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AUTHOR Quay, Lorene C.; McCloskey, Mary Lou
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ABSTRACT

The effectiveness of a cognitive coaching condition on the social acceptance of 26 handicapped children in regular first through fourth grade classes was examined. Children were randomly placed in one of three conditions: cognitive coaching (in which students were taught techniques of getting along with peers); individual instruction (control); or no training (control). Analysis of interaction and sociometric measures before and after intervention did not support the hypothesis that cognitive coaching would significantly improve social skills and acceptance as compared with individual instruction or no training. Analysis of teacher ratings in the three conditions revealed that a greater frequency of the staff in the cognitive coaching group evaluated their target children as improved in the social area, while a greater frequency of staff in the individual instruction group evaluated their target children as improved in the academic area. The hypothesis that student teachers in the cognitive coaching group would gain more positive attitudes toward mainstreaming as compared with other groups was not upheld. Recommendations focused on the need to incorporate social skills training in preservice education. (CL)

# IMPROVING PEER ACCEPTANCE OF MAINSTREAMED HANDICAPPED CHILDREN BY TEACHER TRAINING

Lorene C. Quay

and

Mary Lou McCloskey

Department of Early Childhood Education
Georgia State University
Atlanta, Georgia 30303

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# CHAPTER 1

## Introduction

As a result of Public Law 94-142, which requires placing handicapped children into the least restrictive environment, mainstreaming, or the integration of handicapped children into regular classrooms, has become common practice. Although mainstreaming is supported by many social-ethical, legal-legislative, and psychological-educational arguments (Bricker, 1978), a major goal of mainstreaming is to provide handicapped children with opportunities for constructive interaction with nonhandicapped children. Such interaction is thought to facilitate both cognitive and social development. It is particularly important that handicapped children have an opportunity to learn to relate to their nonhandicapped peers, since they must be prepared to participate in a world of nonhandicapped people.

## The Importance of Peer Relations

Positive peer relations are necessary for the optimum development of all children. Research on nonhandicapped children suggests that peer relations may be even more important to children's future adjustment than academic achievement. Cowen, Pederson, Babegian, and Garson (1973) gathered extensive data on third-grade children including

absenteeism, grade-point average, IQ, achievement scores, test performance, teacher ratings, and peer ratings. Eleven years later, they observed which of these children were being treated by a mental health professional. The third-grade measure which best predicted emotional difficulties was peer ratings. As well as being more prone to developmental problems later in life, children who are socially isolated are more likely to be later identified as juvenile delinquents in all but the lowest social class (Roff, Sells, & Golden, 1972), to drop out of school, (Ullman, 1957), and to be overly represented in manic depressive and schizophrenic groups (Kohn & Clausen, 1955). In contrast, good peer relations have been shown to be important to the development of a positive self concept (Bradley & Newhouse, 1975; Sheare, 1965) and to be associated with academic achievement (Gronlund, 1950; Lilly, 1970).

## Peer Relations of Handicapped Children In a Mainstreamed Setting

Handicapped students in integrated classrooms seem to be at a particular social disadvantage. Across a wide range of handicapping conditions children are often less highly regarded than their nonhandicapped peers. Learning disabled children are less popular than children without that diagnosis (Bruininks, 1978; Bryan, 1974, 1976). Problems with peer interactions have been found as well with the mentally retarded (Zigler, 1973), the visually impaired

(Lowenfeld, 1971), and the hearing impaired (Meadows, 1975). Hallahan and Kauffman (1978) viewed social adjustment problems as a major characteristic shared by the emotionally disturbed, the learning disabled, and the mildly retarded. Comparing educable mentally retarded children in self-contained and integrated classes, Goodman, Gottlieb, and Harrison (1972) found less peer acceptance in the integrated regular classes. Further, Gottlieb (1978) found the amount of time children had been mainstreamed was unrelated to peer acceptance.

Gresham (1982) reviewed research on the social interaction, social acceptance and modeling of mainstreamed handicapped children and found evidence that none of these areas were improved by mere placement of children in regular classrooms. Rather, he found that nonhandicapped children interacted less or more negatively with handicapped children in a mainstreamed environment, that handicapped children were likely to be poorly accepted by their nonhandicapped peers, and that handicapped children did not automatically model the behavior of their nonhandicapped peers.

Although an integrated situation has the potential for facilitating positive interactions between handicapped children and their nonhandicapped peers, research findings suggest that mainstreamed handicapped children may well be stigmatized, stereotyped, and rejected by their peers. Because merely putting children together does not guarantee better relations or interactions, active efforts to ensure

social integration at the maximum level possible for handicapped children appear necessary. The careful planning of programs and the training of teachers to implement these programs could produce real psychological integration and its concomitant benefits to handicapped children.

## The Importance of the Teacher and the Need for Teacher Training

Johnson & Johnson (1980) have suggested that classroom factors, which teachers may be trained to control, can influence social acceptance of the handicapped. They cited several studies which indicated that placing handicapped and nonhandicapped students together can either increase or decrease nonhandicapped students' prejudice and rejection. The difference, these authors suggested, is in how the situation is structured. Classrooms which structure adequate cooperation and do not focus on competitive or individualistic learning situations promote the most positive interactions among handicapped and nonhandicapped children. Recent work by Bruni (1980), who observed children with a variety of handicapping conditions in several different settings, confirmed that an environment which encouraged interaction was important to the acceptance of the handicapped child.

Social skills have been called the "hidden curriculum" (Cartiledge & Milburn, 1978). Social behavior, attitudes and values are taught by the school's structure, the social

climate, and the images students and teachers have of one another. Teachers are frequently-encountered, powerful, and influential persons in the child's environment. They are models for a wide range of social behaviors that the child may learn to imitate as well as sources of important reinforcement. Social behaviors which contribute to positive personal interaction can be taught. It is important to reveal "hidden" curriculum and directly help teachers to use these models.

In investigating attitudes of educators toward the integration of handicapped students, Guerin and Szatlocky (1974) found that positive attitudes toward the integration of handicapped students were related to the "distance" of a staff member from actual contact with the child. Central administrators were the most positive, while classroom teachers were the least. Classroom teachers' insecurity in their own ability to manage the integration, and their responsibility for the actual execution of the integration may tend to lead to a less positive attitude. Yet, there is clear evidence (Beez, 1970; Good & Brophy, 1972) that teacher attitudes can affect children's performance. In the area of mainstreaming, Shoel, Iano, and McGettigan (1972) have pointed out that "if regular teachers believe they cannot teach handicapped children without an array of special methods and materials, then it is indeed unrealistic to expect them to adopt with confidence major responsibilities for teaching the children (p. 679)." Thus, the

training of teachers to work with handicapped children in promoting their social acceptance should not only directly benefit handicapped children but should indirectly benefit the children through promoting positive teacher attitudes. If meaningful intervention is to occur in natural settings, teachers must be trained to carry it out. An optimum time for such training would appear to be during the student teaching experience when the teacher has supervision and support in implementing such programs. Also, at this time negative attitudes have had little opportunity to develop.

## Objectives of the Research

The general objective of this research was to train student teachers to intervene on behalf of mainstreamed handicapped children and to evaluate the effects of the intervention on the social behavior and social acceptance of the children and on the attitudes of the student teachers.

Specifically, there were three objectives. The first objective was to evaluate the efficacy of a cognitive intervention technique, carried out by student teachers, for enhancing the social skills and social acceptance of mainstreamed handicapped children. The second objective was to assess the effect of the training of student teachers to implement this technique on their attitudes toward mainstreaming handicapped children. If proven effective, such training and experience could be incorporated into teacher preservice and inservice training.

A third objective was to better understand the nature of the relationship between social behaviors and sociometric status in handicapped children. If a change in social behaviors is found to alter sociometric status, a causal relationship between social behaviors and sociometric status can be established. Thus, intervention to change behaviors which correlate with sociometric status will be used as a method to examine the causal relationship between the two variables.

## CHAPTER II

## Review of Relevant Literature

### Behavioral Correlates of Peer Acceptance and Rejection

Hartup, Glazer, and Charlesworth (1967) found that children with high social acceptance gave more positive reinforcement to their peers and that children who were rejected were more likely to give negative feedback to peers. Gottman, Gonso, and Rassmussen (1975) studied peer acceptance in relation to several measures of social skills and social interaction. Popular children performed better on a task in which they demonstrated with the experimenter how to "make friends" and on a referential communication task. These popular children both distributed and received more positive reinforcement than unpopular children. Popular children also spent less time "daydreaming."

