the child what he could not do. If the teacher was to help, then presumably she must become involved in the play and provide a rich verbal and object environment to support the notion that the child's truck and dump are related in some way. The teacher was not providing such support, she was simply telling R what he was not doing. In short, she failed to provide a supportive context around the child's filling and emptying; she failed to be both aligned with the child, and be providing a vehicle that would enable the child to move a step further in his play.

Example 14. JS (Teacher of 6- to 8-year old mentally retarded children): The teacher (T) approaches a child (A) who is standing over a bulldozer, moving it about in the sandbox.

Transcript of interaction

A: (Standing, bending over bulldozer, maneuvering it)
 T: A!
 What are you doing?
 A: (Looks at T, continues to maneuver toy)
 T: What are you doing?
 A: Making
 T: What are you making?
 A: Building
 T: What are you building?
 A: [I'm building these]
 (Moves bulldozer)
 T: (Taps A's arm)
 Are you going to talk to me today?
 A: (Looks at T)
 Another child approaches T and together they go to look at the water wheel.

Transcript of interview

"That's A. He's the one who doesn't talk."

"See?" (i.e., his response proves her point).

JS (Teacher of 6- to 8-year old mentally retarded children): A little while later T reapproaches A., who is still maneuvering the bulldozer around the sandbox.

Transcript of Interaction

A: (Stooping over truck, not looking at T)
 T: Did you go across that bridge yet?
 (Points at rocking bridge)
 A: (Continues to look at toy)
 T: A!
 A: (Looks at T)
 T: Did you go across that bridge yet?
 A: (Looks at bridge, then at T)
 T: Yes?
 A: (Maintains look at T)
 T: Was it fun?
 (Nodding)
 A: (Looks at T, then at bridge, then nods)
 T: That was like a regular bridge?
 A: (Nods)
 T: (Laughs since the rocking bridge rocks, making it unlike a regular bridge)
 A: (Begins to move around sandbox again)

Transcript of Interview

"I was trying to get him to talk, to say something."

"He wasn't answering me, he was just going like that (nods)"

JS: Approaches a child (C), who is playing in a sandbox at a different location to the ones above.

Transcript of Interaction

T: What are you?
 C: (No response)
 T: What are you,
 What are you?
 What are you pretending to be?
 C: A boat.
 T: What?
 C: (Inaudible)
 T: Oh my God.
 A boat?
 You're on a boat?
 Where're you going?
 C: I'm going here.
 (Walks to another part of sandbox)

Transcript of Interview

"I'm trying to get him to talk here, to express himself more."

Each of the transcripts in Example 14 involved the teacher's initiation of a conversation with a child who was in the midst of playing. The focus of the conversation in the first and third example was the content of the child's play. The middle example focused on whether or not the child had walked across a bridge, and if so, whether there was anything peculiar about it. In each case, the teacher was not aligning herself with the child's behavioral focus. Instead she was drawing the child into a verbal exchange, the point of which was his report, or account of what he was doing.

As detailed in the interview, each of the interventions were aimed at getting a child to talk—to express himself more. The children were reported to not be skilled at conversing. The teacher appeared to want to engage the child's verbal skills so that he would have an opportunity to practice talking, and in so doing, hopefully become better at it.

Yet, the teacher chose to engage the child on a verbal level when the child was already doing something else. Getting anybody to talk when they are otherwise engaged can be difficult.

More importantly, the teacher limited what she would accept as a response to her questions. In each case the teacher appeared oriented to getting the child to report on something quite specific. In the first example, the teacher asked "What are you doing?" The child's response, "Making," was treated as not specific enough since the teacher re-asked the same question, "What are you making?" The child's new response, "Building," was still treated as inadequate since she again restated the initial question, "What are you building." Assuming

the child found it difficult to supply a verbal answer to her questions, the teacher could make his task easier by accepting his initial response as good enough. Alternatively, she could change the form of the request for information and thereby hope to elicit a fuller account of his activities. For example, she could "guess" at what he was doing and ask him to verify its accurateness. In essentially repeating her initial request three times she only rediscovered the "fact" that he had difficulty engaging in a verbal exchange. Having discovered his difficulty, they never truly engaged in a conversation. They got stuck at the point of entry.

While JS was found to be aligned with children the majority of the time, a qualitative analysis indicates that, like other teachers in this group, she was oriented to the fact that the children had specific deficits--in the examples cited the deficits were in the child's verbal skills. Her interventions attempted to elicit the deficient verbal skills in order to provide the child with the opportunity to overcome them. Yet she attempted to accomplish her educational mission when the child was otherwise engaged. Once having gotten the child's attention, she limited the child's potential contributions to quite specific responses. In restricting the scope of his contributions, she made the child's difficult task even more difficult.

Example 15. MS (Teacher of 6- to 8-year old mentally retarded children): A child (R) is standing holding a paddle with a ball attached by an elastic string. The teacher approaches and the child initiates an exchange by asking a question.

Transcript of Interaction

Transcript of Interview

R: (Standing, holding paddle)
Can I get a drink of water?
T: Yup.
(Takes paddle from R)
You wanna play with me first?
(Offers R paddle)
R: (Takes paddle, steps back)
T: Watch
You have to hit this
(Shows R the ball)
After a brief exchange with another caretaker:
R: (Looking at T)
T: Ready R?
See what you have to do?
R: (Holds paddle back, ready to hit ball)
T: (About to "pitch" ball)
You have to hit it now,
I'm going to throw the ball
(Throws ball)
R: ¶(Swings and misses)
T: ¶You hit it now!
After a brief exchange in which both T and R move away from child sitting nearby they re-start:
T: Hold it like this (demonstrates)
R: (Complies)
T: Ready R?
(Puts one hand on R's paddle, and with the other bounces the ball lightly onto paddle)
The ball falls to the ground, and after trying to untangle the string, the child again asks to get a drink of water which the teacher accedes to.

"Right now I was playing paddle ball with R. It was just a way to get him to open up because he has his very autistic tendencies. When he focuses he knows what's going on, but then all of a sudden he'll go off to another world. So right now it seems like he's responding but he wasn't responding enough. I was working with him just to get him to focus on me, to get him out, he was just going into an autistic scene."

In Example 15, the teacher and child's alignment is initially ambiguous. While the child was holding a paddle and ball, he requested permission to get a drink of water. The teacher gave him permission,

but then competed with it by asking if he would like to play. He agreed by accepting her offer of the paddle. After a brief exchange with another caretaker, the teacher and child's alignment was again ambiguous since the child was looking at the teacher, but was not showing any evidence of assuming a "hitting" posture. The teacher's prompt to hit the ball, in the next exchange, was aligned with the child's arm being "cocked." The end of the transcript shows the teacher intervening and regulating not only how R held the paddle, but by adding her own hand to the paddle, and then bouncing the ball on it, she reduced R's role to that of being an adjunct to the paddle, and a bystander to the play. She effectively usurped the child's role in the play.

The teacher expressed her orientation to the child's deficit in her description of his "autistic tendencies." She appeared to mean that the child's attention wanders in and out of focus. The activity she proposed and engaged in was her attempt at working on his difficulty. In tightly regulating the play, though, she reduced his participation to being the mere holder of a paddle. If the child had difficulty focusing his attention, it is unclear how the reduction of his role in the play would increase his ability to focus. By decreasing his involvement, the chances are that his interest will decrease, thereby actually increasing the potential for his attention to wander. In targeting a child's supposed deficit for her intervention, the teacher created the conditions for the deficit to appear. The teacher was being educational in the sense that she was aware that the child had a specific problem; she was not educational in

the sense of providing the child with an experience that might help the child to overcome the problem.

