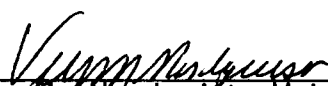
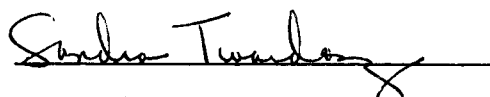


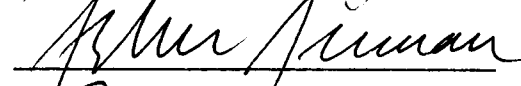
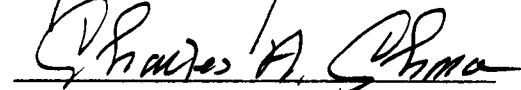
To the Graduate Council:

I am submitting herewith a dissertation written by Deborah A. L. Koshansky entitled "Social and Deviant Behavior of Nonhandicapped Peer Tutors in an Integrated Early Education Setting." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Home Economics.


Vey M. Nordquist, Major Professor

We have read this dissertation
and recommend its acceptance:



Accepted for the Council:


The Graduate School

SOCIAL AND DEVIANT BEHAVIOR OF NONHANDICAPPED PEER TUTORS
IN AN INTEGRATED EARLY EDUCATION SETTING

A Dissertation
Presented for the
Doctor of Philosophy
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Deborah A. L. Koshansky
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ABSTRACT

Part of the rationale for integrating young handicapped children into regular early education settings is that nonhandicapped children will benefit in various ways from interaction with handicapped children. In the integration process, nonhandicapped children often serve as formal participants by acting as models, tutors, or agents of reinforcement in the educational programming for handicapped children. In the present study, the social behaviors of the peer tutors and a group of control peers were examined prior to and during the enrollment of handicapped children in an early education setting. Eight peer tutors participated in formal small group activities with a handicapped child on a daily basis for 8 months. Four control peers interacted informally with the handicapped child. Videotapes of the children's behavior over the 8-month period were scored for prosocial and deviant behavior. The spontaneous social behavior of preschool children was not affected, either positively or negatively, by their participation in integrated activities with a severely handicapped child. None of the positive or negative effects of the integrated programming predicted by other researchers were observed.

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CHAPTER I

INTRODUCTION

During the 1960s, there was a significant upsurge of interest concerning early educational programs because empirical evidence supported the theoretical conviction that developmental processes and behavioral responses undergo rapid change during the early childhood years (Bijou & Baer, 1961, 1965; Hunt, 1961; Karnes & Lee, 1979). Thus, optimum early stimulation was thought to be crucial for later development.

Recognizing the importance of early stimulation, investigators first began designing educational programs for disadvantaged children (Deutsch, 1964; Edwards & Stern, 1970; Karnes, 1970). Soon, other researchers extended the programs to children who had mental (Hayden & Haring, 1976), emotional (Burke, 1972), sensory (Tait, 1972), and physical (Connor, Williamson & Siepp, 1978) handicaps. As a result of these programs, it became increasingly evident that early intervention programs could influence greatly the future development and independence of handicapped children (Peterson, 1978).

Public commitment to the education of young handicapped children soon was evidenced in the increasing number of early education programs. By 1970, a network of programs serving young handicapped children (First Chance Programs) was funded by the Bureau of Education for the Handicapped. At about the same time, states began to pass laws requiring that educational services be provided equally to

handicapped and nonhandicapped children. Several states passed laws requiring that special services be delivered to handicapped children below the age of 5 years. For example, the state of Tennessee passed a law in 1972 that mandated educational services for handicapped children from the ages of 3 to 21 years. Public Law 94-142 provided a federal endorsement with the passage of the All Handicapped Children's Act (1975). The federal law firmly established the responsibility of all state and local education agencies to respond to the special educational needs of handicapped children between the ages of 5 and 21. This law extended the mandate to younger children in states that had laws that mandated special services for them.

Concurrent with the increasing attention paid to the delivery of educational services to young handicapped children was a trend away from educating handicapped students in special classes and toward mainstreaming the handicapped children into regular classes for a portion of the school day. Karnes and Lee (1979) recently outlined several of the factors that affected this trend: (1) litigation focusing on the social inequality of segregated services for the handicapped (Cohen & DeYoung, 1973), (b) reassessment of the mediocre records of achievement of children in self-contained special education classes (Cjelka & Tyler, 1970; Dunn, 1968), and (c) a growing commitment among special educators to the principle of normalization (Wolfensberger, 1972).

Mainstreaming soon gained acceptance among early childhood educators as well as elementary and secondary special educators. Programs integrating handicapped and nonhandicapped preschoolers emerged in

the early 1970s (Bricker & Bricker, 1972, 1973; Karnes, 1970). In 1972, Head Start programs were required by federal law to maintain a population ratio of 1 handicapped child to 10 nonhandicapped children. In addition, regular day care and preschool programs began accepting handicapped children where these children had been denied admission previously. The popularity of mainstreaming in preschool programs continued to grow despite a paucity of research documenting its effects. Most studies were focused on mainstreaming in elementary and secondary school programs. Studies of early mainstreaming programs were particularly scarce and those available were focused primarily on the effects of integrated programming on handicapped preschool children (Apolloni & Cooke, 1975; Bricker & Bricker, 1971, 1972, 1973). In a literature review on the effects of integrated preschool programs, Wynne, Ulfelder, and Dakof (1975) stated that much of the literature of preschool mainstreaming was "evaluative" rather than "empirical." During the past 8 years, the quality of the research has improved considerably, but handicapped children have remained the focus of most studies (Fredericks et al., 1973; Guralnick, 1978; Ipsa & Matz, 1978).

Rationale

The rationale and educational techniques that support early mainstreaming require the repeated participation of nonhandicapped children in the integration process. Nonhandicapped children participate either informally as playmates, formally as models and tutors (Guralnick, 1976a, 1976b; Snyder, Apolloni & Cooke, 1977), and/or as

agents of reinforcement (Johnston & Johnston, 1972; Wahler, 1967). It has been assumed that nonhandicapped children benefit from exposure to and interaction with handicapped children. They presumably become more understanding of and tolerant toward handicapped children while continuing to progress developmentally in all major skill areas. However, few studies have actually been focused on either the attitudinal or behavioral effects of early mainstreaming on nonhandicapped children (Bricker, 1978; Guralnick, 1978). The limited information available seems to indicate that no negative effects occur, but that the findings are cursory and inconclusive at best (Strain, Cooke & Apolloni, 1976).

At the present time, nothing is known about the effects of early mainstreaming on nonhandicapped children's attitudes toward handicapped children. Examination of the long-term behavioral effects of early mainstreaming on nonhandicapped children is warranted also. Formal participation in the integration process, either as tutors, models, or agents of reinforcement, may affect nonhandicapped children. Generally, in previous studies nonhandicapped children were chosen to participate formally because they were cooperative, had well developed social or play skills, and had good verbal ability. It was thought that these skills would enhance modeling, tutoring, and reinforcement effects. In addition, it was believed that children who were intellectually and behaviorally more advanced would be more willing to participate as models, tutors, and agents of reinforcement when compared to nonhandicapped children whose intellectual and behavioral abilities were less advanced.

As early mainstreaming programs expanded in the 1970s, parents and educators began to be concerned about the possible negative effects of mainstreaming on nonhandicapped children. The opponents of early mainstreaming argued that the social development of nonhandicapped children might be arrested if they were required to interact frequently with handicapped children (Guralnick, 1978). Another concern was that "reverse" imitation would occur, that is, nonhandicapped children would imitate the deviant behaviors of their handicapped peers (Peterson, Peterson & Scriven, 1977). The information that is available indicates that reverse imitation is not likely to occur (Peck, Apolloni, Cooke & Raver, 1978), and that preschool children tend to imitate nonhandicapped rather than handicapped peers (Peterson et al., 1977). However, the long-term possibility of reverse imitation was not addressed in any studies. Finally, many parents and professional expressed concern that teachers might give preferential treatment to handicapped children and to the nonhandicapped children who interacted with these children in formal ways at the expense of nonhandicapped children who interacted in informal ways (Carden-Smith & Fowler, 1983).

Purpose of the Study

The purpose of the present study was to address in an exploratory way some of the effects of early mainstreaming on nonhandicapped children. Specifically, it was designed to answer the following questions:

1. How are nonhandicapped children who are formally involved in the integrated process affected by their participation when they are compared to children who are informally involved?

2. If nonhandicapped children are affected by formal involvement in the integration process, what is the nature of the effects and do they change over time?

3. Do behavioral characteristics (for example, cooperation, well developed social and communication skills) of nonhandicapped children who are formally involved in the integration process predispose them to behave differently over time as compared to nonhandicapped children who are involved in the integration process only on an informal basis?

4. Do teachers attend differentially to nonhandicapped children who are formally involved in the integration process compared to nonhandicapped children who are not formally involved?

Conceptual Definitions

Mainstreaming refers to the temporal, instructional, and social integration of eligible exceptional children with normal peers based on an ongoing, individually determined, educational planning and programming process and requiring clarification of responsibility among regular and special education administrative, instructional and supportive personnel (Kaufman, Gottlieb, Agard & Kusic, 1975). In the popular literature and media, mainstreaming is used in reference to the placement of handicapped children in the regular classroom without the attendant programming implications. This popular definition was not

used in the present study. Early mainstreaming refers to any program which serves handicapped and nonhandicapped children who have not reached the first grade. In the present study, it refers to a preschool program. Preschool refers to early integration programs that serve children between the ages of 3 and 5 years inclusive. Integration is a synonym for the term mainstreaming and is frequently used in the research literature. It is often used to differentiate between the popular conception of mainstreaming and its technical definition. Integration implies that program planning has been undertaken for beneficial interactions between handicapped and nonhandicapped children. Formal integration refers to the repeated participation of nonhandicapped children in planned activities as models, tutors, or agents of reinforcement for handicapped children. Informal integration refers to spontaneous interactions that may occur between nonhandicapped and handicapped children which are not planned by teachers.

A handicapped child is one who suffers from a certifiable physical, social/emotional, and/or cognitive disability. In the present study, certifiable referred to the rules established by the Tennessee State Board of Education which are outlined in its Student Education Manual. A nonhandicapped child is one whose physical, social/emotional, and cognitive development progresses according to established standards of normal development. Peer tutor refers to a nonhandicapped child who participates formally in the integration process. The terms tutor and confederate are used interchangeably in the present study.

Social behavior is defined generally as both positive and negative behavior associated with the socialization process in which children

become increasingly able to relate to other persons in their environment. Prosocial behavior is that positive behavior that fosters helpful and harmonious relationships with others. Deviant behavior is that negative behavior that impairs the development of helpful and harmonious relationships with others.

Assumptions

In designing the present study several assumptions were made. First, it was assumed that early intervention and peer interaction was necessary for the optimal development of handicapped children. Second, it was assumed that an integrated program would provide the most effective educational experience for handicapped children. Third, it was assumed that it was necessary for nonhandicapped children to participate formally as peer tutors, models, and/or agents of reinforcement for handicapped children so that the maximum benefit of integrated programming would be realized by handicapped children.

CHAPTER II

REVIEW OF LITERATURE

A review of literature concerning the effects of formal participation in an integrated preschool program on the prosocial and deviant behaviors of nonhandicapped children should draw from several areas of research. First, the patterns of normal social development should be reviewed. Second, any effects of nonintegrated preschool programming on social behaviors should be documented. Third, because nonhandicapped children are often asked to serve as models, tutors, and agents of reinforcement for handicapped children, the effects on children participating in a teaching role on social behavior should be examined. Finally, the early mainstreaming literature should be searched for studies relating to the phenomena of "reverse" imitation and differential teacher attention. The information gleaned from the review of the literature should provide a rationale and guidelines for examining the effects of integrated programming on the prosocial and deviant behaviors of nonhandicapped children who are formally or informally involved in the integration process.