Hartup (1970) indicated that children's behavior influences the responses directed toward them by their peers; he concluded from a review of research on social relationships that a positive relationship occurs between social participation and peer acceptance at all levels, from preschool to adolescence. Kohn (1966) found a correlation between the number of positive acts a child initiates to

others and the number of positive acts others initiate toward the child. In a functional analysis of the social interactions of preschool children, Leiter (1977) found that children who made friendly initiations were more likely to receive "agree" responses from their peers than children who did not.

Several investigators have looked for correlates of social status among handicapped children. Gottlieb (1978) found educable mentally retarded children's academic incompetence related to social acceptance, and their misbehavior to social rejection. Bryan (1978), looking for social behaviors that accounted for the high rejection/low acceptance of learning disabled childr by their non-disabled peers, found that strangers (untrained undergraduate students), when rating transcripts, audiotapes, or videotapes of a game session, gave significantly lower ratings to learning disabled children than comparison children in areas of speech, language, academic achievement, and attractiveness to peers. Bryan then looked for aspects of language and nonverbal communication, the common elements of the different modes that distinguished learning disabled from comparison children. She found that the learning disabled children were less perceptive of nonverbal cues, and that the males used less complex language and did not adjust their language when speaking to a younger child. Both sexes initiated more competitive and less considerate statements than the comparison children.

Because the relationship between peer acceptance and rejection and behaviors of children have been studied by correlational means, the findings cannot be interpreted as identifying the causes of peer acceptance. Moore (1967) stated the problem:

> To know that popular children perform a preponderance of friendly behaviors is not to say that their friendliness is the "cause" of their popularity. It is just as reasonable to hypothesize that being well-liked inspires a child to perform friendly behaviors as it is to hypothesize that performing these behaviors causes the child to be well-liked (p. 232).

Nevertheless, known behavior correlates of peer acceptance provide a starting place to discover the direction of the causality. More importantly for the present research, these correlates provide a starting point for developing the content of programs to facilitate the social acceptance of handicapped children.

If teachers are to structure classroom situations to improve the peer relations of the handicapped, they must be made aware of the behaviors which correlate with peer acceptance, so that they can encourage the handicapped to develop these behaviors. In view of research findings, teachers may well be advised to train or encourage handicapped children to develop expertise in positive reinforcement of peers, friendly initiations, communicative competency, and perception of nonverbal cues. They should discourage behaviors which have been found to correlate with

peer rejection such as negative feedback to peers, "day-dreaming," and competitive statements.

## Intervention to Improve Peer Acceptance

A number of interventions to improve peer acceptance of children who were handicapped, isolated, or in some way at risk socially have been studied. One intervention strategy was to involve children in a structured, high-status experience with peers. Chennault (1967) worked with 64 unpopular children in 16 special classes. She found significant improvement in both peer acceptance and in self-perceived peer acceptance following an intervention which involved the children's preparation and presentation of a dramatic skit. Rucker (1970) replicated Chennault's study to determine the permanence of the change. Rucker found a significant effect at the posttest in the same direction. However, the effect was not present at the time of the post-posttest one month later, indicating that this intervention did not have a durable influence.

A similar technique was used by Ballard, Gottleib, and Kaufman (1977) with a group of educable mentally retarded children. The children worked in small, cooperative, highly-structured groups for two three-week periods. The nonretarded children's social acceptance of their retarded peers increased significantly when tested two to four weeks following the intervention.

Another set of strategies currently in use was derived from behavioral methodology. Nordquist (1978) reviewed the behavioral approach and emphasized the central role of teacher and/or peer attention in changing and maintaining social behavior. Nordquist found the variables teacher attention, peer attention, peer modeling, and physical or spatial events, all of which are able to be manipulated by teachers, to be powerful and reliable in developing and maintaining peer interactions. The issues of durability, whether the change will be maintained over time, and setting generality, whether the behavior will be maintained in different settings, have not been resolved, however, according to Nordquist.

Strain, Cooke, and Appoloni (1976) reviewed the role of the peer in modifying social behavior. They cited a number of areas in which the use of peers has been shown to be effective, including modeling, reinforcement, cooperative program management, and desensitization. However, they do not address either the durability or the setting generality issue. Asher, Oden, and Gottman (1977), reviewing some of the behavioral strategies which Nordquist considered, found some promise of durability. A schedule of reinforcement which was phased out very gradually seemed to lead to longer-lasting change.

Gresham (1982) advocated social skills training for handicapped children prior to or in conjunction with mainstreaming. Methods which he reviewed included:

manipulation of antecedents, such as prompting nonhandicapped peers to initiate social interaction with handicapped children or sociodramatic activities; manipulation of consequences, such as reinforcement or token programs with group or individual contingencies; and modeling, including film modeling, live modeling, and combinations of live modeling, instructions, and praise. Durability of results was not reported by Gresham.

Kneedler (1980) reviewed a number of intervention procedures which she termed "cognitive techniques." She observed that although most studies using cognitive techniques to change social behaviors attempted to decrease disruptive behaviors, a few aimed at resistance to temptation and even fewer focused on appropriate assertiveness behaviors. The cognitive interventions usually involved either self- evaluation/self-instruction or problem-solving instruction, althouth the two areas are not necessarily mutually exclusive. Demonstrations of techniques appear to be effective (Robin, Schneider, & Dolnick, 1976; Snyder & White, 1979), but the issues of durability and generality of effects in this area have not been resolved.

Coaching is a cognitive strategy added by Asher et al. (1977) to other methods. It involves: (a) instructing the child in correct rules of behavior, (b) rehearsing the application of the rules, and (c) giving the child feedback on performance in a "real" situation, including suggestions

for improvement. The study by Oden and Asher (1977) shows particular promise for durability of effects for the coaching technique. Nine- and ten-year-old socially isolated children, who were coached in social skills relevant to friendship-making and were given practice and "postplay review," improved significantly in peer ratings and had continued progress in a one-year follow-up assessment. The finding that after one year the effect was maintained in different classrooms suggests some setting generality for this technique.

Asher et al. (1977) have studied the coaching technique as a means for increasing interactions of isolated children. Others (e.g. Douglas, 1976; O'Leary, 1968; Shure & Spivak, 1978) have used similar cognitive or problem-solving strategies in decreasing negative behavior of children who are difficult or disruptive in classrooms.

Social skills, those social behaviors that produce positive consequences with teachers and peers in a school setting, have been shown to be important to later success of children, as well as related to achievement and general school success. The mainstreamed handicapped child is potentially at considerably more social risk than the nonhandicapped child. A number of techniques for improving social skills have been described. However, these techniques are in the beginning stages of development and in

need of further refinement to demonstrate durability and generality.

Teacher Attitudes Toward Mainstreaming

Johnson (1981) reported that many teachers are opposed to mainstreaming, and that the reasons for opposition include their lack of skills. This opposition is detrimental to successful mainstreaming of handicapped children into regular classrooms.

Research on teacher and student teacher attitudes in other areas supports that negative attitudes held by teachers are likely to influence the attitudes of student teachers as well. Copeland (1978) concludes as a result of research on training student teachers to employ the "target behavior" of asking probing questions, that there is a "class ecology" that shapes student teachers regardless of training. As new teachers enter the profession, their behavior may first be shaped by the existing system and then, once shaped, may continue to conform to and reinforce that system as other newer teachers enter and are shaped by it.

Yee (1969) measured student teacher attitudes before and after student teaching using the Minnesota Teacher Attitude Survey. He found that the attitudes of student teachers shifted toward those of cooperating teachers. Johnson (1968) found student teachers to change on a measure of

dogmatism/open mindedness as a function of the dogmatism/open mindedness of the supervising teachers.

It is important then, in order to promote the success of mainstreaming, to improve the conditions under which student teachers are influenced by their cooperating teachers by giving them skills with which to promote successful social integration of mainstreamed handicapped children.