Example 16. VC (Teacher of 6- to 8-year old mentally retarded children): The teacher (T) and child (J) are in a heavily matted area surrounded by netting. There are numerous children and other teachers in the area. The child is standing in the corner, his back to the netting. The teacher approaches the child.

Transcript of Interaction

J: (Standing in corner, facing teacher)
 T: J., how you doing?
 J: (Holding onto net, swings feet off ground and toward T)
 T: You wanna climb up?
 J: (Feet come back to ground, stands and looks at T)
 T: You wanna climb up--
 Are you being a bad boy?
 J: No
 T: You know what happens if you're a bad boy?
 You can't go into the water
 J: (Looks at T)
 T: You can be a good boy, right?
 J: What's that?
 (points at T's microphone on her lapel)
 T: Oh nothing, just a piece of jewelry.
 Its nothing
 Don't pay any attention to it
 C: (Darts by T into central area of matting)

Transcript of Interview

"J always gives us a lot of trouble. I'm anticipating that he's gonna be bad."

"We figured out the reason why we think he's so rough and his behavior is bad. He has an older brother, and I think the brother, I mean on a normal child perhaps it wouldn't be a bad influence, but for him it seems that his brother is a bad influence. And we know his brother will tell him these things because he tells us."

In example 16, the teacher appeared to be initially aligned with the child as she focused on his lifting of his feet off the ground as a basis for suggesting that he climb further up the netting. It was unclear what he did to indicate that he was doing something "bad," but she oriented to the breach and rebuked the child.

In the interview, the teacher oriented to the child's behavioral

problem: he causes trouble. Assuming her characterization is accurate, and that he did do something that was indicative of his problem, it was unclear how the teacher's intervention would impact on the child's difficulty. What he did that was "bad," and how he could "be a good boy," were left unformulated. The teacher did little more than tell the child what, in her eyes, he already was. She verbalized his problem, but did not indicate what he might do to be "good," or how to avoid being "bad" in the future. In short, she located the child's problem in what he was doing, but did not help him to find a path out of it.

Example 17. EK (Teacher of 6- to 8-year old mentally retarded children): Standing at bottom of slide, with a number of children taking turns sliding. One child (K) is walking up the slide when he takes a ribbon from around his neck, a ribbon all children are asked to wear while they are on the playground, and throws it down to the ground.

Transcript of Interaction

Transcript of Interview

K: (Throws ribbon down)
 T: K!
 Come here!
 Down.
 K: (Continues walking up)
 T: Nope
 Nope
 What did I tell you
 No throwing anything
 (Walks up steps, takes K's hand)
 C'mon
 K: (Complies)
 T: Come down and get it
 K: (Complies)

"I don't know if he had thrown sand or a mat or what. With K., its stay on top [of him], work on the inappropriate behaviors, and I want them to do for themselves [to pick up after themselves]."

In example 17, the child's act of throwing his ribbon was oriented to by the teacher, and she led him through the steps necessary to rectify the situation. The teacher commented that she was concerned with K's inappropriate actions, and expressed her desire for the children to have a part in dealing with the consequences of their misbehaviors.

It was unclear why the child took the ribbon off. There was no effort to establish what might have led the child to do such a thing. Rather, the child's action was immediately treated as being inappropriate. Defined as such, the teacher intervened to "teach" him that what he did was wrong. The incident enabled the teacher to "work" on an enduring problem.

The example indicates that the child's behavior was monitored for

examples inappropriateness. Behavior was not understood in terms of the unique situation the child was in at any given moment, but in terms of the long term goal of extinguishing certain kinds of behaviors. Why the child took the ribbon off at that moment was not an object of inquiry. Was the child feeling appropriately or inappropriately uncomfortable, choked, and/or defiant? If the child had difficulty finding appropriate channels of expression then interventions that did not provide alternative vehicles only re-established that fact that he had difficulty. The teacher robbed the child of the opportunity to express what he was presently feeling in a more appropriate way. He was only re-shown how not to express himself, with no help in finding which behaviors would constitute "being appropriate."

Summary of Directive-Educate Teachers

Directive-Educate teachers framed their understanding of their children's play around the "fact" of the children's disability. The disability was considered to be the lack of certain capacities. This unique orientation to the child was what differentiated these teachers from Directive-Supervisory teachers. As the next section will show, Directive-Supervisory teachers did not talk about impacting on the child's abilities. If anything, the child was seen as a body that was acting in or out of consort with other bodies in the group.

While the statistical comparison between teachers who expressed educational goals and those who expressed supervisory goals did not reveal differences in the frequency of exchanges in which teacher and child were aligned, it is difficult to conclude that the educational

teachers were providing enough information to the child when aligned, or when in ambiguous conditions, to be truly "educating" the children.

The interviews reveal a deficit orientation to the child. The teacher's interventions were tied to this deficit orientation. The interventions appeared to grasp hold of what the child was doing, framed within the teacher's awareness that what the child was doing was related to their deficit, but did not lead to the provision of information that could help the child overcome whatever difficulties they may in fact have been having. The teacher's interventions created the conditions for the child's deficit to appear, but did not ameliorate the problem. It is in this qualitative sense that the teachers who were educating were evidencing a more fundamental mismatch to the children than the quantitative analysis revealed.

Directive-Supervisory Teachers

There were 7 teachers who were mostly involved in directive exchanges with children, and who talked mostly of supervisory goals during the interview. These teachers were found to not be aligned with their children about 30% of all the time they interacted. It was found that teachers in this group were working in higher teacher to child ratios than Directive-Educate teachers, and were usually working without the assistance of other teachers. The teacher's supervisory agenda was oriented toward managing a group of children. When an individual child pursued a line of action that brought him in conflict with the teacher's managerial role, the teacher would intervene. The intervention was aligned with the group's activity, but not necessarily

with that of the individual child being targeted. Teachers in this group were less concerned with the content of their children's play, and were more concerned with: 1) Where children played; 2) Maintaining the orderliness of play. The following are examples.

Example 18. RW (Teacher of 3- to 5-year old nondisabled children): Teacher (T) is standing in an open area. Her children are scattered about. She surveys the scene and summons two children (N and J) who are about to move away.

Transcript of Interaction

T: (Looking about)
 Let's see,
 Is our group intact?
 N: (Starts to move away)
 T: N!
 You stay with me please
 N: (Complies)
 T: J!
 You're with me J
 J: (Comes to T)

Transcript of Interview

"When a teacher goes on a trip with children, she has to make sure all the children are with her. Your eyes have to be everywhere."

In Example 18, two children, N and J, both began to run toward a distant play area where the swings were located. In an effort to keep the children in her charge together, the teacher called them back. The teacher competed with their movement toward the swings in her directive to remain close by. The teacher expressed her supervisory task during the interview.

Example 19. RP (Teacher of 3- to 5-year old mentally retarded children): The teacher (T) is on a rocking bridge with a group of children and a fellow teacher. The children are shaking the bridge. The other teacher has just announced that they are all going to move to a slide. RP initiates the following exchange with a child (C) who still is involved in making the bridge rock.

Transcript of Interaction

C: (Clinging to side of bridge, a foot off the ground)
 T: C'mon
 (Starts to lift child down to ground)
 C: No no
 Let me go
 T: C'mon
 Come down
 C: (Climbs down and runs to group)

Transcript of Interview

"The other teacher wants to go somewhere else, and I'm trying to get the kids to follow her."

In Example 19, the child's continued involvement in hanging onto the bridge conflicted with the announced goal of moving the group of children to the slide. Rather than lingering and aligning herself with the child, the teacher intervened to maintain the integrity of the group.

Example 20. JH (Teacher of 3- to 5-year old mentally retarded children): The teacher (T), with another teacher, are moving a group of children from the monkey bars to the see-saw. Along the way one child (A) wants to explore an area that is not on the direct path the group is taking. After initially trying to keep A with the rest of the group, the teacher allows the child a brief look at the object of her curiosity.