Development of Normal Social Behavior

Children develop socially through interaction with their environment. The family acts as a socializing agent by transmitting the customs, beliefs, knowledge, and morals of society. The family also lays the foundation for the child's social/emotional development. It is

within the family that the child learns how to relate to others (Cooper & Holt, 1982). As the child grows older, however, peers assume an increasingly greater role in the socialization process through the activity of play (Hartup, 1977, 1978).

Play as a Means of Developing Social Skills

Social skills are developed primarily through interaction with the physical and social environment. In a child's world, this interaction usually occurs during play (Cooper & Holt, 1982). LeFrancois (1977) viewed play as a fundamental and necessary part of a child's social activities. Even in infancy, every normally developing child engages in play (wriggling and watching fingers and toes, experimenting with sounds). Children engage in sequentially more complex play activities as they progress through early childhood, and the forms that play takes are increasingly social in nature. Play also sets the occasion for the practice and elaboration of language, cognition, and motor skills, all of which contribute in very fundamental ways to the development of social competence.

Peer Interaction

Early and current research shows that social skills are closely tied to other developing skills. Bridges (1933) and Vincze (1971) reported that infants as young as 2 months old visually attended to peers, and 3- and 4-month old infants have been observed to touch peers when placed next to each other (Shirley, 1933; Vincze, 1971). Although this behavior is not "social" in the sense that infants plan or initiate

interaction, they are similar to the behavior that infants display when they encounter interesting objects. These behaviors suggest that infants are aware of their peers and explore them much in the same way they explore objects. As they mature, however, their interest in peers steadily increases, much more rapidly than their interest in objects (Fundis, 1982). Furthermore, infants eventually show greater preferences for social than nonsocial objects, even when the social object is an immobile, unsmiling face (Gibson, 1969; Stechler & Carpenter, 1967).

Initially, infants respond to one another's vocalizations by smiling (Buhler, 1933). When they become mobile, they approach, follow, and reach for peers (Bridges, 1933; Durfee & Lee, 1973). Around 12 months of age they begin to display what most investigators consider true "social" behaviors such as offering and receiving objects and playing peek-a-boo and run and chase games with peers (Bridges, 1933; Durfee & Lee, 1973; Maudry & Nekula, 1939; Vincze, 1971). It has been suggested that these behaviors evoke feedback from a peer and help sustain the interaction (Bronson, 1975). Around the age of 14 months, infants use more sophisticated forms of reciprocal social interaction when they imitate and vocalize as if conversing with peers (Bridges, 1933).

Mueller and Vandell (1979) suggested that an infant's social repertoire is basically complete by the end of the first year. During the second year, the frequency and complexity of behaviors increase and children become progressively more adept at combining social behaviors (e.g., a smile with an offer).

By 3 to 5 years, children exhibit what Parten (1932) called associative and cooperative forms of play. Parten found that 3-year-old children engaged in associative types of play less often than 4- or 5-year-olds, who spent greater portions of their time playing cooperatively. Since both types of play require peer interaction, one could expect to find preschool age children (3 to 5 years) interacting on an average of 40% of the time during a free-play activity.

The only recent studies examining the patterns and frequency of preschool children's social play behaviors are replications of Parten's study. Barnes (1971) found that 3- and 4-year-old children engaged in associative and cooperative forms of play only 25% of the time compared to Parten's 40%. However, Rubin, Maioni, and Hornung (1976) presented data showing that 3- and 4-year-old middle class children did interact about 40% of the time during free play but lower class children of the same ages interacted about 25% of the time. Thus, frequency of peer interactions in early childhood may vary in relation to socioeconomic level. Barnes did not report socioeconomic data for his subjects, but the majority of Parten's subjects were from professional families. The general conclusion that can be drawn from early and recent studies of preschool children's peer interactions is that non-handicapped children can be expected to interact with one another about 40% of the time, on the average, during indoor free play.

Effects of Group Participation
on Social Skills Development

In many studies the social behaviors of young children were examined in group activities. Group participation often has been viewed as an important factor in the process of social development. However, research findings are inconclusive regarding this issue. Parten (1932) found a weak relationship between the children's dates of entry into school and their social participation scores. However, she found that while the length of attendance in nursery school did not indicate the extent to which any specific child interacted with other children, continued attendance appeared to bring about an increase in the degree to which children as a group participated in group activities. This suggests the possibility that group activities and peer interactions during free play are causally related. Several other studies have found increased interaction with increasing age but could not relate the increases to the effects of participation in specific group activities (Mallay, 1935; Clark, Wyon & Richards, 1969; Reuter & Yunik, 1973). There is no reason to believe, therefore, that children who participate in group activities will necessarily begin to interact more or less frequently with peers during free play. However, it is possible that the nature of the activity could be related to peer interactions. For example, Twardosz, Nordquist, Simon, and Botkin (1983) recently demonstrated that isolate children will interact more frequently with their peers if they participate in large group affection activities.

Nonhandicapped Children as Peer Tutors

The necessity of peer interaction for normal social development has been well documented (Hartup, 1977, 1978). Interaction with others of similar social and cognitive capabilities allows children to practice and refine skills that cannot be learned adequately in adult-child interactions. For example, the authoritarian nature of adult-child relationships precludes the use of aggressive behaviors which the child needs to experience in order to learn adequately the appropriate expression of aggression. Similarly, sexual socialization cannot take place without peer interaction (Hartup, 1978). Peer relations also contribute to the child's moral development (Kohlberg, 1964; Piaget, 1932) as well as emotional development (Roff & Sells, 1968).

The important contribution made by peer interactions to a child's development is often cited by proponents of early mainstreaming as a central reason for integrating handicapped and nonhandicapped children. Research indicates the mere placement of handicapped and nonhandicapped children together does not insure that modeling or interaction will occur (Devoney, Guralnick & Rubin, 1974). Early mainstreaming programs must be designed to facilitate imitation and interaction.

One method of promoting peer interaction is to use nonhandicapped children as "helpers" or peer confederates. Nonhandicapped peers, for example, increased the appropriate social behaviors of a withdrawn child who exhibited bizarre, self-directed behaviors by following him and

reinforcing his appropriate behavior (Guralnick, 1976a). A developmentally disabled child began to imitate the social behaviors of nonhandicapped peers when two nonhandicapped children taught him to imitate them using modeling and reinforcement procedures (Nordquist, 1978). When nonhandicapped peers, using specific verbal and motor techniques, initiated social interaction with six severely handicapped preschoolers, increases occurred in the handicapped children's initiations and interactions (Strain, Shores & Timm, 1977). In a replication study, Strain (1977) found the same results and also reported that the behavioral gains obtained by two of the three children generalized to a nontraining setting and were maintained for several weeks. The same procedures have been successful in increasing the social initiation and response of autistic children (Ragland, Kerr & Strain, 1978). There are numerous additional studies which document the positive effects that nonhandicapped peer confederates have on handicapped children's social behaviors (Strain, 1981).

Effects of Tutoring on Nonhandicapped Children

The previous studies supported the feasibility of using nonhandicapped peers in early mainstreaming settings to promote the social skills of handicapped children. These studies showed that peers can be trained to apply complex intervention strategies that result in increases in appropriate social behaviors of handicapped children. However, information relating to the effects of training and participation on the nonhandicapped children is limited.

Bricker and Bricker (1971) used standardized intelligence tests and parental evaluations to examine whether nonhandicapped toddlers might have been adversely affected by participating informally in an integrated program with handicapped peers. Only 2 out of 21 parents reported that their nonhandicapped children had been negatively affected by the integration process. Precisely how they were affected was not indicated.

Preliminary data collected by Guralnick (1977) indicated that the rates of constructive and appropriate forms of play did not decrease when nonhandicapped children played with handicapped peers. Using standardized test results and later school success as measures of the effects of integration on nonhandicapped preschool children, Guralnick (1978) found that "nonhandicapped children benefit from integrated programs to at least the same degree (and usually better) as would be expected if they had attended nonintegrated schools" (p. 138).

Although these preliminary findings are positive, more systematic and comprehensive investigations are needed. This is especially the case with regard to using peers as tutors. Strain, Cooke, and Apolloni (1976) stated that

ethical concerns became salient with the suggestion of child programming. Specifically, it becomes crucial to determine the effects on peers of their participation in behavior modification research with problem children. Few behavior modification researchers have monitored the effect of interventions on the peer confederates. Researchers and practitioners should be sensitive to the possible effects on peer participants in behavior modification projects. They should include methods by which to gauge any such outcomes, positive or negative. (p. 357)

Studies of "Reverse" Imitation

The possibility of reverse imitation in integrated early education programs has been a major concern to parents and educators (Peterson et al., 1977). However in only one study in the early mainstreaming literature was reverse imitation examined. Peck et al. (1978) trained retarded preschool children to imitate nonhandicapped peers using modeling and peer reinforcement procedures and found that the retarded children imitated the advanced children in generalization (free play) as well as training (small group) settings. More germane to the present study was the finding that neither nonhandicapped confederates nor other nonhandicapped children who did not participate in training imitated the deviant behaviors of the retarded children. However, the children were assessed for less than two weeks. In addition, the deviant behaviors of the retarded children occurred at low rates and were not distinctive in form. Thus, it is possible that nonhandicapped children, if exposed to more bizarre forms of behavior for longer periods of time, might begin to imitate them.

Differential Teacher Attention

Teachers do attend to handicapped children more frequently than nonhandicapped children in integrated early education settings (Carden-Smith & Fowler, 1983). Furthermore, the nature of teacher attention differs between handicapped and nonhandicapped children. Handicapped children receive more help and affection from teachers than nonhandicapped children (Ipsa, 1981), but nonhandicapped children

request and receive more teacher attention by "showing pride" in their work (Ipsa & Matz, 1978). Teachers may also attend more often to peers formally involved in the training process, even in situations outside of the training conditions. However, there are no studies in the early mainstreaming literature that address this possibility.

Summary

The development of normal social behavior is a complex process involving many factors. Of these, peer interaction is a primary one. Through peer interaction, children practice and refine their social behaviors. Normal children interact with peers and adults in progressively more sophisticated forms as they mature.

The rationale for integrated early education programs is based, in part, on the potential for interaction among handicapped and nonhandicapped children. Nonhandicapped children have been trained to act as models, tutors, and agents of reinforcement for their handicapped peers with the goal of enhancing the handicapped children's behaviors. Although the feasibility of using peer-mediated strategies for the benefit of handicapped children has been documented, concern has been expressed about the effects of these procedures on nonhandicapped children. Specifically, these concerns include the possibility of developmental arrest, "reverse" imitation, and differential teacher attention. There is very little research in the early mainstreaming literature that addresses these concerns. Moreover, the possibility that formal participation in the integration process may have adverse effects

on nonhandicapped children that evolve slowly over a period of several months has not been examined in the available literature.

CHAPTER III

METHODS

The present study was part of a larger research project conducted at the Child Development Laboratories at the University of Tennessee, Knoxville. This research project was a comprehensive examination of all facets of the integration of handicapped preschool children into a regular early childhood education setting. The present study focused on the effects of integration on the social behaviors of the nonhandicapped children.