## Purposes of the Research

The purpose of this research was to evaluate the effects of a procedure designed to facilitate the social acceptance of handicapped children in regular classrooms through training practice teachers to carry out a cognitive coaching intervention. The specific goals were:

1. To investigate the effectiveness and durability of the "cognitive coaching" technique for improving the social skills and facilitating the social acceptance of mainstreamed handicapped children.
2. To promote positive teacher attitudes toward mainstreaming through providing teachers with useful procedures for assisting integration.

## Research Hypotheses

Two hypotheses were tested:

Hypothesis I. Mainstreamed handicapped children who have received cognitive coaching to improve social skills

will show significantly improved social skills and acceptance when compared with groups with alternate training or no training.

Hypothesis II. Teachers who receive training in a cognitive coaching method to improve the social skills of mainstreamed handicapped children in their classrooms will have a significantly more positive attitude toward mainstreaming than teachers in groups receiving alternate training or no training.

# CHAPTER III

## Method

### Subjects

Subjects were 26 first- through fourth-grade children in public schools serving a predominantly middle-class population. These children were selected from classrooms in which student teachers from the Georgia State University Department of Early Childhood Education were placed for their student teaching experience. From each of 26 classes in which student teachers were placed, one child was chosen as a target child.

The target child was jointly chosen by the classroom teacher and the investigator based on the following criteria:

1. The child was referred to special education for evaluation, the evaluation process was completed, and the child recommended for special education services by the committee under one of the following categories: behavior disorder or specific learning disability. Children who met this criterion were selected on the basis of the following four criteria. When no child met

this criterion, a child who was currently referred for evaluation for specific learning disability or behavior disorder was given priority. When no appropriate child was in the referral process, a child was selected based on the other four criteria.

2. The child was in a regular classroom at least 25% of the day.
3. The child scored in the bottom third of the class on the peer play rating scale and/or the peer nomination scale.
4. The child was described by the classroom teacher as socially at risk. Criteria for this nomination included: the child was not liked by peers, the child exhibited inappropriate or disruptive classroom behaviors, or the child was withdrawn or unassertive.
5. When more than one child met the criteria, the target child was chosen by the classroom teacher and the investigator as the child with the greatest need to improve social skills.

As presented in Table 1, there were twenty males and six females in the subject group. One child was in a readiness class, nine were first-graders, nine were second-graders,

Table 1

Child Subject Demographic Frequencies

| Sex | |
|---|---|
| Male | Female |
| 20 | 6 |

| Grade | | | | |
|---|---|---|---|---|
| Readiness | First | Second | Third | Fourth |
| 1 | 9 | 9 | 3 | 4 |

| Race | |
|---|---|
| White | Black |
| 23 | 3 |

| Age in Months | | | | | | |
|---|---|---|---|---|---|---|
| 70-74 | 75-79 | 80-84 | 85-89 | 90-94 | 95-99 | 100-104 |
| 1 | 4 | 1 | 5 | 2 | 2 | 1 |
| 105-109 | 110-114 | 115-119 | 120-124 | 125-129 | 130-134 | |
| 1 | 0 | 2 | 0 | 1 | 1 | |

Missing: 4 Range: 73-130 months Mean: 93.27

Table 1

Continued

| Handicapping Condition | |
|---|---|
| Designated as socially at risk by teacher: | 6 |
| Diagnosed behavior disorder and socially at risk: | 13 |
| Behavior disorder referred for diagnosis and socially at risk: | 3 |
| Diagnosed learning disabled and socially at risk: | 3 |
| Learning disabled referred for diagnosis and socially at risk: | 1 |

| School | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3 | 4 | 1 | 1 | 3 | 3 | 4 | 2 | 3 | 2 |

| Experimental Condition | | |
|---|---|---|
| Social Skills Training | Individual Instruction Training | No Training |
| 9 | 9 | 8 |

three were third-graders, and four were fourth-graders. Twenty-three were white, and three were black. Ages ranged from 73 to 130 months, with a mean age of 93.27 months.

The children all were designated as socially at risk by the teacher. Six children were designated as socially at risk with no other handicapping condition. Of the rest of the children, thirteen were diagnosed, and three referred for diagnosis as behavior disordered, and three were diagnosed and one referred for diagnosis as learning disabled. The children came from ten different schools, with from one to four children in different classrooms in a single school.

After selection, children were randomly placed in one of the three conditions: cognitive coaching, individual instruction (control), or no training (control). Nine children and their student teachers were placed in the first two conditions, and eight children and their student teachers were placed in the third group.

The data were collected in two waves during two academic quarters in order to obtain an adequate sample for data analysis. Thus, assessment, identification, random assignment to groups, and intervention took place for 20 target children and 20 student teachers during the fall quarter, 1981, and 9 target children and 9 student teachers during the winter quarter, 1982.

## Initial Assessment of Classrooms

Opportunities for interaction. In order to obtain appropriate times for observations of interaction in the clsssrooms, an inventory of opportunities for interaction was administered before the first observation. For this assessment the Classroom Interaction Inventory, which was filled out by the classroom teacher and the student teacher, was used. The inventory is patterned after the Openness Program Structure Index (OPSI) developed by Dopyera and Lay (1975). The Classroom Interaction Inventory was used to select observation times during which interaction was permitted or expected.

## Preassessment Measures

Sociometric measures. Two sociometric measures were used to select children who were at social risk, and to assess the effect of the three intervention conditions on sociometric status. Sociometric measures were first used by Moreno (1934). The early measures were a form of positive or negative nomination of peers in response to a question or situation (e.g., "Who would you choose for best friend, work partner, playmate?"). This nomination form has been shown tc be quite reliable with upper elementary children (Busk, Ford, & Schulman, 1973; Roff, Sels, & Golden, 1972). Asher, Singleton, Tinsley, and Hymel (1979) have devised a picture-rating scale which has had greater test-retest

reliability (.63 to .78) than the nomination technique for preschoolers.

There is evidence (Asher & Hymel, 1981) that although nomination and rating scale sociometric techniques are correlated, they measure different dimensions of children's social status. Positive nominations may indicate how many peers regard a child as a high priority playmate, whereas the rating scale may provide an index of a child's overall level of acceptability or likeability among peers. Therefore, both measures were used in this study.

The two initial sociometric measures were administered at the same time by the student teacher assigned to each class. For children in second, third, and fourth grades, who could read each other's names, the rating scale was administered in the form of a class roster, with a happy, a neutral, and a sad face column next to the names. Children checked the box under the face that best described how they felt about the classmate named. Then they were asked to write the names of the three classmates they liked to play with most. The younger children, in readiness and first-grade classes, rated photographs of all children in their classes by a sorting method. Photographs were made of all the children in the class. The student teacher took each child out of the classroom separately to administer first the rating scale and then the nomination instrument, which involved the selection of the three most preferred playmates.

The first administration of the sociometric instruments preceded the final selection of target children as subjects, as one of the selection criteria was a ranking in the lowest third of the class on the sociometric rating scale, and/or the sociometric nomination scale.

The observational measure. Naturalistic observations were made of the target child after selection but before intervention. The observation system was adapted from those of Singleton and Asher (1977); Gottman, Gonso, and Rassmussen (1975); and Quay and Jarrett (1981). Observation times were selected from the Classroom Interaction Inventory filled out by the classroom teacher at the time of the first sociometric assessment. Children were observed only during times when there was an opportunity for interaction between children, e.g., "choice" times in the classroom, lunch, recess, etc. Children were observed on three different occasions during the assessment week.

A sequential time-sampling method was used for the observations. The child was observed for ten seconds, then the behavior was recorded during the next five seconds. A pretaped signal with different tones at the beginning of five- and ten-second intervals was used to indicate the observation and recording time segments to the observer, who used a cassette player with earphone. Each child was observed for a total of thirty minutes during the three

assessments, resulting in 120 observations for each assessment.

The observational assessments were intended primarily to assess how much the child was interacting with peers and how much of the interaction was positive. A positive interaction was one in which a child was being overtly positive (e.g., sharing, smiling) or engaging in what might be called a maintenance activity (e.g., quietly talking, working on a task with another child). A negative interaction was one in which the child was being overtly negative toward another child, or another child was being overtly negative toward the child (e.g., arguing, unpleasant teasing, taking away something from a child against the child's will, hitting, speaking with a negative tone of voice).