Transcript of Interaction

Transcript of Interview

A: (Moves away from group, toward soft play area)
 T: Look it A!
 Up here (points to where group goes)
 A: (Looks back at T, pointing to area)
 T: (Goes to A, takes her hand)
 I think that's closed
 What's this?
 I think its closed
 (Leading child into area)
 A: (Looking at nets, holding T's hand)
 T: Its no good
 Its closed
 (Turns child around)
 A: (Looks about)
 T: Nothing
 (Pulls A in direction of group)
 C'mere
 Nothing
 A: (Looking back, moving slowly)
 T: (Tugs A's arm)
 Let's go--
 A!
 (Stoops over, putting other arm around A's body)
 A: (Looks at T)
 T: C'mon
 A: (Walks forward toward group)
 T: (Lets go of A's hand)
 Go ahead
 A: (Runs toward group)

"I'm trying to bring her back to the other children."

In Example 20, the child expressed the desire to investigate an area of the playground that conflicted with the stated managerial goal of moving a group from one play region to the next. While initially aligning herself with the child's curiosity, the teacher effectively

negated the value of further exploration in her repeated tugging at A's arm and description of what was of interest in the area: "nothing." The child's interest was eventually treated as an active form of resistance to the teacher's directive to "c'mon." In the end, it was the child who had to be aligned with the teacher's agenda in order to gain the freedom of moving on her own.

Example 21. RP (Teacher of 3- to 5-year old mentally retarded children): A child (J) is sitting at the bottom of the slide where he is inadvertently holding up the line of children at the top of the slide.

Transcript of Interaction

Transcript of Interview

J: (Sitting at bottom of slide)
 T: Come off the slide, J.
 J: (Stands up, looks at T)
 T: Do you want to go back up?
 J: (Looks at T)
 T: Go back up
 You can go back up again
 Go ahead

"Just trying to get him off so the other kids don't run into him."

As shown in Example 21, in her effort to maintain the orderliness of a group's movement down a slide, the teacher intervened and treated the child as an obstacle to that movement rather than as a child who may or may not have been enjoying a moment filled with alternatives.

Example 22. WW (Teacher of 3- to 5-year old nondisabled children): The teacher (T) is by the see-saw with a group of children. She has just initiated a switch of which children can have a turn sitting on it. As she moves to help the children off and then help the next riders on, she begins to orchestrate the turn-taking (children are denoted A, B, C, R and J).

Transcript of Interaction

Transcript of Interview

T: (Bending over child, helping her to get off the see-saw)

A: (Standing next to T)
My turn

T: One minute
Everybody's gonna get a turn

R: (Squeezes to front of waiting line)

T: R, don't push ahead
Everybody's gonna get a turn

R: (Tries to climb into now empty seat)

T: R, one minute and I'll help you
(Moves to opposite side of see-saw to help another child get started)

J: (Sitting in seat)

T: J, you ready?

B: (Standing next to J)
I'm ready

T: One minute

C: (Also standing next to J)

Can't I get a turn?

T: Everybody's gonna get a turn
There's a lot of people waiting

"Just trying to keep some kind of control there."

As in the previous example, Example 22 shows that the teacher was oriented toward controlling the orderliness of a group of children. As such, she could not be aligned with each and every child's stated goal of getting the next turn.

Summary of Directive-Supervisory Teachers

Teachers who expressed supervisory goals, and who were mostly involved in directive exchanges, were found to be non-aligned with their children significantly more often than teachers who expressed educational goals while engaged in mostly directive exchanges. The transcribed examples are prototypical of non-aligned moments. Each example detailed a conflict between the child's focus and the teacher's agenda of overseeing a group of children. The teacher aligned herself with the goal of maintaining the integrity of the group, and in the process the individual's line of action was curtailed.

CHAPTER VI

SUMMARY OF QUANTITATIVE AND QUALITATIVE FINDINGS

The following is a point by point summary of the findings that have been reported. Each major finding is separated by the following symbol: **.

** Teachers were found to differ according to their direct and indirect participation in children's play. Teachers of 3- to 5-year-old nondisabled children were observed in directive exchanges with groups of children most frequently (Mean = .41). Teachers of 3- to 5-year-old mentally retarded children were observed in participatory exchanges with individuals most frequently (Mean = .38). Teachers of 6- to 8-year-old mentally retarded children were observed in directive exchanges with individuals most frequently (Mean = .41). While teachers of the three groups of children were observed in different areas of the playground, and were observed in different teacher-child ratios, it was noted that these findings did not seem to influence the kinds of exchanges a teacher engaged in.

** Teachers in each group were found to express different goals, during the interview, with different frequencies. Teachers of 3- to 5-year-old nondisabled children expressed supervisory goals most frequently (Mean = .40). While this was significantly more frequent than teachers of 6- to 8-year-old mentally retarded children it was not

significantly different than teachers of the 3- to 5-year-old mentally retarded children.

Teachers of 3- to 5-year-old mentally retarded children were found to express educational goals most frequently (Mean = .39). This tended to be more frequent than teachers of 3- to 5-year-old nondisabled children and tended to be less frequent than teachers of 6- to 8-year-old mentally retarded children.

Teachers of 6- to 8-year-old mentally retarded children were found to express educational goals most frequently (Mean = .53), and this was significantly more frequent than teachers of 3- to 5-year-old nondisabled children, but only tended to be more frequent than teachers of 3- to 5-year-old mentally retarded children.

** The picture that emerges from the data on exchanges and interviews is that teachers of the nondisabled are defining the playground as a supervisory setting while the teachers of the mentally retarded are defining it as an educational setting.

** While the findings indicate differences between groups, one problem that emerged was that individual teacher profiles did not necessarily reflect that of their group's. Variation among individuals was not solely a result of quantitative differences, though; it was also due to qualitative differences between teachers in the same group.

To explore qualitative differences, for each teacher, the most frequent interview response type was cross-classified with the two major exchange categories: directive or participatory exchanges.

Of the 11 teachers who engaged in focused exchanges the majority of time, four teachers expressed educational goals most frequently during the interview, seven teachers expressed activity goals most frequently, and there were no teachers who expressed supervisory goals most frequently. Only teachers of the mentally retarded children pursued educational goals most frequently.

Of the 12 teachers who engaged in supervisory exchanges most often, five expressed educational goals most frequently during the interview, seven expressed supervisory goals most frequently, and no teacher expressed activity goals most frequently. Again, only teachers of the mentally retarded children stressed educational goals most frequently.

** On the basis of the cross-classification, two separate comparisons were undertaken. The first compared teachers who talked most frequently about either their educational or activity goals during the interview, but in both cases spent a majority of time in participatory exchanges. The second compared teachers who talked most frequently about either their supervisory or educational goals during the interview, but in both cases spent a majority of their time in directive exchanges.

Teachers who were observed in participatory exchanges most often, and expressed educational goals most frequently during the interview, the participatory-educate group, were found to be not aligned with children (Mean = .51) significantly more often than teachers who were observed in participatory exchanges most often but expressed activity

goals most frequently (Mean = .07). The participatory-activity teachers, on the other hand, were found to be aligned with children significantly more often (Mean = .72) than the participatory-educate Teachers (Mean = .31).

The only significant difference between Directive-Educate teachers and Directive-Supervisory teachers was that the latter group was found to be not aligned with children more often than the former group (Means = .30 and .16 respectively).

** The qualitative analysis indicated that all of the teachers who were involved in participatory exchanges with children were directly involved in the content and quality of the children's play. The teachers differed though, according to how they defined the play setting.