Hypotheses

The present study was designed to test the following hypotheses:

1. There will be no evidence of developmental arrest regarding the social behavior of the nonhandicapped children over a period of 8 months in an integrated early education setting. That is, the social behaviors of the nonhandicapped peers will not be adversely affected by either formal or informal interaction with a handicapped child over a period of 8 months.

2. There will be no evidence of reverse imitation. That is, the nonhandicapped peers will not imitate the deviant behavior of the handicapped child.

3. The percentage of teacher attention displayed toward the nonhandicapped children who are formally involved in the integration process will not differ over time from attention displayed to children who are informally involved.

Experimental Design

A longitudinal design with three groups was used to allow for the analysis of changes in the behaviors within and among groups over time (Kerlinger, 1973). Assigned and random peers received experimental treatment but the control peers did not. Children assigned to the experimental groups participated in learning activities as peer tutors whereas the control subjects did not. The random group allowed a comparison of effects that might be attributed to differences in the subject selection process. A control group consisted of randomly chosen peers who did not receive the experimental treatment but who did have incidental contact with the handicapped child. This group controlled for the effects associated with the passage of time.

Subjects and Setting

The research was conducted in the preschool day care program of the Child Development Laboratories (CDL) at the University of Tennessee, Knoxville. The preschool staff consisted of one full-time teacher, three part-time graduate teaching assistants, one field work student, and one or two undergraduate students teachers per shift.

The daily schedule included large group, indoor and outdoor free play, small group, lunch, and nap routines. The population of the program consisted of 1 handicapped child and 22 nonhandicapped children whose ages varied between 31 and 58 months.

Twelve of the nonhandicapped children participated in the study: six boys and six girls. Eight of the children acted as peer tutors.

Four of the children served as control peers. Boys and girls were equally distributed among the groups.

The peer tutors were further divided into two groups: assigned and random. The assigned peers were chosen on the basis of the teachers' observations of their well-developed social and play skills and generally cooperative behavior. This method of selection was used because it is the usual procedure described in the literature by people working in the area of integrated programming (Johnson & Bailey, 1974; Kern & Kirby, 1971; Mohan, 1971; Soloman & Wahler, 1973). The random and control peers were randomly selected from the remaining children enrolled in the day care center to provide a comparison of the differential effects that may have been because of any unique characteristics of the assigned peers.

The handicapped child was an 8-year-old autistic girl. At the age of 2½ years, she was diagnosed as autistic and enrolled in a behavioral training program at a local psychiatric hospital. At the time of her admission she showed no interest in people, could not talk, was not toilet trained, could not feed or dress herself, exhibited high rates of self-stimulation, and was impervious to adult instructions. After five years in the behavioral program, she was admitted to the CDL preschool program. At this time, her self-care skills were excellent, but her social, cognitive, language, and play skills were well below those of the nonhandicapped children in the program. She followed the same daily schedule as the nonhandicapped children except that during part of the day she was required to engage in preacademic and social activities with peer tutors and a teacher or field work student.

Behavior Measurement System

Two broad areas of child behavior and one area of teacher attention were monitored. Prosocial child behavior categories included social interaction, sustained attention, verbal interest, and assistance. Categories of deviant child behavior included self-stimulation, object stimulation, sustained noninteraction, and derogatory behavior. Teacher attention also was recorded continuously as it occurred. Some of the behavior definitions were adapted from a measurement system developed by Wahler, House and Stambaugh (1976). Abbreviated definitions of the behaviors are presented in Table 1, and complete definitions are given in Appendix A.

Subscripts were used with the social interaction code in order to identify the person to whom the peer tutors were directing their behavior. An adult was identified by the subscript "a," whereas individual children were identified by their initials.

In addition to the prosocial, deviant, and teacher attention measures, a record was kept of each peer tutor's rate of participation in the learning activities. This was done in order to show the distribution of participation across peer tutors so that some control could be maintained over the amount of participation by peer tutors who were members of random and assigned groups. If differences between these groups occurred, it was important to rule out the possibility that they could be attributed to more or less participation in the learning activities.

Table 1

Abbreviated Definitions of the Behavior Measures

Type of behavior	Name	Code	Abbreviated definition
Prosocial	*Social interaction	SI	Verbal and various nonverbal forms of interaction with adults and/or children
	*Sustained attention	SA	Observation of adults or children for 10 consecutive seconds
	Verbal interest	VI	Statements made or questions asked about the handicapped child that indicated special interest in her
	Assistance	A	Instances of help given to the handicapped child (either initiated voluntarily or requested by the handicapped child)
Deviant	*Self-stimulation	SS	Manipulation of body and/or repetitive motor movement
	Derogatory behavior	DB	Instances of annoying, negative teasing, mocking, or rejecting the handicapped child
	*Object stimulation	OP	Repetitive and stereotyped use of objects

Table 1 (continued)

Type of behavior	Name	Code	Abbreviated definition
	*Sustained noninteraction	NI	Absence of engagement with people or play materials for 10 consecutive seconds
Teacher attention	*Teacher attention	S	Physical, verbal, and other nonverbal contact made with subject by teacher

Note. All definitions with asterisk are adapted from the measurement system developed by Wahler, House, and Stambaugh (1976).

Apparatus

The peer tutors' behaviors were recorded on videotape by means of tele-telemetry. Three SONY cameras, each equipped with a Pelco zoom lens, were wall-mounted on Pelco pan/tilt units (model TV-J8C, mount PM 105) in the classrooms of the day care center. The cameras were located to afford the greatest possible range of room coverage. The cameras were remotely controlled by a trained student technician using a Pelco variable speed control panel (PT 1500-M Joystick) located in a room adjacent to the classroom. The panel allowed the technician to move the camera up and down or to either side as well as control the distance between the cameras and subject through operation of the zoom lens.

Audio voice signals were transmitted by a Vega wireless microphone and transmitter (Model 88) to a receiver (Model 89) located in the same adjacent room. The microphone and transmitter were pocketed in a smock-like jacket worn by the children. Prior to the study, the children were asked to wear the jacket several times to habituate them to its presence. The receiver was connected by a line to a Shure Audio Master (M63). An audiotape or prerecorded 10-second intervals was recorded on the videotape simultaneously with the audio voice signals. The 10-second intervals were used as cues to the observers to aid them in scoring the videotapes. Videotapes were recorded and played back on a SONY Videocorder (AV3600). For a more detailed description of the tele-telemetry system, see Nordquist, Kell, Girard, and Furbush (1978).

Data Collection

Videotaped samples of the 12 subjects' behavior were recorded once during the week immediately preceding the enrollment of the handicapped child in the day care center in October, and again at about 6 week intervals thereafter in November, February, April, and May. The schedule was altered somewhat by Christmas and spring vacations.

These samples were recorded during the morning and afternoon large group, snack, and indoor free play routines. Outdoor free play was not sampled because the tele-telemetry system did not have outdoor capability.

During each of the data collection periods, an effort was made to videotape every child for 5 minutes during the morning and afternoon routines. A week was scheduled for the videotaping because all the taping could not be accomplished in one day. The order of taping the children was randomly determined. At any given videotaping session, however, children from each of the three groups were sampled. Once determined, the same order was followed throughout each data collection period so that every child had the opportunity to be taped in each of the six daily activities. The plan was to videotape each child for a total of 30 minutes (5 minutes in each of the three morning and afternoon activities) per data collection period. However, because of absences, tardiness, or early departure, some children were not videotaped during every activity of each data collection period. As a result, an estimated 20% of the observations were not conducted as planned.

Observation Procedure

The observation method required an observer to enter a code on a checklist (see Appendix B) for the occurrence of each behavior within successive 10-second intervals. Only one unit of each behavior could be recorded during a 10-second interval regardless of the number of times the behavior occurred during the interval.

Observer Training

Two observers were trained to score the videotapes. They received course credit for their work. Neither of the observers was aware of the experimental nature of the research. Both had prior experience with naturalistic methods of observation and recording. The experimenter also scored one-eighth of the tapes.

The observers were given a copy of the behavior definitions and asked to study them carefully. When an observer indicated that she knew the definitions, she was administered a quiz (see Appendix C) to assure that she could apply them to written behavior examples. When an observer answered 75% of the questions correctly, she was asked to score several training tapes. When an observer could reliably score each behavior depicted on the videotapes, she was considered ready to score research tapes. Reliability was considered acceptable if an observer agreed with the experimenter on 75% of the occurrences of each behavior category.

Interobserver Agreement

Weekly interobserver agreement measures were taken throughout the study. During an interobserver agreement check, both of the observers scored the same tape. The observers were unaware that the same tape had been assigned to the other observer. Consequently, they did not know when the interobserver agreement checks were being conducted.

Interobserver agreement was computed for each behavior category using Harris and Lahey's (1978) formula for combining occurrence and nonoccurrence agreement scores.

The formula is:

$$WA = [(O \times U) + (N \times S)] \times 100$$

where O is the occurrence agreement score, i.e., the number of occurrence agreements divided by (the number of occurrence agreements + the number of occurrence disagreements); U is the mean proportion of unscored intervals, i.e., (the proportion of intervals not scored by Observer 1 + the proportion of intervals not scored by Observer 2) divided by 2; N is the nonoccurrence agreement score, i.e., the number of nonoccurrence agreements divided by (the number of nonoccurrence agreements + the number of nonoccurrence disagreements); and S is the mean proportion of scored intervals, i.e., (the proportion of intervals scored by Observer 1 + the proportion of intervals scored by Observer 2) divided by 2.

Interobserver agreement percentages for each behavior except verbal interest and derogatory behavior were obtained. Percentages for verbal interest and derogatory behavior were not included because neither behavior occurred on any of the interobserver agreement measurement tapes. The mean percentages of interobserver agreement for each behavior category were: social interaction with adults, 87%; social interaction with children, 81%; sustained attending, 78%; assistance, 100%; self-stimulation, 70%; sustained noninteraction, 81%; object stimulation, 49%; and teacher attention, 85%.

Procedures

Baseline

Conditions during the baseline period were those of a smoothly operating preschool program. Staff and children followed a regular schedule and participated in daily planned activities.

Intervention

The intervention period began with the enrollment of the handicapped child into the preschool program. The routine of the program remained the same except that activities planned for the handicapped child and the peer tutors were implemented.

Peer tutoring activities. Peer tutoring was conducted at various times in different activities, both in the morning and afternoon. In general, the peer tutoring was integrated into the regular routine of the day care center.

During the indoor free play period, the handicapped child, the teacher, and two of the nonhandicapped peer tutors engaged in a variety of learning activities. These activities provided training in the areas of letter and color recognition, sharing, social interaction, gross motor skills, and language skills. The peer tutors were thanked and praised for participating and given access to free play as a reinforcer for participating in the learning activity. The handicapped child was treated in the same manner.

Each of the learning activities lasted for approximately 15 minutes with the exception of incidental teaching; it lasted about 30 minutes. The academic activities were designed to meet the academic and social needs of the peer tutors as well as the handicapped child. All of the children worked on areas suited to their developmental levels. For example, while the handicapped child was taught letter recognition, one peer worked on recognizing lower-case letters and the other peer learned to assign sounds to particular letters. Different peers were used for each activity. When the same activities were conducted both in the morning and the afternoon, the same peer tutors participated whenever possible.

If for any reason the peer tutors were reluctant to participate in the activities, they were not forced to do so. Although none of the control peers were allowed to participate in the learning activities with the handicapped child, they were permitted to engage in the activities after the handicapped child had finished. The control peers were never discouraged from making incidental contacts with the handicapped child.