The observers recorded whether the child was alone or with others, interacting or not interacting. If the child was not interacting, the observer recorded whether the child was involved with materials, watching others, or uninvolved. If the child was interacting, the observers recorded whether the interaction was with one peer, more than one peer, or an adult.

For analysis, interaction behaviors were summed under "positive interaction" and "negative interaction". In order to compare children's different activity levels, the total number of intervals in which children were not interacting was also calculated.

The seven observers were five graduate students and two professional women (a teacher and a social worker) currently working as homemakers. The observers were trained in classrooms which were not used in the study to a reliability criterion of 85%, calculated as the total number of intervals in each category in which there were no disagreements on scoring an interaction as non-interacting, positive, or negative divided by the total number of intervals of observation. On two occasions during the actual data collection, a second observer was assigned to check reliability. Reliabilities during pre-training averaged 93.24% for the interaction category (whether the child was interacting or not interacting, and if there was interaction, whether the interaction was positive or negative). Reliabilities during the intervention averaged 93.21%.

Attitude toward mainstreaming. In order to assess the effect of the intervention on student teachers' and teachers' attitudes toward mainstreaming, the Educational Attitude Survey, developed by Reynolds and Greco (1979) to measure teachers' attitudes toward mainstreaming, was administered to all the student teachers and the classroom teachers involved in the study before and after the intervention.

Assessment During the Intervention

Training criteria. Student teachers met certain criteria in implementing the coaching or individual instruction strategy with the target children. These included (1) attendance at the six-hour student teacher training session, which included explanation and rehearsal of the coaching procedure, (2) a score of 85% of an objective examination covering the material presented in the session, and (3) completion of eight 15-minute coaching and feedback sessions with the target child.

Monitoring of the intervention. In order to assure that these criteria were met, the investigator made an on-site visit to observe at least one coaching session, to consult with the student teacher regarding problems in the coaching procedure, and to view records of the coaching sessions which were kept by student teachers. These written records were collected by the experimenter at the end of the intervention. If the criteria were not met by a student teacher, the child and student teacher in that class were to be dropped from the analysis. None were dropped for failure to meet these criteria, although several student teachers and children were droppped from the analysis because the student teacher did not complete the student teaching quarter for various reasons or because the child left the school or had an extended illness.

Outcome Measures for Children

Sociometric measures. The sociometric measures were readministered by the student teachers at the end of the four-week intervention. Approximately five weeks after the post-asseessment, the sociometric measures were administered a third time to determine durability of effects. The experimenters who conducted the observations administered the sociometric post-postassessment because the student teachers had completed their ten-week experience, and were no longer in the classrooms.

The observational measure. Observations were also repeated at the end of the four-week intervention, and again approximately five weeks later.

Child evaluations by teachers and student teachers. In order to examine the effectiveness of the intervention from the point of view of the teachers and student teachers in the classrooms of the target children, an evaluation questionnaire was administered at the completion of the intervention period. Teachers and student teachers were asked to respond separately, in writing, to the question, "What changes, if any, have you observed in your target child in the last five weeks (the time between pre-assessment and the first post assessment)?" The evaluations were then coded to permit statistical analysis. A graduate student unfamiliar with the research hypotheses, or even the nature of the study, served as principal coder. Responses were categorized under the following headings:

(1) no improvement or worse (2) social improvement, (3) academic improvement, and (4) both social and academic improvement. The investigator also coded the evaluations separately in order to check the reliability of the coding, and agreement was reached on 88% of the categorizations, as calculated by dividing the total number of categorizations in which both coders agreed by the number of categorizations made.

Outcome Measure for Teachers

The attitude survey was readministered to both student teachers and teachers at the end of the intervention.

The Experimental Treatments

Three conditions were employed: the cognitive coaching condition; the individual instruction (control) condition, which was intended to control for the experimental or "Hawthorne" effect (Cook & Campbell, 1979), which might result from increased attention to the target child, the student teacher, or both; and the no-training (control) condition.

The Coaching Condition. The coaching treatment is closely patterned after that used by Oden and Asher (1979).

After initial assessment, final selection of subjects, and random assignment of subjects to the three experimental conditions, a six hour training session was held for the student teachers in the coaching condition. At this

training session, student teachers were first given guidelines for increasing cooperative activities in the classroom. Then they were given a rationale for using cognitive techniques to improve children's social skills. The procedures for conducting the particular cognitive coaching technique were presented and discussed. Students had opportunities to rehearse the coaching sessions, and were given a written examination of the material covered during the training session. All of the students were successful at scoring 85% or higher on the exam.

Basic scripts developed during the training were provided for the student teachers to conduct eight coaching/play sessions in the four weeks of the intervention. These sessions were to teach the children basic concepts of "getting along" with peers, including: (1) participation--getting started, paying attention; (2) cooperation--taking turns, sharing material, (3)) communication--talking with and listening to the other person; and (4) validation support--being friendly, fun, and nice (e.g., looking at the other person, giving a smile, offering help or encouragement. A summary of the training session and a sample script are included in Appendix E.

Each coaching session was followed by a practice session in which the target child engaged in an activity (e.g. a game or art activity) with a peer selected from the middle or upper third of the class on the sociometric rating scale. The child was paired with a different peer each time for the

follow-up activity. The student teacher observed the ten- to fifteen-minute follow-up session, then disccussed the session in private with the target child afterwards, giving feedback and reinforcement for application of the "rules" which were presented to the child. The student teacher also was instructed to reinforce the child for appropriate "getting along" behaviors at other times during the day and to keep a record of the occasions of reinforcement.

In each session, the same key steps were followed in sequence for each concept: (1) the coach proposed that the concept (e.g., participation) was important in helping to make activities with classmates fun or enjoyable; (2) the coach evaluated the child's understanding by requesting specific behavioral examples of the concept in reference to classroom activities; (3) the coach repeated or rephrased the child's examples, suggesting shorter phrases, or providing an example if the child did not respond; (4) the coach asked the child to provide specific behavioral examples (including the opposite types) which would be likely to result in making the activity fun or enjoyable for the children; (5) the coach asked the child to try out some of the ideas in the activity which immediately followed; and (6) the coach told the child that she would check back to ask the child how helpful the ideas were in making the activity fun or enjoyable for both children.

After the first four coaching sessions, which covered the four basic concepts, the coaching was geared to the

individual child in that only those concepts which the child did not appear to understand and/or remember were coached and reviewed.

The individual instruction (control) condition. The student teachers assigned to the control training group received one six-hour training session in individualizing instruction. The session included specific training to meet the requirements for individualizing instruction of the State of Georgia Teacher Performance Assessment Instruments. The session also included preparation by the student teacher of an individualized plan for meeting academic needs of the target child.

Following the training, the teacher spent eight twenty-minute individual learning sessions with the target child during the four-week intervention period. This condition was intended to control for the experimental or "Hawthorne" effect (Cook & Campbell, 1979), which might result from increased attention to the target child, the student teacher, or both. The author conducted both the experimental and control training sessions.

The no intervention condition. In this condition, no intervention was made with either the student teacher or the target child, but the assessments were conducted on the same schedule as in the other two conditions.

Summary of Experimental Design

The study identified mainstreamed handicapped children who were socially at risk, then randomly asssigned the children to three treatment conditions. The conditions were:

1. The coaching condition. In this cognitive training condition the student teacher in the class of each target child was given six hours of classroom training in the coaching technique, following which the student teacher implemented the strategy with the target child. The Trainer made a follow-up visit to the classroom to facilitate the intervention, and to insure that the intervention met pre-established criteria.
2. The individual instruction condition. This control training condition was included to ascertain whether the treatment is a result of the particular intervention outlined in condition #1, or a result of increased attention given to the student teacher and/or the target child. The condition involved six hours training in individualizing instruction, followed by eight twenty-minute tutoring sessions with the target child, conducted by the student teacher. The trainer made a follow-up

visit to the classroom to facilitate the individualized instruction program, and to insure that this intervention met pre-established criteria.

3. In the third condition, no intervention was made with either the student teacher or the target child.

In order to select subjects and determine short- and long-term effects of the intervention, the following assessments were made before and after the intervention.