Participatory-Educate teachers were less concerned with the child's focus as an object of elaboration and extension, and more concerned with the child's focus as an opportunity to diagnose, work on, or stimulate an underlying (in)capacity. The child was not treated as accomplishing or pursuing a line of action that had merit. The child's focus was oriented to only to the extent that it provided the teacher with an initial point of departure for accomplishing her agenda. The high frequency of non-aligned exchanges was not a result of the child's lack of action, but a result of the teacher's goal of educating. The child's focus was rendered unimportant, irrelevant, or problematical by the teacher's educational agenda.

The Participatory-Activity teachers, on the other hand, were found

to be aligned with children significantly more frequently than any of the other groups of teachers (72% of all exchanges were aligned). They were also found to be non-aligned with their children the least of all groups (7% of all exchanges were non-aligned). The most striking feature of these teachers, in contrast to all the other teachers in the sample, is that they appeared in their interactions with the children, and presented themselves during the interview, as participants in the childrens' play. In their words, they were "just": building sand castles, playing follow the leader, or "fooling around." While they may have been a participant, they nevertheless intervened, at times, as a person who was more knowledgeable or more skilled at an activity than the children. Yet, when intervening these teachers were able to maintain their alignment with the child's focus while at the same time, provide the level of assistance the child may have required. This was true even for those 4 teachers included in this sub-group who were interacting with mentally retarded children.

** The qualitative analysis of those teachers who were found to be most involved in directive exchanges with children shows that they were located on a peripheral boundary of the children's play. These teachers oversaw what the children did, and at times intervened.

The Directive-Educate teachers engaged in exchanges that were uniquely driven by their pervasive orientation to the "fact" that the children were mentally retarded. Although the educating teachers were frequently aligned with the child's activity, the child was often being monitored for: 1) evidence of the presumed underlying disability; 2)

opportunities to impact upon the presumed underlying disability. The child's disability was considered to be a lack of an ability--a deficit, and became the focal point and object of the teacher's subsequent intervention.

Directive-Supervisory teachers did not talk about impacting on the child's abilities. If anything, the child was seen as a body that was acting in or out of consort with other bodies in the group. When an individual child pursued a line of action that brought him in conflict with the teacher's managerial role, the teacher would intervene. The intervention was aligned with the group's activity, but not necessarily with that of the individual child being targeted. Teachers in this group were less concerned with the content of their children's play, and were more concerned with: 1) Where children played; 2) Maintaining the orderliness of play. The following are examples.

CHAPTER VII

DISCUSSION

Quantitative Findings

This section will discuss the results of the study, and establish the findings to be focused on in greater detail.

Teachers of the three groups of children were found to differ in a number of ways. Teachers of the 3- to 5-year-old nondisabled children were found to be working in a higher teacher to child ratio (84% of the time they were overseeing 3 or more children) than either of the two groups of teachers of the mentally retarded. They were also found to be working without the assistance of other teachers more often than the teachers in the other two groups. Perhaps as a result of this, teachers of the nondisabled children were observed to be in play regions characterized by rigid environmental boundaries more often than teachers of the other two groups. While they were found to spend a greater proportion of the total time observed in interaction, the rate of interaction and the mean length of an exchange sequence did not differ from teachers of the mentally retarded.

It was no surprise to find that teachers of the nondisabled children spent most of their time in directive exchanges with groups of children, and spoke of supervisory goals most often during the interview. They did both significantly more often than teachers of the two mentally retarded groups. For the group as a whole, the playground appeared to be a setting in which the teacher was largely

concerned with her managerial goals.

Teachers of the younger group of mentally retarded children, when interacting with them, spent most of the time in participatory exchanges with individual children. This is consistent with the finding that these teachers were in a teacher to child ratio of 1:1 or 1:2 71% of the time. Within these participatory exchanges, the teachers reported that they were pursuing educational goals most often. The teachers appeared to be attempting to impact on the child's mental retardation when they interacted with them.

Teachers of the older mentally retarded children spent most of their time in directive exchanges with individual children. While these teachers were in a teacher-child ratio of 1:3 or more 58% of the time, they were working with the assistance of another teacher more often than the other two groups of teachers (51% of the time they were working with at least one other teacher). Thus, it appears that the teacher's coverage of the group of children was such that they were able to attend to individuals. Although they were found to be engaged in directive exchanges most often, these teachers reported that they were pursuing educational goals most often when interviewed.

These findings suggest that teachers of both groups of mentally retarded children show a greater explicit awareness of their role as educator than teachers of the nondisabled children. This is indicated in their participation with individuals as opposed to groups of children, and in their pursuit of educational goals. That the older mentally retarded children were directed, while the younger ones were engaged in participatory interactions, appears to be a result of their

different ages. Teachers of the older group seemed more concerned that, since the children were older, they be allowed more independence in their play. The teachers of the younger disabled group were disposed to directly engage the children in play.

In order to focus on of how a teacher's goals effected their interactions with children, within group variation was examined. Each teacher's most frequent interview response type was cross-classified with data indicating whether or not they were most often an indirect or direct participant in their children's play. The three groups, as defined by the age and status of the child, were transformed into four groups. Of the 11 teachers who were found to engage in participatory exchanges, 4 were found to pursue educational goals most often, and 7 were found to pursue activity goals most often. Of the 12 teachers who were found to engage in directive exchanges, 5 were found to pursue educational goals most often and 7 were found to pursue supervisory goals most often.

These four groupings do not appear to be the result of differing numbers of children the teachers were overseeing. For example, teachers in the Participatory-Activity group were found to be in a teacher-child ratio of 1:4 or more 32% of the time, while the Directive-Supervisory group was in the same ratio 44% of the time. While there is a difference in these two frequencies, it is clear that teachers were able to pursue activity goals while with 4 or more children. Group size alone did not lead a teacher to pursue one goal over another.

What is the relationship between the original three groups of

teachers, as defined by the age and status of the children, and the four groups that resulted from the cross-classification? It is argued that this is a choice a teacher makes; it is the enactment of a role that has implications for how she then interacts with children.

Of the 8 teachers of nondisabled children, 3 were in the Participatory-Activity group, and 5 were in the Directive-Supervisory group. Why were 3 teachers choosing to be directly involved in play, pursuing activity goals, while 5 were choosing to be indirectly involved, pursuing supervisory goals? Rather than attributing this difference to the capacities of the children (which were presumably the same since all the children were nondisabled), or to the number of children in the teacher's charge (since both groups contained a high teacher-child ratio much of the time), this seems to be a result of how the teacher chose to oversee her children.

This choice had consequences on the children's experience of the play setting. As the qualitative analysis showed, when in a Directive-Supervisory group, the child was free to play within certain boundaries. An examination of the exchanges in which the teacher and child were not aligned with one another will indicate that the child was to play near the teacher, and was not to interfere with the evolution of other children's activities. If the child did act in a way that brought him in conflict with one of these two factors, then the teacher intervened to repair the non-alignment (30% of the time in interaction was in non-aligned exchanges for this group).

Teachers in the Participatory-Activity group were participating in activities with children, and were focusing on the child's actions,

extending or elaborating on them. This is indicated in the high frequency of aligned exchanges for this group (72% of the time in interaction was in aligned exchanges for this group).

Of the 7 teachers of the younger mentally retarded group, 3 teachers were in the Participatory-Educate group, 2 in the Participatory-Activity group, and 2 were in the Directive-Supervisory group. The two teachers in the last group were in high teacher-child ratios, perhaps necessitating their supervisory goals. The 3 teachers in the Participatory-Educate group, and the 2 teachers in the Participatory-Activity group, were all in low teacher-child ratios. Why were these teachers pursuing different goals? This does not appear to be a result of differences in the capacities of the children. The children did not appear to be, for example, more or less verbal than one another.