Letter recognition. One activity period during each of the morning and afternoon sessions was used to teach letter recognition. A variety of game-like activities was designed to teach this skill. The children worked on letters they did not know. The peer tutors were asked to model the correct response for the handicapped child when she produced an incorrect response. They were encouraged to provide verbal praise and/or physical affection when she responded correctly.

Sharing and social interaction. A second morning activity was designed to teach sharing and to promote social interaction with peers. As with the letter recognition activity, game or play situations were structured to prompt and reinforce the sharing of materials with peers. The peer tutors demonstrated sharing with each other, asked for materials from the handicapped child, and reinforced sharing behavior. A teacher supervised this activity and prompted and reinforced peers' appropriate behavior. The teacher also demonstrated how to prompt and reinforce sharing and gradually faded her demonstrations until the peer tutors were able to perform the behavior reliably.

When the handicapped child consistently shared her materials with the peers, the activity was discontinued. In its place, the handicapped child was required to seek out a peer tutor, ask the peer tutor to play with her and then participate with the peer tutor in an activity (such as playing dress-up or building blocks). A teacher supervised this activity in the same manner as the previous activity.

Gross motor skills. During the morning outdoor free play, gross motor skills were practiced. Peer tutors were asked to model and

participate in ball throwing, bicycle riding, swinging, running, and climbing activities with the handicapped child. Again, the teacher supervised each activity to prompt and reinforce the children who participated.

Color recognition. A fourth activity was designed to teach color recognition. It was conducted during the morning session. Initially, items of different colors (blue and red) were presented to the handicapped child. She was required first to imitate the teacher or peer tutor. For example, the peer tutor would hold a red block and say, "This is a RED block" with emphasis on the word "red." The activity progressed from imitative training to receptive training ("Give me the red block.") and eventually to expressive training ("What is this?").

The color recognition activity was not successful for several reasons. First, the peer tutors became bored. They knew their colors. Second, the handicapped child did not progress very well with learning her colors. Therefore, a game-like situation was introduced. The small group session consisted of games that the children played, during which they were asked periodically to identify certain colors. This allowed teaching the peer tutors more difficult color discriminations while at the same time training the handicapped child to discriminate basic colors. This proved to be more interesting to the peer tutors and initially to the handicapped child. However, the handicapped child still did not learn her colors. Therefore, an incidental teaching procedure involving only the teachers was employed to teach color recognition.

Language skills. Language training was conducted by the peer tutors during lunch time. The handicapped child was seated between two peer tutors. She was required to ask them to pass a particular food to her. The food was served family style so the children could serve themselves. To receive food, the handicapped child had to address the peers by their names, say "please pass the _____," and correctly name the food. If she reached for the food without asking, the peer tutor intercepted her and said, "What do you need to say?" When she responded correctly, the peer praised her and passed her the food. Finally, the handicapped child was required to say "thank you" before eating. When the peer tutors passed the food to the handicapped child, they allowed her to take only a small portion of food each time. This was done to ensure that she asked for food several times. Initially, the teacher modeled the desired response and prompted the behaviors of the handicapped child as well as the peer tutors. In a short time, however, the peer tutors learned to withhold food from the handicapped child until she asked for it properly.

Data Analysis

Percentages of each behavior for each group were computed by tallying the number of times a behavior was scored for each child during a session. The totals for all the children in the group were added together and divided by the total number of intervals observed.

If a child missed a videotaping session, no score was included for that session for that child. This occurred with the same frequency across groups and across time.

Visual inspection of the data in both graphic and tabular form was used. It was thought that any changes in the groups' rates of behavior large enough to be evident to visual inspection would constitute socially significant effects. Because the present study was exploratory and used a small number of subjects, the interest was in effects that would be large enough to be detected by community people.

CHAPTER IV

RESULTS

There was a total of 120 days when the handicapped child was present at the day care center and the learning activities were conducted. As a group the assigned peers participated in 351 learning activity sessions. Individual participation frequencies by the assigned group members were 139, 90, 82, and 40. The random group participated in a total of 340 learning activities. The individual participation frequencies of the random group members were 124, 76, 90, and 50. One peer in both the assigned and random groups sometimes participated in more than one learning activity per day. Consequently, their individual frequencies equal more than 120.

There was no significant difference between the frequency of participation in the learning activities of the assigned and random peers ($\underline{M} = 85.0$), $\underline{t}(5) = .108$, $\underline{p} < .05$.

Presentation of Data

The data for each behavior are presented in graphic and tabular form. Each graph depicts the mean rates of the same behavior recorded for all three groups during the morning and afternoon activity sessions prior to and after admission of the handicapped child. Tables 2-25 are presented in Appendix D. Listed in Tables 2-19 are the means and standard deviations for the behavior of one group during the morning and afternoon activity sessions. Teacher attention rates are listed in Tables 20-25.

Prosocial Behaviors

The data in Figure 1 are combined data for all the prosocial behavior measures by routines. The children in all three groups produced prosocial behavior at high rates during free play and large group and at a slightly lower rate during snack. No socially significant differences among groups were noted during free play and large group. During snack the random peers displayed a lower level of prosocial behavior during the November-February period and a higher level of prosocial behavior during the February-April period. During the April-May period, the random peers' level of prosocial behavior became more consistent with the other two groups' rates of prosocial behavior.

The prosocial behavior categories were analyzed separately and are presented in Figure 2 for each routine. Verbal interest and assistance occurred at extremely low rates. Of all the data collection sessions, over the 8 month period, verbal interest was scored only six times. Assistance was scored only once. Therefore, none of the data for these behaviors were graphed. The data in Figure 2 show that the frequencies with which the children in all three groups interacted with adults, interacted with children, and engaged in sustained attention were quite similar. No socially significant differences occurred within or across groups between preadmission and postadmission for any of the behaviors, and the frequencies were relatively stable over the course of the study.

In Tables 2, 3, and 4 (Appendix D) the means and standard deviations are listed for prosocial behavior for assigned peers, random

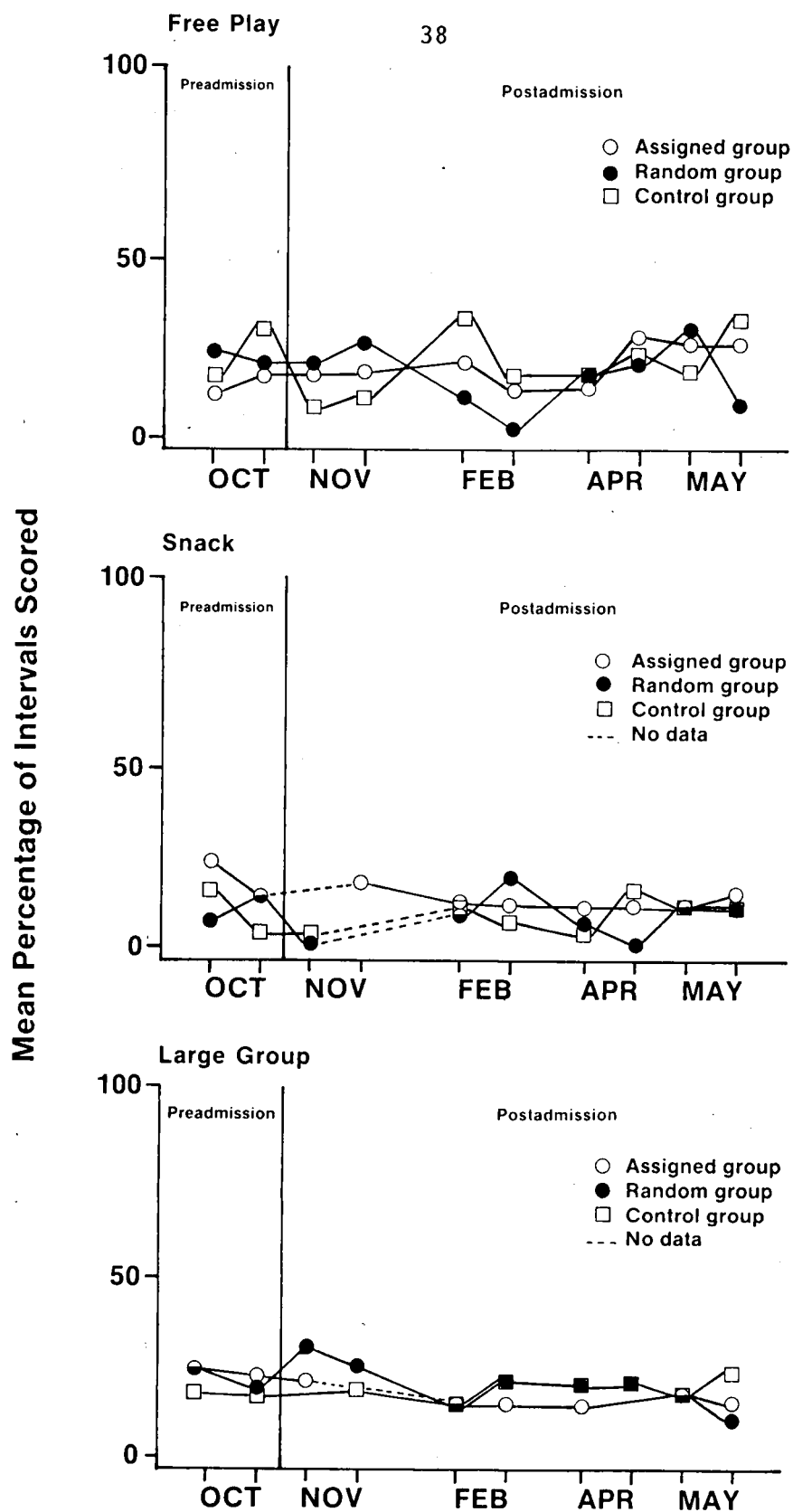


Figure 1. Mean percentage of 10-second intervals of prosocial behavior during free play, snack, and large group.