1. Child assessment. Two types of sociometric assessments and a behavioral assessment were made three times during the experiment: before the intervention, immediately after the intervention, and four to six weeks after the completion of the intervention. Behavioral observations were made one to two weeks after the first sociometric assessments (after the target children were selected), and during the week of the other two sociometric assessments. Teachers and student teachers were also asked to evaluate the target child's change (if any) at the completion of the intervention.
2. Teacher assessment. The Classroom Interaction Inventory was used to select observation times. Teachers were asked to fill out the inventory before the first child assessments. The

teachers also completed a survey of their attitudes toward mainstreaming before and after the intervention. The trainer made on-site visits to assure that the intervention criteria were being met.

# CHAPTER IV

## Results

Data analysis procedures and results will be reported in three areas: (a) sociometric and observational data collected on target children, (b) evaluation data on target children received from teachers and student teachers, and (c) data collected on teacher and student teacher attitudes.

### Sociometric and Observational Analysis

The sociometric and observational data collected on the children consisted of five measures. These five dependent variables were computed by the following procedures:

Sociometric rating score. In the sociometric rating scale, children rated peers with a happy face, given a score of three; a neutral face, given a score of two; and a sad face, given a score of one. The total score for each child for each administration was divided by the number of children rating at that administration to make the scores comparable regardless of class size. Thus, the sociometric rating score represented an acceptance rating from the total class. Means and standard deviations for the sociometric rating score are presented in Table 2.

Table 2

Means and Standard Deviations by Time for Sociometric Rating Scale

| | Condition | n | Time 1 | | Time 2 | | Time 3 | |
|---|---|---|---|---|---|---|---|---|
| | | | Mean | SD | Mean | SD | Mean | SD |
| 1. | Coaching | 9 | 1.96 | 1.12 | 2.02 | 0.27 | 1.98 | 0.16 |
| 2. | Individual instruction | 9 | 1.68 | 0.39 | 1.78 | 0.32 | 1.62 | 0.30 |
| 3. | No training | 8 | 1.78 | 0.30 | 1.85 | 0.35 | 1.69 | 0.28 |

Sociometric nomination score. For a first choice nomination by a peer, a child received a score of three; for a second choice nomination a score of two; and for a third choice nomination a score of one. The total score for each child for each administration was divided by the number of children in the class to whom the instrument was administered in order to make the scores comparable regardless of class size. For two children, on two administrations, data were missing on this variable, and the means of all the subjects for this variable for the same administration were used as the score for each of these children. Means and standard deviations for the sociometric nomination score are presented in Table 3.

No interaction intervals. This variable was the total number of observed 10-second intervals in the assessment period during which the target child was not interacting with a peer or peers. The total possible number of 10-second intervals for each assessment period (three 10-minute observations during one week) was 120. Means and standard deviations for the no-interaction intervals are presented in Table 4.

Positive interaction intervals. This variable was the total number of observed 10-second intervals in the assessment period during which the target child was interacting with a peer or peers in a manner defined as positive or neutral (e.g., talking, playing a game, laughing, smiling, using materials together). The total

Table 3

Means and Standard Deviations by Time for Sociometric Nomination Scale

| | | Time 1 | | Time 2 | | Time 3 | |
|---|---|---|---|---|---|---|---|
| Condition | n | Mean | SD | Mean | SD | Mean | SD |
| 1. Coaching | 9 | .065 | .054 | .090 | .082 | .147 | .102 |
| 2. Individual instruction | 9 | .045 | .046 | .018 | .039 | .104 | .193 |
| 3. No training | 8 | .109 | .115 | .105 | .105 | .070 | .090 |

Table 4

Means and Standard Deviations by Time

for No Interaction Intervals

| | | Time 1 | | Time 2 | | Time 3 | |
|---|---|---|---|---|---|---|---|
| Condition | n | Mean | SD | Mean | SD | Mean | SD |
| 1. Coaching | 9 | 34.78 | 21.19 | 49.78 | 34.39 | 47.67 | 20.24 |
| 2. Individual instruction | 9 | 40.44 | 24.38 | 31.11 | 25.07 | 27.22 | 16.90 |
| 3. No training | 8 | 47.12 | 20.43 | 40.50 | 30.95 | 57.25 | 20.41 |

possible number of 10-second intervals for each assessment period was 120. Means and standard deviations for positive interaction intervals are presented in Table 5.

Negative interaction intervals. This variable was the total number of observed 10-second intervals in the assessment period during which a child was interacting with a peer or peers in a manner defined as negative (e.g. arguing, unpleasant teasing, taking away something, hitting, speaking with a negative tone of voice). The total possible number of 10-second intervals in the assessment period was 120. Means and standard deviations for negative interaction intervals are presented in Table 6.

Analysis procedures. The effect of the experimental treatments was determined by two one-way multivariate analyses of variance with repeated measures, using the Revised MANOVA Program developed by Elliot M. Cramer, University of North Carolina, and converted for use on the UNIVAC 70/7 by Philip M. Winter. This program tests significance using the Wilkes Lamda Criterion. The five dependent variables were sociometric rating score, sociometric nomination score, non-interacting intervals, positive interacting intervals, and negative interacting intervals. The between subjects factor was experimental condition: cognitive coaching, individual instruction, and no training. The within subjects factor was time of observation: preassessment, first postassessment, and second postassessment.

Table 5

Means and Standard Deviations by Time

for Positive Interaction Intervals

| | | Time 1 | | Time 2 | | Time 3 | |
|---|---|---|---|---|---|---|---|
| Condition | n | Mean | SD | Mean | SD | Mean | SD |
| 1. Coaching | 9 | 80.44 | 19.00 | 64.44 | 33.49 | 71.56 | 21.10 |
| 2. Individual Instruction | 9 | 76.22 | 25.02 | 85.33 | 24.11 | 89.78 | 18.75 |
| 3. No training | 8 | 68.12 | 20.57 | 77.38 | 31.41 | 60.87 | 20.91 |

Table 6

Means and Standard Deviations by Time for Negative Interaction Intervals

| | | Time 1 | | Time 2 | | Time 3 | |
|---|---|---|---|---|---|---|---|
| Condition | n | Mean | SD | Mean | SD | Mean | SD |
| 1. Coaching | 9 | 5.22 | 6.10 | 5.78 | 11.63 | 0.78 | 1.99 |
| 2. Individual Instruction | 9 | 3.33 | 3.87 | 3.56 | 3.13 | 3.00 | 4.18 |
| 3. No Training | 8 | 4.75 | 5.06 | 2.12 | 4.12 | 1.88 | 2.36 |

Because the sum of the three observational variables was the constant 120, these three variables could not be used in the same analysis. Thus, two separate multiple analyses of variance were performed. Because there were variables with a score of zero, the constant one was added to all of the variables, so that the assumptions of the analysis would not be violated. The constant was not included in the report of means and standard deviations.

Results of sociometric and observational analysis. The first multiple analysis of variance was performed with the three dependent variables: sociometric rating scale, sociometric nomination scale, and no interaction intervals. No significant effects were found for experimental treatment, time, or experimental treatment by time interactions on the MANOVA. Table 7 presents a summary of the multivariate analysis of variance for the two sociometric measures and the non-interacting intervals.

The second multiple analysis of variance was performed with the two dependent variables positive interaction intervals and negative interaction intervals. No significant effects were found for experimental treatment, time, or experimental treatment by time interactions on the MANOVA. Table 8 presents a summary of the multivariate analysis of variance for positive interaction intervals, and negative interaction intervals.

These results do not support the research hypothesis that cognitive coaching would significantly improve social

Table 7

Summary of Multivariate Analysis of Variance with Repeated Measures with Three Dependent Variables: Sociometric Rating Scale, Sociometric Nomination Scale, and Non-Interacting Intervals

| Variable | df | F |
|---|---|---|
| Experimental Condition | 2,24 | 2.028 |
| Time | 2,45 | 1.621 |
| Experimental Condition x Time | 4,45 | 1.448 |

Table 8

Summary of Multivariate Analysis of Variance with Repeated Measures with Two Dependent Variables: Positive Interaction Intervals, and Negative Interaction Intervals

| Variable | df | F |
|---|---|---|
| Experimental Condition | 2,24 | .763 |
| Time | 2,45 | 1.067 |
| Experimental Condition x Time | 4,45 | 1.698 |

skills and acceptance as compared with individual instruction or no training, as measured by sociometric scores and observations of interaction quantity or quality.