It seems more accurate to attribute differences to the teacher's orientation to the children's actions. Teachers in the Participatory-Educate group, during the interview, were oriented to the child's disability, and interactions were organized around attempts to draw the child into a teaching or direct learning exchange. It was as if the child's focus was regarded by the teacher as being either unimportant, or part of the child's problem. Rather than participating in that focus, the teacher sought to replace it with an alternative. The qualitative analysis will show that the children were actively engaged when the teacher intervened with an educational goal. This strategy is reflected in the high frequency of non-aligned exchanges for this group (51% of the time in interaction was in non-aligned exchanges for this

group).

Teachers of the younger mentally retarded children in the Participatory-Activity group appeared to be similar to the teachers of the nondisabled who were also in this group. They chose to participate in what the child was doing. The child's actions were not evaluated as being an indication of the child's mental retardation. The child's actions were an expression of an interest on which the teacher chose to build. If these teachers did momentarily pursue an educational goal, it was timed to coincide with the child's focus so that the alignment was maintained. It was for this reason that teachers in the Participatory-Activity group had a low frequency of non-aligned exchanges (7% of the time in interaction was spent in non-aligned exchanges).

Of the teachers of the older mentally retarded children, 1 was in the Participatory-Educate group, 2 were in the Participatory-Activity group, and 5 were in the Directive-Educate group. Surprisingly, the two teachers in the Participatory-Activity group were in a higher teacher-child ratio than the teachers in the other two groups. Both of these teachers were involved in similar activities with their children--rough and tumble play in a heavily matted area.

The Directive-Educate teachers, on the other hand, were in low teacher-child ratios. As the qualitative analysis indicated, these teachers were usually peripherally involved in a child's play. They were similar to Directive-Supervisory teachers in that they were oriented to monitoring children.

Directive-Supervisory teachers were not aligned with children more

frequently than Directive-Educate teachers (Means were .30 and .16 respectively). This was because Directive-Supervisory teachers, in high teacher-child ratios, were balancing individual interests with that of the group's. When an individual's focus conflicted with, or impeded a group activity, the teacher intervened to align herself with the group and not with the individual. Directive-Educate teachers, on the other hand, were working in low teacher-child ratios. Thus, conflicts between an individual's focus and a group's activity were rarely an issue.

As the qualitative analysis indicated, when Directive-Educate teachers were not aligned with children, they appeared to be similar to Participatory-educate teachers. Both groups oriented to the fact that the children were mentally retarded. The difference was that Directive-Educate teachers were not attempting to supplant draw the child's focus with an alternative educational one as the Participatory-Educate teachers did. Directive-Educate teachers were attempting to impact on the child's disability, but in a questionable manner. While not as disruptive, nor as frequently non-aligned as Participatory-Educate teachers the Directive-Educate teacher's orientation to the child's mental retardation did not necessarily lead to the provision of assistance that the child may have required.

Summary. This section has detailed the relationship between the original three groups of teachers, defined by the age and status of the child, and the four groups that resulted from the cross-classification of teachers according to their goals and direct or indirect participation in their children's play. Rather than attributing the

four groups to: 1) the different capacities of the children in each of the original three groups; or 2) different teacher-child ratios, it was argued that the four groups were a result of the teacher's choice of how to interact with children. These choices had consequences on how the teachers and children interacted. The qualitative analyses will detailed these consequences. Participatory-Educate and Directive-Educate teachers showed an orientation to the child's deficit, and this orientation effected how the children were engaged. These two groups consisted only of teachers of mentally retarded children. Teachers of the mentally retarded were similar to teachers of the nondisabled when in the Participatory-Activity or Directive-Supervisory groups. For them, the issue was not the child's mental retardation, but the participation in an activity with a child, or the management of a group of children.

Qualitative Findings

This section will summarize and discuss the qualitative analyses of teachers who either directed children or were involved in participatory interactions with children. In both groups there was evidence that different teachers were pursuing different goals, and that this difference was associated with how often a teacher was found to be aligned or not aligned with children. Any further discussion of the implications of the findings must take into account the interplay between a teacher's goals and her interactions with the children.

The group of teachers who were in participatory interactions with children consisted of two subgroups: those who were pursuing activity

goals and those who were pursuing educational goals. While teachers who pursued activity goals were overwhelmingly aligned with children, teachers who pursued educational goals were not. Clearly the teacher's goals have implications for how they interact with children, and the nature of their role in the child's further development.

Teachers who pursued activity goals were participating in activities with children. They oriented to the child's focus, and extended or elaborated on that focus. They were not explicitly "teaching" the child, but were, in effect, impacting on the child's participation in play.

Teachers who pursued educational goals were not participating in the children's focus as much as they were attempting to supplant it with the more "educational" focus. Prototypical examples showed how the teacher attempted to redirect the child's focus to an explicit learning task, often modeled on traditional classroom activities. The child's interests and actions ceased to be part of the immediate exchange. Instead, it was the teacher's interests that were critical.

Past research has indicated that the play of mentally retarded children is not as developmentally advanced as similarly aged, nondisabled children. In addition, mentally retarded children, when compared to nondisabled children, have been found to be less responsive to mothers (Buckhalt et al., 1978; Cunningham et al., 1981). These child variables have been considered to influence how an adult contributes to an interaction. For example, research was reviewed that alternately described mothers of mentally retarded children as being more controlling, more directive, or insensitive (Kogan et al.,

1969; Crawley et al., 1983) than mothers of normally developing children. Schnelder and Gearhart (1988) argue that mothers of mentally retarded children may appear to be interacting in these seemingly negative ways when taken out of context. In fact, the mothers may be adapting their interventions to the mentally retarded child's lack of responsiveness. Rather than considering these mothers to be limiting their children's play, they may in fact be facilitating their play.

In light of the finding that the teachers' goals were found to be associated with the frequency of being aligned or not aligned with children, the question remains whether this was a result of teacher variables. Were teacher goals influenced by the capacities of the children?

In some sense one of the major arguments motivating the discussion of the research findings is that the child's perceived capacities were dramatically influencing the goals a teacher pursued. Teachers of the mentally retarded who pursued educational goals most frequently were strongly influenced by their pervasive orientation to the child as being mentally retarded. Indeed, only (but not all) teachers of the mentally retarded pursued educational goals most frequently. Not one teacher of the nondisabled was found to express educational goals most frequently. Support for this finding is found in the research of Kogan et al. (1969), who reported that the most frequently emitted behavior of mothers of mentally retarded children was the teaching question. In addition, Stoneman et al. (1983) found that parents of Down Syndrome children assumed the role of teacher more often than parents of nondisabled children. Yet there were six teachers of mentally retarded

children who pursued non-educational goals. Why is it that certain mentally retarded children were subjected to educational goals, and not others? Were those mentally retarded children targeted for educational goals different from the mentally retarded children who were not?

One way to properly answer this question would be to pre-test each child in order to assess their individual mental abilities. If children of similar abilities were targeted for educational interventions then there would be evidence that the teacher's goals were independent of the childrens' abilities. Alternatively, if lower functioning children were the only ones who were targeted for educational interventions then there would be evidence that the teacher's goals were being adapted to the childrens' abilities. Such pre-testing was not part of the current study because the relevant records were not available to the researcher. Thus, a definitive answer cannot be offered.

It should be pointed out, though, that even when pre-testing is integrated into a research design, difficulties in adequately measuring the abilities of mentally retarded children have posed problems for researchers. Schneider and Gearhart (1988) provide a brief review of the various strategies for matching children according to mental age. The problem that has prevailed is that children can attain similar mental age scores based on different patterns of strengths and weaknesses. While differences in how the children then interact might be related to their overall mental age score, this relationship may be attained for different reasons, depending on the child.