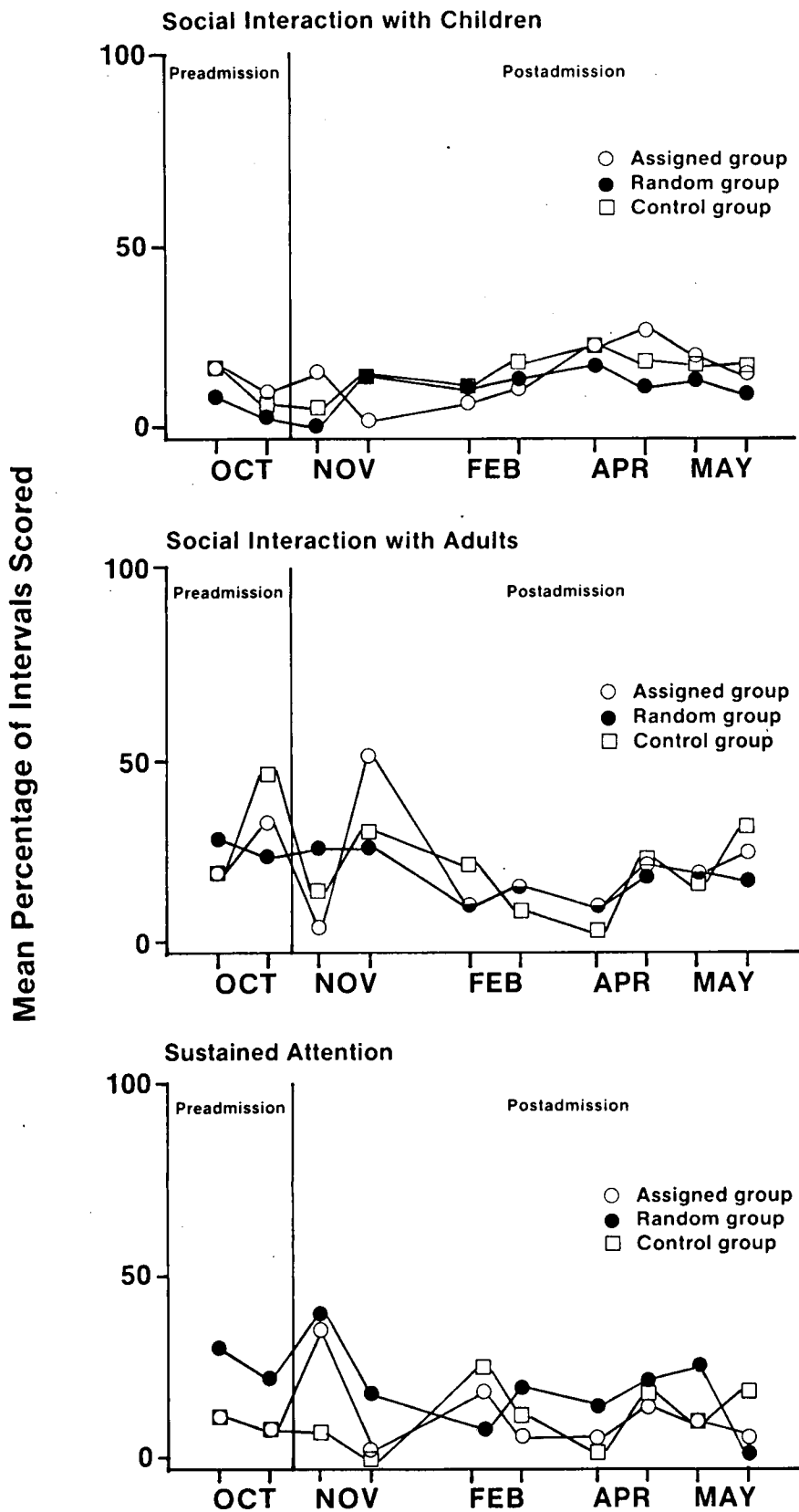


Figure 2. Mean percentage of 10-second intervals of social interaction with children, social interaction with adults, and sustained attention during free play, snack and large group combined.

peers, and control peers, respectively. For the most part, the standard deviations are high. However, examination of the children's individual frequencies of the behaviors shows consistency across the data collection sessions. Some children started with and maintained higher or lower rates of behavior than other children within their group. The high standard deviations, therefore, do not reflect differences among members of one group that can be attributed to the experimental procedures.

The data in Figure 3 show that generally the children in all three groups interacted with other nonhandicapped children during free play more frequently as the study progressed except for the last observation session for assigned peers. However, no corresponding increases in the frequency of social interaction with children occurred during snack or large group. The overall frequency of social interaction with children was greatest during free play and lowest during large group for all three groups. Means and standard deviations for social interaction with children are located in Tables 5, 6, and 7 in Appendix D.

Peers from all three groups did not spontaneously interact with the handicapped child very frequently. The instances of such interaction were so few that the data were not graphed. During the first two postadmission sessions (November and February), there were no instances observed of the children from any group interacting with her. During the April session of free play, there was one instance when a peer from the assigned group interacted with the handicapped child. This amounted to 1% of all the assigned peers' social interaction with

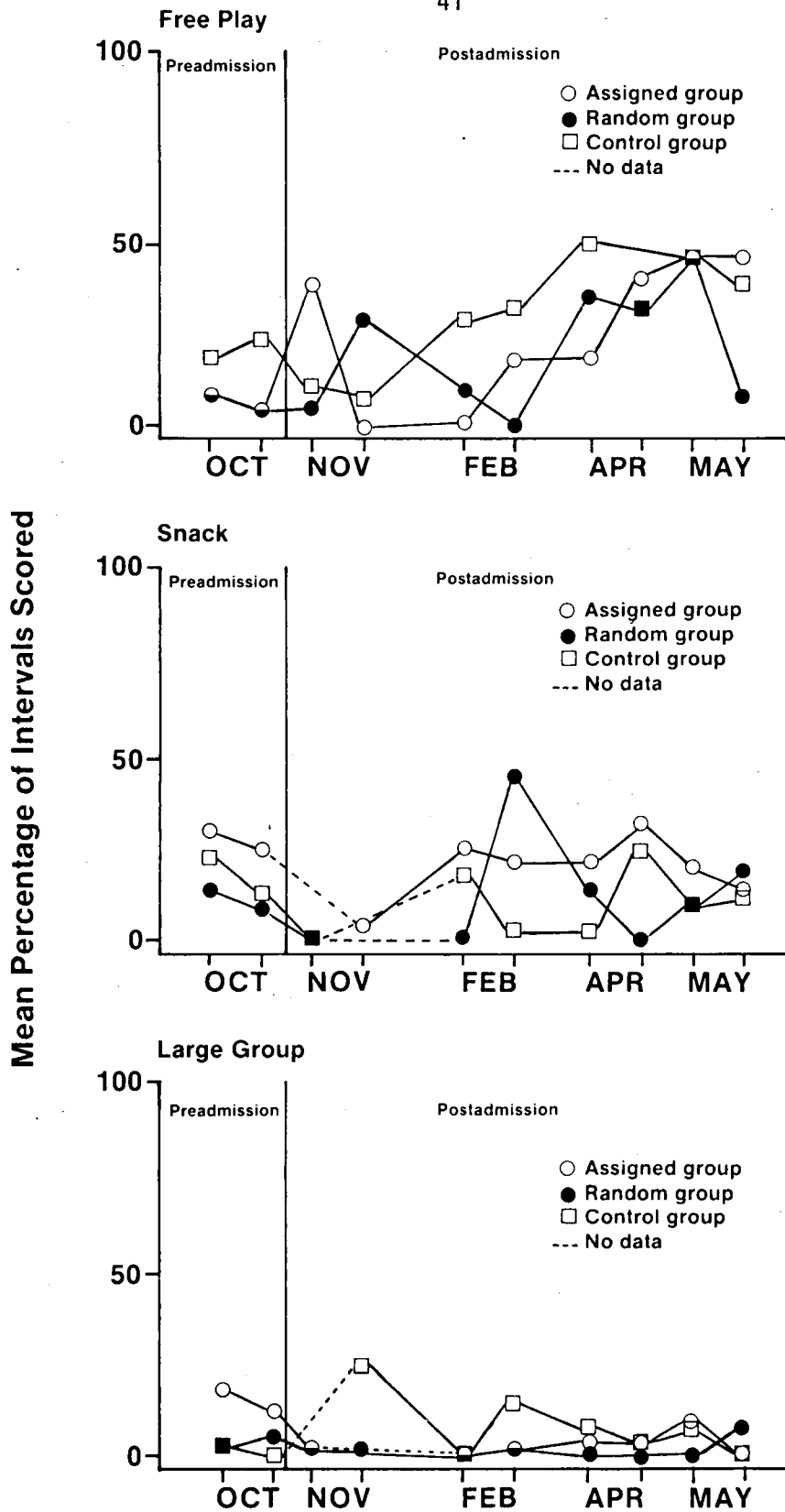


Figure 3. Mean percentage of 10-second intervals of social interaction with children during free play, snack and large group.

children. Also, in April a peer from the control group interacted with the handicapped child in large group on three occasions. This amounted to 3% of the control peers' social interaction with children. Similar patterns occurred in May. During large group, a peer from the random group interacted with her once. During snack, a peer from the assigned group also interacted with her once.

The data for social interaction with adults during free play, snack, and large group routines are listed in Tables 8, 9, and 10 (Appendix D). Children in all three groups interacted with adults to the greatest degree during large group compared to snack or free play. During free play, they interacted with adults at a greater rate than during snack.

The data presented in Tables 11, 12, and 13 (Appendix D) show the means and standard deviations of sustained attention in all three routines for assigned, random, and control peers, respectively. The children in all three groups engaged in sustained attention with the greatest frequency during large group. Sustained attention occurred at very low rates during free play and snack. No socially significant differences were noted among the three groups or within the groups between the pre- and postadmission sessions. The frequency of sustained attention appeared to remain stable over the course of the study.

Deviant Behaviors

The group means of the deviant behaviors of peers in the assigned, random, and control groups that were recorded during the

pre- and postadmission sessions are presented in Tables 14-19 (Appendix D). Four measures of deviant behavior were recorded: self-stimulation, object stimulation, sustained noninteraction, and derogatory behavior. During the 8 month period, derogatory behavior never occurred and thus was not included in the analysis.

Combined data of all the deviant behavior measures separated into activity periods for the assigned, random, and control groups are presented in Appendix D, Tables 14, 15, and 16, respectively. The children in all three groups produced deviant behavior more frequently during large group than during free play and snack. No socially significant differences were noted between the pre- and postadmission sessions for the random peers and control peers. The assigned peers showed a sharp increase in deviant behavior during the November afternoon observation session during free play. The frequency of this behavior returned to the baseline level in the next session and remained there for the rest of the study. The assigned group's rate of deviant behavior during snack and large group were similar to those of the random and control groups.

The bulk of the combined deviant behavior data came from the self-stimulation category. The children in all three groups produced more self-stimulation than sustained noninteraction or object stimulation. These patterns were consistent across the pre- and postadmission sessions and relatively stable over time.

Self-stimulation was observed frequently in all groups during all three routines. However, all the children, regardless of group

assignment, produced more self-stimulation during large group than in free play or snack (see Appendix D, Tables 17, 18, and 19). The rates of self-stimulation were similar among the groups. The rates were also similar for the pre- and postadmission sessions.

Teacher Attention

The rates of teacher attention displayed toward peers in the assigned, random, and control groups during pre- and postadmission sessions are presented in Tables 20-25 located in Appendix D. Data is presented for overall teacher attention, teacher attention to prosocial and deviant behaviors, and teacher attention during free play, snack, and large group.

As shown in Table 20 (Appendix D), teacher attention to assigned peers declined during the first two postadmission sessions, but subsequently returned to the preadmission level at the third postadmission session. A similar decline during postadmission was observed for teacher attention displayed toward the control peers.

The teachers attended to the children in all three groups more frequently when the children exhibited prosocial behaviors rather than deviant behaviors (see Tables 21 and 22, Appendix D). Moreover, they appeared to maintain about the same rates of differential attention through the course of the study.

Teachers attended to the children, regardless of group assignment, most frequently during free play (see Tables 22, 24 and 25, Appendix D). Teacher attention occurred less frequently for all three

groups of children during snack and large groups. No differences were noted between preadmission and postadmission rates in the frequency of teacher attention for any of the groups during the three routines.

CHAPTER V

CONCLUSIONS

According to the results of this study, the spontaneous social behaviors of preschool children are not affected, either positively or negatively by their participation in integrated activities with a severely handicapped child. No socially significant difference was observed between preadmission and postadmission sessions in any behavior except social interaction with children. Social interaction with children increased in all three groups as the study progressed.

Limitations

Only tentative conclusions can be drawn from this study because of several limitations. These limitations concern the design of the study, the measurement system, and the issue of generalizability.

The primary limitation is the short preadmission period. It is difficult to say whether the peer confederates' behaviors were or were not affected by the tutoring experiences since there are only two data points in the preadmission period. There is not enough data in the preadmission period to allow for a stable baseline. Anecdotal evidence suggests that there was no difference between the preadmission and postadmission periods. However, a longer preadmission period would have allowed a better comparison. Also there are too few data points in the postadmission period to show a trend in the behaviors. More frequent observations might have shown more subtle changes.