Teacher and Student Teacher Evaluation Data

In order to determine whether teachers and student teachers in the three experimintal conditions differed in their evaluations of the target children at the end of the intervention period, a chi-square test of proportions was performed. The independent variable was the experimental condition: cognitive coaching, individual instruction, and no training. The dependent variable was the principal coder's categorizations of the teacher and student teacher evaluations. The categories employed were: both social and academic improvement, social improvement, academic improvement, and no change or worse. The frequencies and percentages of the combined categorizations of the teachers' and student teachers' evaluations are presented in Table 9.

A significant overall difference was found: $\chi^2$ (6) = 32.44, $p < .0005$, indicating a significantly different distribution of frequencies among the experimental conditions.

In order to determine the specific area of differences, six post hoc analyses were performed, employing a partitioning of contingency tables into single degrees of freedom (Kimball, 1954). Because the degrees of freedom equalled one, the Yates correction for continuity was

Table 9

Summary of Teacher and Student Teacher Evaluations

at Completion of Intervention Period

Question asked: What changes (if any) have you noticed in your target child in the last five weeks?

| Condition | Both Social and Academic Improvement | Social Improvement | Academic Improvement | No Change or worse |
|---|---|---|---|---|
| Cognitive Coaching | 2 (11%) | 13 (72%) | 0 (0%) | 3 (17%) |
| Individual Instruction | 5 (28%) | 1 (6%) | 9 (50%) | 3 (17%)* |
| No Training | 1 (6%) | 3 (19%) | 3 (19%) | 9 (56%) |

* Percentages may not add to 100 due to rounding error.

applied. These subsequent chi-square analyses indicated that all of the conditions differed significantly from one another. The cognitive coaching condition differed from the individual instruction condition in the first two post hoc comparisons: analysis 1, in which the two conditions were compared on two variables, one a categorization of both social and academic improvement (both), the other a categorization of social improvement only (social), $\chi^2$ (1) = 9.26, $p < .005$, and analysis 2, in which the two conditions were compared on two variables, one a combination of both and social, the other academic improvement only (academic), $\chi^2$ (1) = 13.016, $p < .001$. They did not differ in the third analysis, when both social and academic improvement (both), social improvement only (social) and academic improvement only (academic) were combined into one category (improvement) and compared with the no change or worse (no improvement) category.

These findings indicate that a greater frequency of the teachers and student teachers in the cognitive coaching group evaluated their target children as improved in the social area, while a greater frequency of the teachers in the individual instruction group evaluated their target children as improved in the academic area.

In the fourth through sixth follow-up chi-square analyses, the distributions of frequencies of the two treatment conditions were combined and compared with that of the no intervention condition (condition 3). No significant

differences were found in analyses 4 and 5, which compared the area of improvement, but a significant difference was found in the sixth analysis, in which the three improvement categories were combined and compared with the no improvement category $\chi^2$ (1) = 8.25, $p < .005$.

This finding indicates that more teachers and student teachers in the two intervention groups evaluated their target children as improved than did the teachers and student teachers in the no training group, who more frequently said that their target children showed no improvement. The follow-up chi-square analyses are summarized in Table 10.

The results of the evaluation data indicate that teachers and student teachers in the cognitive coaching group tended to cite social improvement in their target children, that teachers and student teachers in the individual instruction group tended to cite academic improvement in their target children, and that teachers and student teachers in the no training group tended to indicate no improvement in their target children.

Teacher and student teacher attitude data

In order to compare attitudes of teachers and student teachers in the experimental conditions before and after the intervention, a 2 (teacher status) x 3 (experimental condition) analysis of variance with a repeated measure (score for two administrations) was performed for each of

Table 10

Summary of Post Hoc Analyses of Teacher and Student Teacher Evaluations, Partitioning the Chi-square into Single Degrees of Freedom

Analysis 1: Comparison of the Cognitive Coaching Condition (Condition I) with the Individual Instruction Condition (Condition II) on the Categories Social and Academic Improvement (Both) versus Social Improvement Only (Social)

| | Both | Social |
|---|---|---|
| I | 2 | 13 |
| II | 5 | 1 |

$\chi^2$ (1) = 9.26, $p < .005$

Analysis 2: Comparison of Condition I with Condition II on the Combined Categories of Both and Social versus Academic Improvement Only (Academic)

| | Both and Social | Academic |
|---|---|---|
| I | 15 | 0 |
| II | 6 | 9 |

$\chi^2$ (1) = 13.016, $p < .001$

Table 10

Continued

Analysis 3: Comparison of Condition I with Condition II on Combined Categories of Both, Social, and Academic (Improvement) versus the Category of No Change or Worse (No Improvement)

| | Improvement | No Improvement |
|---|---|---|
| I | 15 | 3 |
| II | 15 | 3 |

$\chi^2$ (1) = .2

Analysis 4: Comparison of Combined Conditions I and II with No Intervention Condition (Condition III) on Both versus Social

| | Both | Social |
|---|---|---|
| I and II | 1 | 14 |
| III | 1 | 3 |

$\chi^2$ (1) = .54

Table 10

Continued

Analysis 5: Comparison of Combined Conditions I and II with Condition III on Both and Social versus Academic

| | Both and Social | Academic |
|---|---|---|
| I and II | 21 | 9 |
| III | 4 | 3 |

$\chi^2$ (1) = .50

Analysis 6: Comparison of Combined Conditions I and II with Condition III on Improvement versus no Improvement

| | Improvement | No Improvement |
|---|---|---|
| I and II | 30 | 6 |
| III | 7 | 9 |

$\chi^2$ (1) = 8.25, $p < .005$

the three scores obtained on the test: The total score, which measured general attitudes toward mainstreaming, the factor 1 score, which was interpreted by Reynolds and Greco (1979) as measuring attitudes toward administrative aspects of mainstreaming, and the factor 2 score, which was interpreted by Reynolds and Greco (1979) as measuring attitudes toward educational aspects of mainstreqming.

Because three separate analyses were performed, the alpha level was set at $p < .017$, producing a total alpha level for the three tests of $p < .05$. Thus the Bonferroni rule for establishing experiment-wise error rate was applied (Kirk, 1968).

For these analyses, the BMD2V program developed by the Health Sciences Computing Facility of the University of California in Los Angeles (revised, 1978) was used.

Total score results. The means and standard deviations of the total score on the attitude survey are presented in Table 11. The summary of the analysis of variance with repeated measuress for the total score on the attitude survey is presented in Table 12. As indicated in Table 10, a significant effect was found for teacher status, $F$ (1,46) = 10.63, $p < .01$, and for time, $F$ (1,46) = 8.83, $p < .01$. No significant effects were found for the experimental condition or for interactions between the experimental condition, time, and teacher status. An inspection of the means in Table 11, and the lack of a teacher by time

Table 11

Means and Standard Deviations of Total Score on Attitude Survey

| Condition | Teacher Status | Total Time 1 Mean | Total Time 1 SD | Total Time 2 Mean | Total Time 2 SD |
|---|---|---|---|---|---|
| Cognitive Coaching | Teacher | 49.00 | 10.57 | 47.11 | 9.21 |
| | Student Teacher | 58.44 | 7.38 | 55.89 | 5.13 |
| Individual Instruction | Teacher | 53.44 | 13.34 | 53.56 | 15.16 |
| | Student Teacher | 62.56 | 8.73 | 58.11 | 11.73 |
| No Training | Teacher | 47.87 | 9.08 | 47.00 | 9.10 |
| | Student Teacher | 60.00 | 5.07 | 54.25 | 8.73 |

Table 12

Summary of Analysis of Variance for Total Score on Attitude Survey

| Source | df | F |
|---|---|---|
| Teacher Status | 1,46 | 10.63* |
| Experimental Condition | 2,46 | 1.32 |
| Teacher Status x Experimental Condition | 2,46 | .11 |
| Time | 1,46 | 8.83* |
| Time x Teacher Status | 1,46 | 3.79 |
| Time x Experimental Condition | 2,46 | .18 |
| Time x Teacher Status x Experimental Condition | 2,46 | .62 |

* $p < .01$

interaction indicate that the student teacher scores were significantly higher than the teacher scores on both administrations, but that both the teachers' and the student teachers' scores showed a significant decrease over time.