Nevertheless, there appeared to be no striking difference between

the capacities of the mentally retarded children who were with teachers who pursued different goals. Children who requested to answer questions about the names of objects or colors did not appear to be either more verbal or less verbal than children in other groups. Support for the notion that it is the child's status as disabled that determines the adult's educational orientation is suggested by certain researchers.

For example, as discussed in the review of literature, Maurer and Sherrod (1987) tracked mother-child interactions over a two year period. The children were either normally developing or were identified as having Down Syndrome. Although they found that there was no difference between mothers in the two groups in terms of their directiveness or intrusiveness when the children were matched for mental age, the authors commented that parents of the Down Syndrome children used directives to get their children to do the socially appropriate "right" things with their toys. Odom (1981) has made a similar observation in his study of mother-Down Syndrome child interactions.

Guralnick and Paul-Brown (1984) examined the interactions of a nondisabled child and either another nondisabled child or a developmentally delayed child in a laboratory setting. The nondisabled child was instructed to "teach" the partner how to use a certain toy. In examining the behavior requests made by the nondisabled "teacher" Guralnick and Paul-Brown found a difference in the follow-up strategies, one that depended on whether the "student" was developmentally delayed or nondisabled. When the disabled child failed

to respond to the behavior request, the "teacher" modeled the requested action. When the nondisabled child failed to respond, the requested action was justified. The authors comment that this difference is a result of an attitude that the nondisabled child-as-teacher has. Perceiving the disabled child-as-student as lower in status than the nondisabled child-as-student, requests were not justified. No reason was offered for getting a disabled child to comply. Only nondisabled children merited such a justification.

These studies suggest that it is not necessarily anything that the mentally retarded child is specifically doing that targets them for interventions that are educational. The child's actions are evaluated in terms of the child's disability. Such an understanding has implications for how the child is then engaged. In the context of the present study, being oriented to the child's actions as evidence of an underlying disability led to educational interventions that were either intrusive or maladapted to the child's focus. Rather than attributing the teacher's goals and interventions to the child's capacities, it seems more accurate to suggest that the child's capacities were attributable to the interventions and goals of the teacher.

An additional question to consider is whether it is to the mentally retarded child's benefit that the teacher intervenes to pursue educational goals. Perhaps it is the teacher's educational interventions that provide the child with the vehicle for overcoming difficulties they may have. Evidence presented in the qualitative analysis of transcribed examples of interaction do not suggest that these teachers were enabling the child to overcome difficulties.

Rather, teachers were often found to be presenting difficulties without intervening to effectively help the child to overcome them.

The major question to ask when considering the differences between activity teachers and educational teachers is this: Is building on the child's focus the vehicle for promoting their development in play, or is supplanting the child's focus with the teacher's alternative the vehicle for promoting development in play? Let us leave this question unanswered until the teachers who were supervising children are considered.

The group of teachers who were in directive interactions with children consisted of two subgroups: those who were pursuing supervisory goals and those who were pursuing educational goals. Teachers who pursued supervisory goals were aligned with children as often as teachers who pursued educational goals, but were not aligned with children more frequently than teachers who pursued educational goals.

The qualitative analysis of exchanges where teachers were not aligned with children indicated that there was a major difference between the two subgroups. When teachers who pursued supervisory goals were not aligned with children they were focusing on managerial issues. If a child strayed too far away, or if a child's focus brought them in conflict with the dominant group activity, the teacher would align herself with the group and not with the individual child. The child was constrained to play in a certain area of the playground, or was constrained to not hinder the evolution of the group's activity. This finding is probably related to fact that Directive-Supervisory teachers

were in higher teacher to child ratios, and were working alone more often than Directive-Educate teachers. Since this latter group of teachers were frequently overseeing one or two children, individual-group conflicts were not an issue.

Teachers pursuing educational goals were not aligning themselves with children for very different reasons. Prototypical examples indicated that the teacher was intervening to influence the content of what the children were doing. The teacher was either supplanting the child's focus with her "educational" alternative, or was attempting to build on the child's focus, but in a manner that was not benefiting the child. In both cases the teacher was oriented to the child's (in)capacity, or deficit. The child's focus was perceived by the teacher as evidence of an underlying deficit. The child's deficit was the phenomenon to be effected, not the child's focus.

In targeting the child's incapacity for her intervention, the teacher constructed an exchange or sequence of exchanges that could contribute to the amelioration of the disability. The analysis of prototypical examples indicated that the teacher would do little more than elicit further evidence of the child's disability without providing the child with a vehicle for overcoming whatever difficulties they might have been having. It is in this sense that the teacher might have been attempting to build on the child's focus, but in a manner that was not to his or her benefit.

There are a number of arguments that suggest that teachers who pursued educational goals, both while supervising and when in participatory interaction, were not contributing to the child's

development in play. These arguments involve two related issues: 1) the notion of constructing the child to be mentally retarded; 2) Vygotsky's notion that learning takes place in the zone of proximal development.

Constructing the Child to be Mentally Retarded

The group of teachers who pursued educational goals, both while supervising and when in participatory interaction, were interacting with mentally retarded children. There were no teachers from the nondisabled group who were found to be pursuing educational goals most frequently. During the interview it was clear that the teacher considered the child to lack a certain ability, to be deficient at something. Yet the examination of the teacher's interventions indicated that, frequently, the teacher's intervention only accomplished the goal of having the child display evidence that they did in fact have difficulty.

For example, the teacher (JD, Example 5) who talked about the child who was overly aggressive in how he got other children to join his play only prevented the child from carrying out his plan to round up other children. The child's plan was treated as an extension of his "problem." Her intervention prevented the child from accomplishing his goal, but did not provide an alternative way of accomplishing the same goal but in a more appropriate fashion. In treating the child's plan as an aspect of his problem, she constructed the child to be, at that moment, a child with a problem; she did not provide him with a way of being a child without the problem.

Similarly, when the teacher (TF, Example 13) repeatedly told a child who was filling a truck with sand to take the truck to the dump, her only accomplishment was further evidence that the child had difficulty sequencing his actions. The child's inability to follow her directives was taken as further evidence that he did in fact have difficulty. The teacher was successful at constructing the child to be incapable; she was not successful at enabling the child to be capable.

While the child's mental retardation may contribute to the difficulties, it is also true that the environment, in the form of objects or people, can provide a supportive context that successfully enables the child to overcome their difficulty (Hood, McDermott and Cole, 1980). It is in this sense mental retardation is as much inside the child as it is in the teacher's interventions. If the teacher can organize the environment in such a way that whatever the child's difficulty is, that difficulty can be overcome, then the teacher is functioning as an external support system. The teacher can play a role in organizing the environment in such a way that the child's disability is not manifested. The teacher functions much like a researcher who is able to have a child display skills that previous research had indicated the child did not have. By manipulating the objects, the phrasing of questions, or the experimental setting, the understanding of the child's capacities is changed (Labov, 1972; Donaldson, 1978). When the teacher intervenes to only have the child's difficulty be displayed, then she is functioning as part of a system that elicits the child's disability. It is in this sense that the teacher constructs the child to be disabled.

Zone of Proximal Development

In Wertsch's (1985) discussion of the Vygotsky's notion of the zone of proximal development, he argues that in order for interpsychological functioning to occur there must be some overlap in the participant's definition of a situation. How is a child to share an adult's definition of the situation? The notion of intersubjectivity is invoked as the mechanism by which the adult and child construct, negotiate, and maintain a working consensus about the meaning of a situation. As individuals, each participant will no doubt understand objects and actions differently, but there is enough of an overlap for them to interact. When a working consensus breaks down, there are mechanisms for repairing the alignment. The working consensus enables the adult and child to share some understanding of a situation, despite whatever differences they may have as individuals.