A second limitation concerns the measurement system. The self-stimulation behavior definition used in the study was too broad to differentiate properly between autistic self-stimulation and normal or acceptable forms of self-stimulation.

A third limitation is that of generalizability. First, only one handicapped child was integrated into the preschool program. Admittedly, her abilities were more severely limited than those of most handicapped children in integrated programs. However, integrating one handicapped child is less difficult than trying to integrate several. Thus, nonhandicapped peers might be affected to a greater degree if more handicapped children were integrated.

Generalizability is limited also by the small sample size used in the present study. Each group consisted of only four children. Observations of more children would add strength to the results.

A fourth limitation is that the study took place in a university sponsored program. There usually were several staff members working at any given time. Many early childhood programs do not have the staff resources that were available in this program. Consequently, the results might not be applicable to early childhood programs that do not have sufficient staff to allow special learning activities.

Discussion

Prosocial Behaviors

The adult social interaction and teacher attention measures indicated that peer confederates did not interact more or less often with

the teachers than did peers in the control group. Moreover, the teachers did not ignore the peer confederates, as was feared by some educators faced with the responsibility of teaching a handicapped child in an integrated setting (Kavanagh, 1977; Harasymiw & Horne, 1976). The concern of many parents that their children will receive less attention in an integrated setting because teachers will attend differentially to peer confederates was not supported by the findings.

Children in the assigned, random, and control groups engaged in peer interactions more frequently as the study progressed. Therefore, it cannot be concluded that the increase was related to participation in the learning activities. A more plausible explanation is that the increase was a reflection of the normal developmental pattern of behavior commonly exhibited by preschool children. This supports Parten's (1932) findings that preschool children as a whole engage in more social interaction as their attendance at nursery school increases. Also, it could be attributed to their increasing maturity.

The suggestion in the literature that peers who work closely with a handicapped child in a structured situation will interact spontaneously with the handicapped child at other times (Devoney et al., 1974; Apolloni & Cooke, 1975) was not borne out in this study. The lack of social interaction between the peers and the handicapped child should not necessarily be interpreted to mean that the subjects in this study rarely interacted with the handicapped child, or actively avoided her. It is important to remember that the measure of social interaction included only those instances of interaction that were initiated

spontaneously by the peer or the handicapped child. Any interactions prompted by an adult or another peer were not scored as social interaction. In an effort to establish the handicapped child's interaction with peers (and vice versa), teachers often had to prompt social interaction. Consequently, some interactions that did occur could not be scored because they were not spontaneous.

There was also no support, based on the results of this study, for the suggestion that there would be a beneficial effect of the integrated activities on the peer confederates (Bricker, 1978; Apolloni & Cooke, 1975). No beneficial effect of being in an integrated environment was noted for the control peers. The results show virtually no instances of assistance or verbal interest by the peer confederates or the control peers. However, informal observations by teachers suggested that children did try to help the handicapped child during transition periods such as washing up for lunch or snack, getting ready to go outdoors, or cleaning up. This assistance was often in the form of verbal instructions (e.g., "Turn the water off") similar to those they previously had heard the teachers give.

The reason for the lack of assistance to and interest in the handicapped child during other routines could be related to the fact that outside of the small group activities she was not a focal point for their attention. Given the low rate of social interaction with the handicapped child, the peers were not in a position to attend closely to the activities of the handicapped child. They were too busy with their own activities. However, during transition times, the nonhandicapped

children would be more likely to notice the behavior of the handicapped child as they were engaged in similar activities (e.g., washing up at the sinks) and in close proximity to one another.

This is consistent with the findings of Cavallero and Porter (1980), who reported that during free play, at-risk children more often participated in parallel play near other at-risk children, but normally developing children chose to play near other normally developing children. Also, normally developing children gazed more often at their normally developing peers, but at-risk children gazed more often at other at-risk children. It is possible also that the handicapped child did not ask the children for assistance.

Nevertheless, the results do suggest that spontaneous prosocial interactions, regardless of the forms they may take (e.g., play, assistance, sharing) probably require special training that will promote their occurrence. This supports the same conclusions drawn by previous researchers (Devoney et al., 1974; Apolloni, Cooke, & Cooke, 1977).

Deviant Behaviors

The opinions of those who believe nonhandicapped children will imitate the undesirable behaviors of the handicapped children (Baldwin & Baldwin, 1974) were not supported by the findings. With the exception of self-stimulation, the levels of deviant behavior were relatively low prior to the handicapped child's admission to the program and remained low throughout the study. Although the data do not reflect specific types of self-stimulation, informal observation indicated that the

self-stimulation consisted primarily of thumb-sucking, swinging legs while sitting in chairs, and other rather unobjectionable behaviors. There were no indications that the children imitated the hand-flapping, rocking, or scratching that the handicapped child often produced.

There also was little evidence that the handicapped child suffered any negative attention from the nonhandicapped children as was feared by some researchers (Baldwin & Baldwin, 1974; McMillan, Jones, & Aloia, 1974). Derogatory behavior was never observed. The lack of hostile or aggressive behavior toward the handicapped child is encouraging. This, coupled with the low rate of verbal interest, indicates that either: (a) the peers were not aware of the handicapped child's differences (which is unlikely given the severity of her handicap, (b) they were too compassionate or polite to direct negative behavior toward her, or (c) they were not unduly concerned about her behavior. The latter explanation seems most plausible. The children probably recognized the handicapped child's differences and limitations since because they participated closely with her in the integrated activities and accepted them without much concern. This supports the findings of Goodman, Gottlieb and Harrison (1972) and Billings (1963) that young children are not particularly concerned about the special problems of handicapped children.

Characteristics of the Assigned Peers

The lack of behavioral differences between the assigned and random peers suggests that the characteristics for which the peers in the assigned groups were chosen (cooperative behavior, verbal ability,

and well-developed social skills) did not predispose them to be treated differently by teachers or respond differently because of their participation in the learning activities. They received about the same amount of teacher attention and their behaviors were no more negative or positive than those of any of the other peers. This finding suggests that parents and teachers may not have to worry that children who are chosen to serve as peer confederates because of certain desirable behaviors will be adversely affected in some way, either by changes in the teachers' behaviors or by being involved repeatedly in a formal training program.

Validity of Behavior Measures

Face validity was reflected in the data. Social interaction was highest during free play, which is commonly the case in early education settings. Sustained attention was lower during free play as one would expect if most of the children were involved in activities. During large group, however, when listening is required, sustained attention was more frequent, but social interaction occurred less often. Snack encourages interaction through conversation and requesting foods to be passed. However, sustained attention is not usually observed because the children tend to be actively involved in eating their snack. Also, the social interaction measure indicated that all three groups of children gradually interacted more often with other members of their peer group during indoor free play. Based upon previous studies of developmental changes in social behaviors (Parten, 1932; Rubin, Maioni, & Hornung, 1976) this findings was to be expected. Thus, there are several

indications that the measures reflected real similarities and differences in the behavior of the children in all three groups.

Summary

The present study was an exploratory and descriptive examination of the longitudinal effects of peer participation in an integrated program. Teachers' and children's behaviors were observed over an 8 month period. To date, there has been no other longitudinal study conducted in an integrated setting. The long observation period allowed the opportunity to record slow but steady increases in peer interaction and rule out the possibility of delayed or long term effects related to disproportionate teacher attention or "reverse" imitation.

The question of reverse imitation of the deviant behavior of the handicapped child by the nonhandicapped children remains unanswered. The inappropriate self-stimulation measure precludes stating that reverse imitation did not occur. However, informal observation suggests that it did not. Within the limitations of the study, there was no evidence of developmental arrest of the social behaviors of any of the nonhandicapped children in the study. Also teacher attention remained the same through the study for all three groups.

Implications for Future Research

Future research might benefit from using Parten's (1932) measures of play behavior. The social interaction measure used in the present study required somewhat sophisticated and complex interaction which the

handicapped child was incapable of producing. Parten's measures would have provided information about a wider range of social play behaviors.

Second, in future studies of self-stimulation, it would be helpful to define the behavior so that the measurement procedure truly differentiates between the bizarre self-stimulatory behavior of an autistic child and the more acceptable forms of self-stimulation exhibited by nonhandicapped children. The intent of measuring self-stimulation in the present study was to determine to what extent the nonhandicapped children imitated the bizarre behaviors of the handicapped child. A definition tailored to reflect the specific forms of self-stimulation exhibited by the handicapped child would be more appropriate for this purpose.

Third, in an effort to obtain data on the occurrence of assistance behaviors, it would be better to sample the nonhandicapped children's behaviors at times when the handicapped child is more likely to need help. In the present study, these times would have been during transition periods such as washing up, lunch, and cleaning up. At these times the nonhandicapped children were in close proximity to the handicapped child and engaged in similar activities. Consequently, her need for assistance might have been more apparent to them and they would have been in positions that would have required little effort from them to help her.

Implications for Teachers

Although no data were gathered relating to the direct effects of the learning activities on nonhandicapped children, the experiences of

the teachers showed that the daily activities must be interesting for nonhandicapped children. Otherwise, they will become bored very quickly and refuse to participate. Careful planning is essential. The teachers found it helpful if the activities were in the form of games and varied from day to day. Nonhandicapped children are valuable as tutors and they can learn their roles quickly and perform them quite effectively. Knowing this, or being praised for assisting the teachers, may not be sufficient to maintain their interest and cooperation. One way to guard against this possibility is to plan activities that can easily be incorporated into the daily routines and do not require a great deal of repetition or time in the same place.

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APPENDICES

APPENDIX A

Definitions of Behaviors

*Social interaction (SI). This category is scored for any instance of verbal, physical, or other forms of nonverbal contact between the subject and another person. A subscript identifies the other person (i.e., SI_a = social interaction with an adult; SI_c = social interaction with a child). If the interaction is initiated by the subject, SI is scored in the upper left-hand triangle on the checklist. If the interaction is initiated by another person, SI is scored in the lower right-hand triangle. Subsequent intervals are then scored in the same triangle until no interaction occurs for one full interval. When social interaction is terminated, each new instance of social interaction must be scored in the appropriate triangle depending on who (i.e., subject or other person) initiates the interaction. In instances where it is not possible to determine who begins an interaction, enter SI on the diagonal line that divides the interval square and continue to enter SI on consecutive diagonal lines until the interaction is terminated.

*Sustained attention (SA). This category is scored for a full interval of attending to, or staring at objects, people, or activities. This category requires observer judgment that the child is in fact watching these events, thus differentiating it from one of the later deviant behavior categories (NI). Any more active participation by the subject negates the scoring of SA (i.e., such as reading and engaging in social interaction or playing).

Verbal interest (VI). This category is scored when a peer makes a statement about or asks a question about the target child during a 10-second interval. This category should be scored only when the statements and questions are such that they indicate special interest in the target child. These statements should not be prompted by an adult.

Assistance (AN). This category is scored for any instance of a peer giving help to the target child either when asked by the child (not an adult) or when voluntarily initiated by the peer. If assistance is begun in one interval and continues for subsequent intervals, score for each interval that it occurs.

Derogatory behavior (DB). This category is scored for any instance when a peer annoys, mocks, teases (in a negative manner), or rejects the target child during a 10-second interval. The target child may respond to the peer's behavior by showing distress (whining, crying), attempting to stop it (fighting, telling a teacher), or leaving the area.