Factor 1 results. The means and standard deviations for the factor 1 scores on the attitude survey are presented in Table 13. The summary of the analysis of variance with repeated measures for factor 1 is presented in Table 14. On factor 1, as indicated in Table 14, a significant difference was found only for teacher status, $F$ (1,46) = 7.08, $p < .01$. Again, on inspection of the means, student teachers were shown to score higher than teachers (i.e. show a more positive attitude toward mainstreaming), on both administrations, and neither teachers or student teachers showed a significant difference over time or by experimental condition. No significant interactions were found.

Factor 2 results. The means and standard deviations for factor 2 scores on the attitude survey are presented in Table 15. A summary of the analysis of variance with repeated measures for factor 2 scores is presented in Table 16. Significant effects were found for teacher status, $F$ (1,46) = 12.41, $p < .001$, time, $F$ (1,46) = 9.44, $P < .01$, and for teacher status by time interaction, $F$ (1,46) = 7.19, $p < .01$. Again, as with the two previous variables, the student teachers showed a significantly more positive attitude toward mainstreaming than the classroom teachers. There was a significant decrease in scores over time across

Table 13

Means and Standard Deviations of Factor 1 Scores on Attitude Survey

| Condition | Teacher Status | Time 1 Mean | Time 1 SD | Time 2 Mean | Time 2 SD |
|---|---|---|---|---|---|
| Cognitive Coaching | Teacher | 22.56 | 10.57 | 21.22 | 5.47 |
| | Student Teacher | 24.22 | 4.29 | 25.44 | 2.60 |
| Individual Instruction | Teacher | 23.22 | 5.74 | 23.11 | 6.11 |
| | Student Teacher | 28.00 | 4.15 | 26.22 | 76 |
| No Training | Teacher | 21.87 | 5.49 | 21.38 | 5.60 |
| | Student Teacher | 25.87 | 2.29 | 24.12 | 4.64 |

Table 14

Summary of Analysis of Variance for Factor 1 Score on Attitude Survey

| Source | df | F |
|---|---|---|
| Teacher Status | 1,46 | 7.08* |
| Experimental Condition | 2,46 | 0.09 |
| Teacher Status x Experimental Condition | 2,46 | .05 |
| Time | 1,46 | 2.21 |
| Time x Teacher Status | 1,46 | .02 |
| Time x Experimental Condition | 2,46 | .49 |
| Time x Teacher Status x Experimental Condition | 2,46 | 2.04 |

* $p < .01$

Table 15

Means and Standard Deviations of Factor 2 Scores on Attitude Survey

| Condition | Teacher Status | Time 1 Mean | Time 1 SD | Time 2 Mean | Time 2 SD |
|---|---|---|---|---|---|
| Cognitive Coaching | Teacher | 26.44 | 5.53 | 25.89 | 4.59 |
| | Student Teacher | 34.22 | 4.68 | 30.44 | 3.26 |
| Individual Instruction | Teacher | 30.22 | 7.85 | 30.44 | 9.26 |
| | Student Teacher | 34.56 | 6.10 | 31.89 | 6.56 |
| No Training | Teacher | 26.00 | 3.96 | 25.62 | 4.20 |
| | Student Teacher | 34.13 | 3.64 | 30.13 | 4.42 |

Table 16

Summary of Analysis of Variance for Factor 2 Score on Attitude Survey

| Source | df | F |
|---|---|---|
| Teacher Status | 1,46 | 12.41** |
| Experimental Condition | 2,46 | 1.53 |
| Teacher Status x Experimental Condition | 2,46 | .60 |
| Time | 1,46 | 9.44* |
| Time x Teacher Status | 1,46 | 7.19* |
| Time x Experimental Condition | 2,46 | .28 |
| Time x Teacher Status x Experimental Condition | 2,46 | .03 |

** $p < .001$

* $p < .01$

both groups, but the student teachers' scores decreased more sharply than classroom teachers' scores. The graph in Figure 1 illustrates the interaction effect, showing that the teachers attitudes changed little over time, whereas the student teachers scores decreased considerably, bringing their attitudes closer to the more conservative attitudes of the teachers after the five-week intervention period. The means of the attitude survey scores by teacher status and time are presented in Table 17.

Thus the hypothesis that the student teachers in the cognitive coaching group would gain more positive attitudes toward mainstreaming as compared with the other groups was not upheld. Rather, the change in attitudes toward mainstreaming over time was in the opposite direction than that hypothesized, being less positive after the intervention. On the factor most closely related to actual teaching practices, the change in student teachers' attitudes was greater than the change in classroom teachers' attitudes.

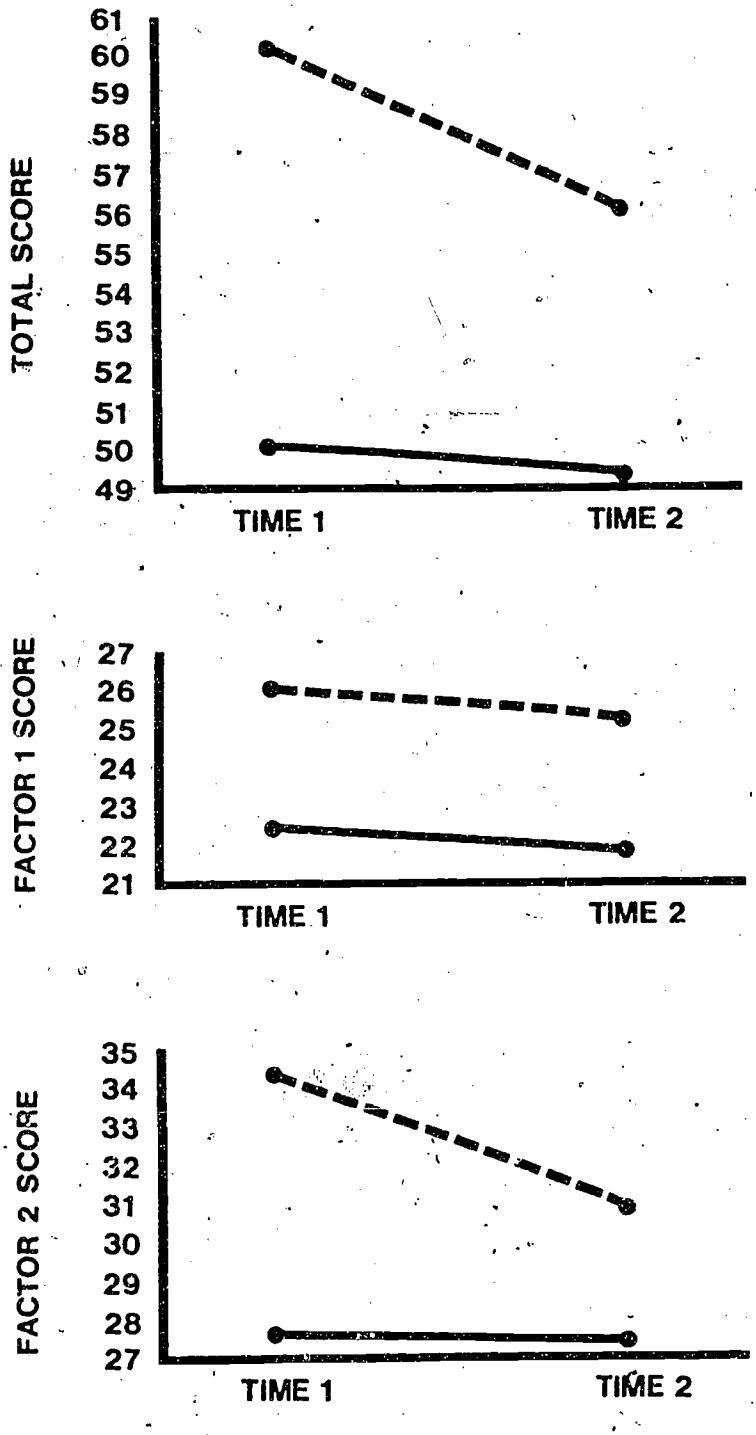


FIGURE 1. Graphs showing time by teacher status interaction on attitude survey scores.