Those teachers who were pursuing educational goals when in participatory interactions with children intervened to have the child reframe or redefine the situation so that it accorded with that of the teacher's. The child was typically oriented toward acting on an object in a particular way--filling a truck with sand, building a tower, etc. The teacher typically intervened to engage the child in a pedagogical exchange--defining the situation and hence, the meaning of the objects, in a radically different manner. In order to answer the teacher's questions the child had to re-orient to the objects; the objects were not things-to-use, but things-with-qualities-that-the-teacher-was-asking-about.

In order to have the child re-define the situation, the teacher frequently had to massively intrude on what the child was doing. For example, in order to get a child to connect the word "push" with the act of pushing--a language learning task--the teacher (GC, Example 4) intervened to mismatch the child's filling of a pail with sand, take his hand, and push it in the sand. The child became a passive bystander to his play while the teacher made use of his hand. Another example was seen in the transcript of SS (Example 6). The child was filling a truck with sand, and the teacher asked if he could think of something that might make his filling go quicker. In order to show this to the child, she took the object he was using out his hand, replaced it with a bucket, guided his hands holding the bucket through the sand, and then steered the bucket, still being held by the child, to a nearby child's truck, and dumped the sand into it. During the interview she explained how she was experimenting with vocabulary words. The child's actions were forced to conform with her definition of the situation. The teacher forced the child to perform a series of actions in order to have him be aligned with her definition of the situation.

The issue of sharing a definition of the situation touches on the related notion of the "fit" between the teacher's intervention and the child's focus. In the zone of proximal development a teacher may be considered to be the expert who is providing a level of guidance to the child or novice. Such a model teacher provides a level of guidance that takes into account the child's understanding of the situation, but extends the child's focus so that, over time, the child will more

nearly approach the definition of the situation that the teacher has. In this investigation, the teachers who pursued activity goals showed evidence of tailoring their interventions to the child. For example, when a child had difficulty lifting her pail to unvel a sand castle, she asked for the teacher's assistance (MB, Example 11). The teacher commented during the interview that she merely put her hands on the pail, and it was actually the child who did the lifting. The teacher was able to provide a level of assistance that took into account the needs of the child, while maintaining a level of challenge that satisfied the teacher's sense of what the child could do.

In contrast, teachers who pursued educational goals did not evidence an orientation to tailoring their interventions to the child's needs. For example, TF (Example 13) repeatedly directed a child to take his truck to an imaginary dump when they were in a sandbox. She characterized the child's play, during the interview, as being repetitive. In her effort to extend his play, she only oriented to the larger goal of getting the truck to the sandbox. She did not tailor her intervention to his perceived difficulty in not responding to her directive. She did not, for example, break the larger goal into component parts, nor did she provide a larger context that might have given more meaning to her directive.

Similarly, in the example of JS's (Example 14) repeated attempts to get children with limited verbal abilities to talk more, she was quite limited in what she accepted as an answer to her question. To her repeated question, "What are you doing?" the child provided two answers: "making" and "building." While both were responses, the

teacher did not accept them as such. If a child has limited verbal skills, then presumably the scope of acceptable responses should be enlarged. The strategy of gradually expecting a more sophisticated response over time has been shown to be an effective mechanism for extending a child's abilities (Bruner and Ninio, 1978; Bruner and Sherwood, 1976). Yet this teacher showed evidence of mismatching the child's level of ability despite her more explicit awareness that the child had difficulties.

Related to the notion that the expert tailors interventions to the perceived needs of the child, is the notion that, over time, the child becomes more able to perform parts of the task previously handled by the expert. Over the course of a single rendering of the task, or over many trials, the child is provided with opportunities to increasingly regulate his own performance.

In a number of the examples cited it is difficult to either conceive of the child as an active participant, or to conceive of the activity as ever allowing for the child to increasingly regulate his own performance. For example, MS (Example 15) engaged a child in a game of paddle ball. In the analysis of their interaction it was found that in the end the teacher not only threw the ball, but also held the paddle. The child's role in the play was effectively reduced to being a mere bystander. Can one really consider the child to be an active participant in the play? Similarly, in the example of SS (Example 6), where the teacher guided the child's hands through a number of steps in her effort to get him to fill a truck with sand, is the child to be considered a participant?

If the zone of proximal development is a learning context, when is the child's role below the threshold of participant, thereby negating the possibility of learning? Consider the following quote from LCHC (1981):

At the outset, for any problem, the social environment may seem to be doing more than its share of the work, but progressively, the achievements of the child and mother in interaction with each other (with the mother carrying a heavy cognitive load) are transformed into achievements of the child, with the mother a distant prop. (p. 703)

The examples cited (Examples 5 and 6) raise the problem of determining when there is enough participation on the child's part to consider the zone of proximal development to be truly interactive. While the teacher may become a distant prop at some end point, what happens when the child is a distant prop?

The second question concerns a basic tenet of the zone of proximal development: one of the goals of the expert is to guide the child through an activity so that the child can eventually carry out the activity on their own. The teachers who intervened on the child's play in order to engage the child in a pedagogical exchange were typically requesting information in the form of a series of elicitations. Elicitations are vehicles that teachers use for teaching (Mehan, 1979; Sinclair and Coulthard, 1975). These are questions that the teacher knows the answer to, but are used to assess the child's abilities. For example, MW (Example 1) asked the child, "where's the red block" in order to see if the child could transfer her knowledge of color terms from the classroom to the playground. SS (Example 2) asked the child, "This train is nice and sm--," attempting to elicit the child's knowledge of labels for textures. In what activity are the teacher and

child engaged? In what activity is the teacher enabling the child to become a more skilled participant? If the child is engaging in digging in the sand, or building a tower, then the teacher is certainly not participating in, nor contributing to, the child's ability to pursue these activities. Nor does the teacher appear to be guiding the child through a verbal exchange with the goal of enabling the child to ask similar questions at some later time; the teacher is not expecting the child to name colors or detail the texture of toys while they are building or digging.

In their discussion of the zone of proximal development, LCHC (1981) indicate that the adult will make important aspects of an activity salient to the child in the effort to create a more skilled child. The notion of saliency relates back to the issue of how a situation is being defined, and therefore what kinds of information are to be made salient. The teachers in the two examples cited (Examples 1 and 2) appear to be engaged in the pedagogical exercise of building on and enlarging the child's lexicon. Perhaps these teachers are oriented toward the goal of enabling the child to become more skilled at categorizing the world along the dimensions of color or texture. As such, colors and textures of objects become the salient pieces of information to be included as topics of communication. Whether such information is relevant to the child's definition of the situation is not apparent. Therefore, it is not apparent whether the teacher's interventions will actually lead to the child becoming more skilled at the pedagogical activities she is pursuing.

While teachers who pursued activity goals in participatory

interactions appeared to be participating with children in the zone of proximal development, and both groups of teachers who pursued educational goals appeared to evidence different degrees of mismatch in the zone of proximal development, it is unclear how to understand the nature of the role of those teachers who pursued supervisory goals while supervising children. These teachers were defining the situation in terms of managerial issues.

One might consider them to be presenting a play situation to the child, making a play setting available and allowing the children to explore the possibilities on their own. Children would then be largely regulating the content and quality of the play; and in this scenario the teachers would be more like the distant props that LQHC (1981) describe. However, such a description would be an oversimplification. The teachers were not props. They were found to be not aligned with children 30% of the time. The teachers were limiting the freedom to play where the child pleased, and were limiting the child's choice of how to play when it conflicted with the group's activity. When the child was pursuing a line of action that did not bring them into conflict with the group, then it appeared that the teacher functioned more as a prop. The non-aligned moments appear to be a mechanism whereby children are forced to see themselves not as individuals with individual interests, but as members of a group.