*Self-stimulation (SS). This category is scored for any instance of the subject's manipulation of his/her own body (grooming, picking at skin), or repetitive motor movements. A motor movement is defined as repetitive if it continues for three or more, essentially identical, occurrences during a single 10-second interval. For continued scoring of self-stimulation for repetitive behavior this criterion must be met in each interval scored.

*Object stimulation (OP). This category is scored for every instance of simple repetitive manipulation of an object (pencil, book) in which the manipulation is not a part of a more complex activity such as toy play (i.e., rolling clay on the table to make a figure). A repetitive manipulation is defined as one continuing for three or more, essentially identical, occurrences during a single 10-second interval. For continued scoring of OP this criterion must be met in each interval so scored. Object stimulation activities are usually termed "absent-minded" and consist of fidgeting with objects (i.e., pencil tapping, rotating any small object in the hand, flipping the pages of a book). Object stimulation usually involves the subject's hands and active movement of an object.

*Sustained noninteraction (NI). This category is scored when the subject does not interact with people or objects for a full 10-second interval. Object contacts which qualify as OP can be scored during a sustained noninteraction interval, as can self-stimulation, when these behaviors do not accompany social interaction. Sometimes, this category is confused with sustained attention (SA).

*Social attention (S). This category is scored for any deliberate physical contact made with the subject (i.e., placing a hand on her shoulder, hugging him), verbalizations directed to the subject (Bob, How are you?), and a kind of looking at each other that entails mutual recognition demonstrated through other nonverbal cues (smiling and/or being smiled at, and other mutual changes in facial expression). A subscript identifies the dispenser of the social attention S_a = social

attention from an adult; Sc = social attention from a child. A child or adult may continuously attend to the subject but unless the subject interacts, social interaction should not be scored. In such instances score social attention only.

*This definition was adapted from the system developed by Wahler, House and Stambaugh (1976).

APPENDIX B

CHECKLIST

Tape # _____
 Date _____
 Observer _____
 Target _____
 Children _____

Prompt (P)

Social Interaction
 (Sia), (Sic)

Social Attention
 (Sa), (Sc)

Derogatory Behavior
 (DB)

Assistance (AN)

Verbal Interest (VI)

Sustained Attention
 (SA)

Sustained Noninter-

action (NI)

Self-stimulation
 (SS)

Object Stimulation
 (OP)

Obstruct (OBS)

10	20	30	40	50	1m	10	20	30	40	50	2m
10	20	30	40	50	3m	10	20	30	40	50	4m
10	20	30	40	50	5m	10	20	30	40	50	6m
10	20	30	40	50	7m	10	20	30	40	50	8m
10	20	30	40	50	9m	10	20	30	40	50	10m
10	20	30	40	50	11m	10	20	30	40	50	12m
10	20	30	40	50	13m	10	20	30	40	50	14m
10	20	30	40	50	15m	10	20	30	40	50	14m

APPENDIX C

QuizQuestions

1. Must social interaction be sustained for a full 10 seconds?
2. Must social interaction occur every time social attention is scored?
3. Name two things that you must be certain of before scoring sustained attention.
4. What would negate the scoring of sustained attention.
5. Are statements or questions made about any child scored as verbal interest?
6. Name one way to determine whether a statement made about a child can be scored as verbal interest.
7. Name one thing that would negate the scoring of assistance when the target child helps another child.
8. Name one reason why teasing may not be scored as derogatory behavior.
9. In order for a motor movement to be scored as self-stimulation, how many times must it occur during a 10-second interval?
10. Name one instance when manipulation of the body or a repetitive motor movement would not be scored as self-stimulation.
11. What differentiates object stimulation from self-stimulation?
12. How can you differentiate between sustained attention and sustained noninteraction?

Examples

Provide the correct code(s) for the following examples.

1. Subject child takes a stick as a pretend gun, points it at another child and says, "You're going to get it." _____
2. Subject child watches children playing with blocks for 10 full seconds. _____
3. Subject child says, "Joey's hands don't work right." _____
4. Subject child and handicapped child are building a block tower.

5. Subject child imitates the speech of handicapped child and laughs.

6. Subject child sucks his thumb during a 10-second interval.

7. Subject child rubs two crackers together while watching another child. _____
8. Child sits and rocks in a rocking chair for 10 full seconds.

9. Subject child is playing. Teacher gives him a hug. _____
10. Subject child looks up when an adult walks into the room and then continues playing. _____
11. Subject says to handicapped child, "You can sing that song!"

12. Handicapped child says to subject child, "How do you do this?"
Subject child shows him. _____

13. Subject child pushes handicapped child away when the child attempts to play with her. _____
14. Subject child says, "LA, LA, LA . . . as she plays a xylophone.

15. Subject child uses pencil to draw repeated swirls on a piece of paper. _____
16. Subject child is helping a teacher and other children in a joint cookie-making activity. _____
17. Adult walks up, tickles subject child. Child hugs him.

APPENDIX D

Table 2

Means and Standard Deviations of Prosocial Behavior of Assigned Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	10.2	6.6	20.6	4.5	19.0	7.5
PM	15.5	6.0	15.0	2.9	24.5	5.8
November						
AM	17.5	9.1	/	/	21.5	0.7
PM	20.5	13.4	17.0	5.6	/	/
February						
AM	7.0	4.2	18.0	12.7	16.5	6.3
PM	13.0	6.9	12.2	6.5	17.2	8.1
April						
AM	14.2	10.2	12.5	4.0	18.6	10.1
PM	23.5	2.3	14.6	6.6	20.3	8.5
May						
AM	23.0	3.5	15.2	3.8	18.0	3.6
PM	18.7	10.8	14.0	2.9	18.0	5.4

Note: Missing data are indicated by slash (/).

Table 3

Means and Standard Deviations of Prosocial Behaviors of Random Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	24.6	3.2	9.3	6.1	25.0	6.0
PM	16.0	9.5	13.3	9.0	21.2	8.9
November						
AM	20.5	4.9	5.5	2.1	29.0	1.4
PM	18.5	0.7	/	/	26.5	0.7
February						
AM	13.2	3.4	7.0	4.2	15.0	13.1
PM	16.0	2.8	19.5	2.1	20.0	5.6
April						
AM	16.5	4.6	13.0	1.4	19.6	10.0
PM	18.3	10.1	6.0	2.8	21.7	7.5
May						
AM	22.7	6.6	12.7	3.9	19.2	6.6
PM	10.7	4.7	12.6	2.0	14.3	7.2

Note: Missing data are indicated by slash (/).

Table 4

Means and Standard Deviations of Prosocial Behavior of Control Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	13.3	3.0	16.3	7.6	18.0	0.0
PM	26.2	4.9	8.0	0.0	18.2	2.6
November						
AM	16.0	6.0	8.0	1.4	/	/
PM	16.6	3.2	/	/	19.5	2.1
February						
AM	27.5	3.5	11.6	8.0	23.6	2.5
PM	14.7	2.0	9.5	0.7	18.3	2.8
April						
AM	17.7	8.1	8.6	1.5	9.0	1.0
PM	25.0	7.0	17.7	5.1	19.0	0.0
May						
AM	23.2	4.7	13.7	8.5	17.2	7.6
PM	24.2	6.6	14.5	9.8	23.2	2.6

Note: Missing data are indicated by slash (/).

Table 5

Means and Standard Deviations of Social Interaction with Children of Assigned Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	3.5	3.4	10.0	5.2	6.0	1.4
PM	2.5	3.3	8.0	7.5	5.0	3.7
November						
AM	12.0	15.5	/	/	1.0	1.4
PM	0.0	0.0	2.5	0.7	/	/
February						
AM	1.0	1.4	8.5	12.0	0.0	0.0
PM	6.2	4.7	7.5	9.6	1.2	2.5
April						
AM	7.0	5.5	7.5	6.9	2.3	1.5
PM	12.5	9.3	10.3	9.6	2.7	2.8
May						
AM	14.5	12.8	6.7	4.1	4.5	3.3
PM	14.2	13.7	5.7	4.7	0.7	0.9

Note: Missing data are indicated by slash (/).

Table 6

Means and Standard Deviations of Social Interaction with Children of Random Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	4.0	4.8	5.5	7.7	1.2	2.5
PM	1.7	1.2	3.3	5.7	2.3	2.0
November						
AM	2.0	0.0	1.0	1.4	1.0	1.4
PM	9.5	12.0	/	/	1.0	1.4
February						
AM	3.6	2.3	8.6	7.3	1.5	2.1
PM	1.0	1.4	13.5	4.9	2.5	0.7
April						
AM	11.2	4.9	5.2	2.8	1.6	2.0
PM	10.3	8.3	1.0	1.4	1.7	2.2
May						
AM	13.2	12.1	3.7	4.3	1.2	1.2
PM	4.0	3.6	6.3	4.7	3.6	3.2

Note: Missing data are indicated by slash (/).

Table 7

Means and Standard Deviations of Social Interaction with Children of Control Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	6.2	6.3	8.3	6.0	1.5	2.1
PM	7.6	8.0	4.5	3.5	0.2	0.5
November						
AM	4.0	3.8	1.0	1.4	/	/
PM	3.0	5.1	/	/	8.5	7.7
February						
AM	10.0	14.1	6.3	6.5	0.0	0.0
PM	10.5	3.5	2.0	2.8	5.5	6.3
April						
AM	15.2	10.2	1.6	1.5	3.6	3.5
PM	10.6	9.2	8.2	6.3	2.2	2.6
May						
AM	14.7	10.6	3.5	3.5	3.2	2.2
PM	12.7	13.2	4.7	4.4	1.7	3.5

Note: Missing data are indicated by slash (/).

Table 8

Means and Standard Deviations of Social Interaction with Adults of Assigned Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	6.7	3.3	9.0	2.6	4.0	0.0
PM	10.2	3.2	6.0	5.5	13.0	9.2
November						
AM	4.5	4.9	/	/	0.5	0.7
PM	19.5	14.8	12.0	8.4	/	/
February						
AM	4.0	5.6	6.5	4.9	2.5	0.7
PM	6.2	7.5	3.0	2.4	8.2	4.5
April						
AM	5.2	3.0	3.7	2.7	2.6	3.7
PM	10.7	7.8	3.6	4.7	7.0	8.6
May						
AM	7.7	8.5	8.0	3.5	4.5	2.6
PM	10.7	11.8	9.7	2.5	5.7	5.8

Note: Missing data are indicated by slash (/).

Table 9

Means and Standard Deviations of Social Interaction with Adults of Random Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	16.7	7.1	3.0	2.8	4.5	1.2
PM	9.0	12.1	7.6	4.9	5.6	3.5
November						
AM	15.2	4.9	2.5	0.7	4.0	4.2
PM	9.5	12.0	/	/	7.5	0.7
February						
AM	6.6	6.5	4.6	2.3	3.3	4.9
PM	7.0	8.0	2.5	0.7	6.0	4.2
April						
AM	4.7	6.1	4.5	2.8	2.3	2.5
PM	12.0	13.0	3.5	0.7	3.7	1.8
May						
AM	10.2	12.8	6.7	3.5	3.2	4.5
PM	5.2	4.3	5.0	5.2	7.6	2.5

Note: Missing data are indicated by slash (/).

Table 10

Means and Standard Deviations of Social Interaction with Adults of Control Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	5.7	3.5	6.0	2.0	9.0	1.4
PM	22.3	8.6	5.5	0.7	/	/
November						
AM	4.7	4.6	7.0	1.4	12.7	4.1
PM	12.6	5.0	/	/	5.0	1.4
February						
AM	13.5	19.0	5.3	4.0	4.0	6.0
PM	6.2	4.5	4.5	2.1	1.5	0.7
April						
AM	3.5	2.5	4.3	2.8	1.0	1.4
PM	12.0	8.7	10.5	9.4	2.5	2.6
May						
AM	6.2	9.2	8.5	7.9	4.2	3.9
PM	17.5	8.0	9.0	7.0	5.5	3.4

Note: Missing data are indicated by slash (/).