The study of social play, or peer interaction, typically is concerned with the development of the child's ability to contribute to and build on the contributions of the other. To be social is to have the capacity to contingently respond to the other's initiations (cf.

Garvey, 1976). Supervising teacher's interventions that prevented a child from pursuing their individual interests focus on an alternative aspect of social play. This aspect is less concerned with how individuals establish a shared topic, and is more concerned with being made aware of one's relationship to a group, even when direct interaction is not being pursued. It is almost when the child is not interacting with other children, when he is going against the grain of the dominant group activity, when he is pursuing a solitary agenda, or a minority agenda, that he is suddenly made aware of the fact that he is part of a larger group, and is forced to be aligned in some general way with this group. He is being made aware that he is a member of a group, whether he wants to be or not.

Conclusion and Directions for Future Research

If play is considered to be a context for learning, and adults have a role in the construction of such contexts, the future research must continue to explore the caretaker-child play. That schools provide play settings, and a portion of the day is set aside for the use of such settings, then teacher-child play interactions should continue to be studied.

One of the major findings of this research project has been that many of the teachers of mentally retarded children defined the play setting as an educational one. Such a definition appeared to have consequences on how the child's play was regarded. The qualitative analysis of these educationally oriented teacher-child interactions suggested that teachers were not aligned with the child in his or her

zone of proximal development. The mentally retarded child is thus deprived of a potential source of developmental input. In contrast, teachers who pursued activity goals, or supervisory goals, regardless of whether the child was mentally retarded or not, seemed to be working within the child's zone of proximal development. Thus, there were differences in the quality of the interaction depending on how a situation was defined by the teacher.

In light of these findings, future research should investigate whether teachers who pursue educational goals do mismatch the child's abilities as often as was found in this research study. If teachers of the mentally retarded typically do pursue educational goals, and their interventions typically mismatch the child's focus or his level of ability, then there is reason to shift the emphasis of future research. Rather than documenting the developmental lag of mentally retarded children in their play, research should shift to how the social environment may inadvertently contribute to this lag.

Of course teachers are not the only sources of input to a child's development in play. Nor is the playground the only setting in which play occurs. Future research should then also seek to discover those people--peers, siblings, and parents--who frequently play with children. So too should other settings in which play occurs be investigated.

ENDNOTES

1. Thirty teachers originally participated in the study (10 from each group). They were videotaped as they interacted with their children. When later asked to be interviewed, all agreed. Upon attempting to contact the teachers, six proved to be impossible to contact. Repeated telephone calls, and subsequent letters, attempted to solicit their further cooperation, but went unheeded.

2. The cross-classification of teachers yielded one teacher (of 3- to 5-year-old mentally retarded children) who displayed a unique result. While she was found to engage in directive exchanges most of the time, the majority of her interview responses expressed activity goals. The reason for this is clear when viewing the videotape while listening to the interview. The videotape captures the teacher largely in transition between activities; thus the teacher was involved in mostly directive exchanges. During the interview the teacher spoke of how she was attempting to elicit the child's choice of what to do next. The directive exchanges were thus framed by the teacher as an activity. Since this is the only case of such a pairing of interview and interactive data, the analysis will treat this as a special case, and not include this teacher in subsequent analyses.

APPENDIX I

The following table contains the profiles of individual teachers. The table displays the proportion of all time in exchange sequences with children spent in either participatory exchanges or directive exchanges. All the teachers in the following table were observed to be in participatory exchanges with children most frequently. This data, in combination with data displayed in Appendix III, was used to cross-classify teachers.

Table A

Individual Profiles of Teachers Who Engaged In Participatory Exchange Sequences Most Frequently

Group	Subject	Participatory Exchanges	Directive Exchanges
3-5 ND	CC	.94	.06
	MB	.74	.26
	GP	.89	.11
3-5 MR	GC	.95	.05
	SS	.75	.25
	MW	.75	.25
	DH	.62	.38
	MF	.81	.19
6-8 MR	JD	.61	.39
	DC	.95	.05
	DL	.50	.50

Note. Numbers represent proportion of total time in exchange sequences spent in either focused or supervisory exchanges for each subject.

APPENDIX II

The following table contains the profiles of individual teachers. The table displays the proportion of all time in exchange sequences with children spent in either participatory exchanges or directive exchanges. All the teachers in the following table were observed to be in directive exchanges with children most frequently. This data, in combination with data displayed in Appendix IV, was used to cross-classify teachers.

Table B
Individual Profiles of Teachers Who Engaged in Directive Exchange
Sequences Most Frequently

Group	Subject	Participatory Exchanges	Directive Exchanges
3-5 ND	AB	.08	.92
	MD	0	1.0
	RW	.05	.95
	WW	0	1.0
	ME	.35	.65
3-5 MR	JH	.38	.62
6-8 MR	TF	.04	.96
	JS	.13	.87
	VC	.20	.80
	MS	.31	.69
	EK	.39	.61

Note. Numbers represent proportion of total time in exchange sequences spent in either focused or supervisory exchanges for each subject.

APPENDIX III

The following table contains the interview profiles of teachers who were observed in participatory exchange sequences most frequently. The table displays the percentage of each teacher's interview responses in each of the three categories (educational, activity, or supervisory goals). Teachers in the following table were found to express either educational or activity goals most frequently. This data, in combination with data displayed in Appendix I, was used to cross-classify teachers. For example, the first entry in Table C is subject GP, who activity goals more frequently than either of the two other interview response categories. GP was therefore included in the Participatory-Activity group of teachers.

Table C

Individual Profiles of Teacher Interview Responses for Teachers Observed in Participatory Exchange Sequences Most Frequently

Group	Subject	Interview Response Category		
		Educational Goal	Activity Goal	Supervisory Goal
3-5 ND	GP	.19	.75	.06
	MB	.31	.42	.27
	CC	.44	.52	.04
3-5 MR	GC	.42	.26	.32
	SS	.57	.12	.31
	MM	.65	.35	0
	DH	.27	.54	.19
	MF	.37	.51	.11
6-8 MR	JD	.56	.38	.06
	DC	.18	.64	.18
	DL	.32	.36	.32

Note. Numbers represent percentage of all interview responses for each individual in each response category.

APPENDIX IV

The following table contains the interview profiles of teachers who were observed in directive exchange sequences most frequently. The table displays the percentage of each teacher's interview responses in each of the three categories (educational, activity, or supervisory goals). Teachers in the following table were found to express either educational or supervisory goals most frequently. This data, in combination with data displayed in Appendix II, was used to cross-classify teachers. For example, the first entry in Table D is subject WW, who expressed supervisory goals more frequently than either of the two other interview response categories. WW was therefore included in the Directive-Supervisory group of teachers.

Table D

Individual Profiles of Teacher Interview Responses for Teachers
Observed in Directive Exchange Sequences Most Frequently

Group	Subject	<u>Interview Response Category</u>		
		Educational Goal	Activity Goal	Supervisory Goal
3-5 ND	WW	.33	0	.67
	AB	.23	.19	.58
	ME	.29	.12	.59
	MD	.08	.42	.50
	RW	.44	.06	.50
3-5 MR	RP	.15	.05	.80
	JH	.33	.07	.60
6-8 MR	TF	.68	.18	.14
	JS	.61	.18	.21
	VC	.69	.06	.25
	MS	.78	.11	.11
	EK	.43	.31	.26

Note. Numbers represent percentage of all interview responses for each individual in each response category.

APPENDIX 5

The following are the conventions used for the transcription of videotaped interactions:

- ¶ Overlap of one speaker's utterance with the other
¶
- | End of utterance is spoken with intensity
- ? End of utterance has a rising intonation
- self-interruption
- () Text inside of parentheses denotes non-verbal behavior
- [] Text inside of brackets is uncertain transcription

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