Table 11

Means and Standard Deviations of Sustained Attention of Assigned Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	2.2	2.5	3.0	1.0	8.0	8.6
PM	2.7	4.8	2.6	2.5	4.2	7.2
November						
AM	1.5	2.1	/	/	20.0	1.4
PM	0.0	0.0	3.5	2.1	/	/
February						
AM	3.0	1.4	1.5	0.7	13.5	6.3
PM	2.5	3.6	1.7	2.0	7.0	2.7
April						
AM	1.0	0.8	1.0	1.1	10.3	11.8
PM	3.2	1.8	0.3	0.5	11.5	10.7
May						
AM	2.2	3.8	1.2	1.2	9.7	4.9
PM	1.0	1.4	0.2	0.5	10.7	4.9

Note: Missing data are indicated by slash (/).

Table 12

Means and Standard Deviations of Sustained Attention of Random Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	4.7	7.6	1.0	1.4	19.2	5.1
PM	8.2	10.9	0.3	0.5	11.6	12.8
November						
AM	7.0	4.2	2.5	0.7	22.0	6.2
PM	0.5	0.7	/	/	12.0	7.0
February						
AM	2.6	4.6	0.0	0.0	10.3	17.0
PM	7.5	10.6	1.0	1.4	12.5	2.1
April						
AM	1.5	1.9	1.2	1.2	15.6	14.6
PM	1.0	1.7	0.0	0.0	16.2	8.0
May						
AM	6.5	12.3	2.5	2.5	15.2	11.2
PM	1.7	2.3	1.6	2.8	2.0	1.0

Note: Missing data are indicated by slash (/).

Table 13

Means and Standard Deviations of Sustained Attention of Control Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	4.0	4.5	2.6	1.1	6.5	2.1
PM	1.0	1.7	1.0	0.0	5.2	3.2
November						
AM	2.7	3.0	1.5	0.7	/	/
PM	1.0	1.0	/	/	1.0	0.0
February						
AM	15.0	21.2	0.6	0.5	11.0	11.5
PM	1.5	2.3	0.5	0.7	12.5	6.3
April						
AM	0.0	0.0	2.6	0.5	6.0	4.5
PM	2.0	2.0	0.0	0.0	15.7	6.3
May						
AM	1.5	1.2	2.0	2.8	10.5	7.8
PM	1.7	2.2	1.0	1.4	16.2	7.1

Note: Missing data are indicated by slash (/).

Table 14

Means and Standard Deviations of Deviant Behavior of Assigned Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	3.7	3.4	6.0	1.7	2.5	0.7
PM	3.5	2.0	5.2	5.9	12.7	8.0
November						
AM	2.5	3.5	/	/	8.5	0.7
PM	22.5	10.6	6.0	1.4	/	/
February						
AM	1.0	1.4	2.6	2.0	14.5	16.2
PM	5.2	5.7	1.7	2.0	7.0	4.9
April						
AM	4.7	3.2	4.7	1.2	12.0	6.2
PM	4.7	6.1	6.6	1.1	8.2	9.8
May						
AM	4.2	0.9	3.2	3.3	6.5	6.2
PM	1.7	2.8	3.0	4.0	2.7	2.7

Note: Missing data are indicated by slash (/).

Table 15

Means and Standard Deviations of Deviant Behavior of Random Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	7.0	8.7	9.5	4.9	8.0	5.3
PM	6.0	4.5	10.6	8.6	11.5	3.6
November						
AM	5.0	0.0	1.5	0.7	8.0	8.4
PM	5.5	6.3	/	/	5.0	4.2
February						
AM	1.3	0.5	4.2	4.2	4.6	4.5
PM	9.5	2.1	4.5	0.7	7.0	1.4
April						
AM	0.75	0.95	6.3	1.5	9.3	12.0
PM	6.0	5.1	7.5	2.1	4.6	1.5
May						
AM	5.5	7.1	5.5	1.7	3.5	3.1
PM	4.0	4.0	5.6	6.6	5.3	5.5

Note: Missing data are indicated by slash (/).

Table 16

Means and Standard Deviations of Deviant Behavior of Control Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	5.7	3.2	10.6	4.0	11.5	4.9
PM	8.0	7.5	8.0	5.6	15.2	5.3
November						
AM	9.6	5.5	7.5	3.5	/	/
PM	4.3	3.0	/	/	8.0	2.8
February						
AM	6.0	5.0	11.6	2.3	11.3	11.0
PM	3.5	5.1	2.5	2.1	6.3	2.8
April						
AM	2.0	3.3	9.3	7.3	15.6	10.5
PM	1.6	2.0	1.7	2.0	4.6	2.5
May						
AM	7.0	4.3	12.6	5.6	9.0	2.4
PM	8.2	2.7	7.0	6.7	12.2	6.2

Note: Missing data are indicated by slash (/).

Table 17

Means and Standard Deviations of Self-Stimulation of Assigned Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	3.2	4.2	5.3	1.5	1.5	2.1
PM	3.5	2.0	3.6	5.5	9.2	8.5
November						
AM	2.5	3.5	/	/	8.5	0.7
PM	22.5	10.6	5.5	0.7	/	/
February						
AM	0.5	0.7	3.0	2.8	14.5	16.2
PM	3.5	5.0	1.7	2.0	7.2	5.6
April						
AM	4.7	3.2	4.7	1.5	12.3	6.1
PM	4.0	4.8	0.6	1.1	8.0	9.7
May						
AM	3.7	1.8	3.0	3.1	6.5	6.2
PM	1.7	2.8	2.5	4.3	2.5	2.3

Note: Missing data are indicated by slash (/).

Table 18

Means and Standard Deviations of Self-Stimulation of Random Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	5.7	7.5	8.5	6.3	11.2	5.2
PM	6.5	3.6	4.0	4.3	9.0	4.3
November						
AM	3.0	1.4	3.0	2.8	8.0	8.4
PM	5.5	6.3	/	/	3.0	1.4
February						
AM	1.0	0.0	2.3	2.3	4.6	4.5
PM	3.5	0.7	4.5	0.7	7.0	1.4
April						
AM	0.7	0.9	6.2	3.5	8.0	9.8
PM	4.3	5.1	6.0	2.8	4.5	1.2
May						
AM	4.5	7.6	3.7	3.3	3.5	3.1
PM	3.0	2.0	6.0	6.2	5.6	5.0

Note: Missing data are indicated by slash (/).

Table 19

Means and Standard Deviations of Self-Stimulation of Control Peers

Observation periods	Free play		Snack		Large group	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
October						
AM	6.7	5.9	10.3	5.0	9.0	1.4
PM	8.0	7.2	6.0	5.6	15.2	4.5
November						
AM	7.7	6.5	7.5	3.5	/	/
PM	4.3	3.0	/	/	9.0	1.4
February						
AM	4.0	4.2	11.0	2.0	11.6	6.6
PM	4.2	4.1	6.5	4.9	5.5	3.5
April						
AM	1.5	2.3	9.3	7.3	12.6	11.7
PM	0.6	0.5	1.5	1.7	3.2	2.9
May						
AM	5.5	2.5	9.2	7.4	6.5	4.7
PM	6.2	5.3	6.5	7.0	12.5	6.3

Note: Missing data are indicated by slash (/).

Table 20

Mean Percent of 10-Second Intervals of Teacher Attention During Free Play, Snack, and Large Group Combined for Assigned, Random, and Control Peers

Observation periods	Assigned peers	Random peers	Control peers
	%	%	%
October			
AM	22	27	21
PM	32	24	48
November			
AM	7	18	28
PM	50	31	41
February			
AM	12	15	20
PM	17	19	11
April			
AM	11	12	8
PM	25	21	26
May			
AM	23	23	23
PM	30	19	35

Note: Missing data are indicated by slash (/).

Table 21

Mean Percent of 10-Second Intervals of Teacher Attention to Prosocial Behavior of Assigned, Random, and Control Peers During Free Play, Snack and Large Group Combined

Observation periods	Assigned peers	Random peers	Control peers
	%	%	%
October			
AM	21	29	26
PM	23	25	40
November			
AM	8	18	23
PM	41	31	34
February			
AM	21	13	18
PM	15	18	12
April			
AM	17	12	8
PM	13	25	20
May			
AM	26	21	23
PM	28	21	31

Note: Missing data are indicated by slash (/).

Table 22

Mean Percent of 10-Second Intervals of Teacher Attention to Deviant Behavior of Assigned, Random, and Control Peers During Free Play, Snack, and Large Group Combined

Observation periods	Assigned peers	Random peers	Control peers
	%	%	%
October			
AM	3	9	8
PM	5	11	11
November			
AM	1	2	6
PM	24	10	6
February			
AM	5	2	3
PM	5	2	1
April			
AM	4	4	3
PM	5	3	0
May			
AM	3	6	4
PM	2	2	9

Note: Missing data are indicated by slash (/).

Table 23

Mean Percent of 10-Second Intervals of Teacher Attention to Assigned Peers

Observation periods	Free play	Snack	Large group
	%	%	%
October			
AM	21	27	17
PM	37	22	39
November			
AM	12	/	2
PM	67	33	/
February			
AM	12	18	7
PM	20	6	24
April			
AM	16	11	6
PM	38	13	22
May			
AM	13	28	15
PM	37	34	19

Note: Missing data are indicated by slash (/).

Table 24

Mean Percent of 10-Second Intervals of Teacher Attention to Random Peers

Observation periods	Free play	Snack	Large group
	%	%	%
October			
AM	53	10	15
PM	28	23	19
November			
AM	57	7	5
PM	32	/	30
February			
AM	21	11	12
PM	40	0	18
April			
AM	13	17	7
PM	38	3	13
May			
AM	36	23	9
PM	18	17	22

Note: Missing data are indicated by slash (/).

Table 25

Mean Percent of 10-Second Intervals of Teacher Attention to Control Peers

Observation periods	Free play	Snack	Large group
	<u>%</u>	<u>%</u>	<u>%</u>
October			
AM	18	22	30
PM	42	17	39
November			
AM	51	0	/
PM	31	/	10
February			
AM	42	14	12
PM	14	10	5
April			
AM	7	14	3
PM	40	33	8
May			
AM	23	31	13
PM	56	28	21

Note: Missing data are indicated by slash (/).

VITA

Deborah A. L. Koshansky was born in Beacon, New York, on August 16, 1952. She attended elementary schools in that city and was graduated from Beacon High School in June 1970. The following September she entered Eisenhower College, and in June 1974 she received a Bachelor of Arts degree in Psychology/Sociology. In the Fall of 1976 she accepted a graduate assistantship at the University of Tennessee, Knoxville, and began study toward a Master's degree in Child and Family Studies. This degree was awarded in August 1978. She continued her graduate studies and received the Doctor of Philosophy degree in Home Economics in August 1984.

During the work on her doctoral degree, she moved to Shreveport, Louisiana. In January 1980 she became the executive director of the Northwest Louisiana Children's Council. In March 1981 she took a position of Instructor at the Louisiana State University Medical Center, School of Allied Health Professions, Children's Center.

The author is a member of the American Home Economics Association, the National Association for the Education of Young Children, the Council for Exceptional Children, and the Louisiana Association for Children Under Six. She is the first Vice President of the Caddo-Bossier Day Care Association.