STUDENT TEACHER

TEACHER

Table 17

Means of Attitude Survey Scores

by Teacher Status and Time

| | Total | Factor 1 | Factor 2 |
|---|---|---|---|
| Teacher | | | |
| Time 1 | 50.19 | 22.51 | 27.61 |
| Time 2 | 49.31 | 21.92 | 27.38 |
| Student Teacher | | | |
| Time 1 | 60.35 | 26.04 | 34.30 |
| Time 2 | 56.15 | 25.30 | 30.84 |
| Teacher and Student Teacher Combined | | | |
| Time 1 | 55.21 | 24.31 | 30.96 |
| Time 2 | 52.73 | 23.61 | 29.11 |

# CHAPTER V

## Discussion

This study evaluated whether a cognitive coaching technique, implemented by trained student teachers, would be effective at improving the social status of children who were identified as socially at risk. The design was to assign these identified children to one of three groups and to compare the group receiving cognitive coaching with one control group which received individual instruction training and a second control group which received no intervention. The effect that receiving the training and participating in the intervention had on the attitudes toward mainstreaming of these student teachers and their cooperating classroom teachers was also studied.

The results will be discussed in three sections: (a) the effects of the experimental conditions as indicated by sociometric and observational data, (b) the effects of the experimental conditions as indicated by the teachers' and student teachers' evaluations of the children, and (c) the effects of the experimental conditions on teacher and student teacher attitudes as measured by the attitude surveys.

The Effects of the Experimental Conditions as Indicated by Sociometric and Observational Data Analysis

The analysis of the sociometric and observational data indicated no change in the experimental cognitive coaching group or the control individual instruction group as a result of the intervention. This finding does not concur with that of previous investigations in which a cognitive coaching intervention procedure was used (Ladd, 1981; Oden and Asher, 1977). A number of alternate explanations for the finding of no immediate or long term differences among groups on these measures are possible.

The intensity and duration of student teacher training and the quality of implementation by the student teachers. The first explanation is that the intensity and duration of student teacher training and the quality of implementation by the student teachers may have been insufficient to affect change. This research differed from the previous studies in the way in which the cognitive coaching technique was implemented. In the present study, student teachers, not the investigator, implemented the intervention. The advantage of this approach was that it was more naturalistic, and if its effectiveness were supported, more immediately and practically applicable to wide use in schools. The disadvantage was that, with the lack of clear results, there is difficulty in determining at what level the intervention was not effective. The training of the student teachers may been inadequate to produce change due

to limited intensity or duration; the student teachers may not have implemented the technique well; or the training and implementation may have been adequate, with the intervention itself actually being ineffective.

It is possible that the six-hour training session with one follow-up visit by the investigator was not adequate to give the student teachers the skills needed to conduct the cognitive coaching intervention successfully. Evidence which indicates that the student teachers understood and followed the basic procedures was presented. However, their only experience with the procedures before beginning the intervention was a role-playing situation. Furthermore, most of the student teachers were novices at working with children, involved in their first full-time experience in the elementary school. They may not have known how to talk to the children on the appropriate level or how to motivate them effectively, both necessary to the success of the cognitive coaching intervention. More careful documentation of the implementation process, including analysis of the level of language used by student teachers, the language in child responses, and evidence of child motivation would have been valuable in determining the effectiveness and the quality of the implementation. Such documentation would also have permitted comparison of different student teachers' interpretations of the cognitive coaching, information which would facilitate training in the future.

The method of selection of target children. Children diagnosed or referred for diagnosis as learning disabled or behavior disordered were given priority as selection for target children. Further criteria for diagnosis included low scores on either the sociometric rating scales, which measured general acceptability of the children, low scores on the sociometric nomination scale, which was a measure of popularity of the child, and teacher evaluation. As observed by the investigator, the children selected generally fell into two groups: children who were extremely shy outsiders, and children who interacted frequently with peers but tended to do so in ways that annoyed the other children. The children in this second group also were known by the class and the teacher for not conforming to class rules. Other children had characteristics of both groups, and fell somewhere in between. Oden and Asher's (1977) "social isolates," selected by sociometric criteria, but not special education status, were not likely to have been identical to this group. Their selection of three children from each class may have resulted in target children with less severe problems. Also, school and community factors may have resulted in population differences.

The appropriateness of the method: the problem of the match. Evidence is shown in teacher and student teacher evaluation comments that the teachers and student teachers varied on views of the appropriateness of the cognitive coaching technique for the particular target child chosen in

each classroom. For some children, teachers and student teachers were very pleased with how the method matched the needs of the child (names are fictitious):

> "Patsy is talking more to her teachers. She is also volunteering to answer questions at group time....The individual attention from the student teacher has given her more confidence, and she feels more relaxed."
>
> "Shirley seems more outgoing and willing to play with certain children. The training sessions made her feel more comfortable."
>
> "Ken speaks kindly to the students when sharing rather than yelling or speaking accusingly."

For others, only part of the intervention, such as the peer-pairing follow-up activity, was appropriate:

> "I attribute these changes to Mary's play sessions with the other children in the classroom. Following a play session the child involved with her continued to interact with her."

For still others, the cognitive coaching method did not, in the views of the teachers and student teachers, serve the needs of the child.

> "I really haven't noticed any change in Paul."
>
> "Sam has become more violent. He almost seems to look for ways to get into trouble. I do not attribute these changes to (the intervention)."

The teachers and student teachers whose target children

were withdrawn rather than acting out seemed to report greater change in the children. The differential effect of the intervention on children with different social patterns of interaction might account for the absence of significant differences between the cognitive coaching group and the other groups on the sociometric and observational measures. From the evaluation comments, and the investigator's observation of the target children, one might speculate that the method was more effective with the shy, withdrawn child than with acting-out children. One might also speculate that it is an easier process to draw a shy child into interaction than it is to change the quality of interaction of a child who does not interact appropriately. The peer-pairing follow-up activities might have played an important part in helping shy children to make friends. Although these speculations cannot be examined here due to a lack of detailed data on the specific behaviors of the individual subjects, they may provide fruitful avenues for future research.

The adequacy of the measures. The failure to find differences among the experimental groups on the sociometric and behavioral measures could also be explained by the inadequacy or insensitivity of the measures. In order for a change to be registered on the sociometric measure, it would have to be a large one. Small changes could not influence the scores sufficiently to cause them to change. Because the scores represented a class average, a change in a

child's score would be noted only by means of change in the ratings of several children in the same direction. On the rating scale, a child may have been slightly more acceptable to peers, but not enough for the peer to place the child in a different category, e.g., from neutral to accept. On the nomination scale, a child may like a peer more, but not enough to select that child as one of the three preferred playmates.

In the observation procedure, several difficulties were also noticed. First of all, the time that children in public schools were permitted to interact varied widely from school to school and tended to be infrequent. Some schools provided free-play time every day for all classes; some, only in the lower grades; some, only when the weather was warm; and some allowed the children to interact only at lunch after they had finished eating. The observers made great efforts to observe target children during times when they would be most free to interact, working closely with the teachers to schedule observation times and skipping rainy days. Nevertheless, sometimes the best observation times were lunchtimes, when eating, strict lunchroom monitors, and lack of freedom of movement interfered with the quantity or quality of child interaction. Future research might use more comparable times (only in-class free time, for example), or might set up specific situations (Ladd, 1981) in which to observe interactions. However, this more controlled type of procedure would involve a

greater degree of intrusion on the teacher and the class, which this investigator attempted to avoid. The structuring of interaction situations would not be identical to the unstructured classroom situation and may not be generalizeable to it. Many trade-offs appear to be necessary in carrying out careful research in as naturalistic an environment as possible.

Insufficient number of subjects. Another explanation for the finding of no difference between groups on the sociometric and observational variables is the small number of subjects involved. This study used all the student teachers placed in public school elementary classrooms from the Early Childhood Department at Georgia State University during a six-month, two-quarter period. A larger study could involve student teachers at a number of schools, or could involve additional waves of student teachers and thus provide larger groups for comparison. However, an inspection of the means shows no trend in the data to suggest that change may actually have been demonstrated for a larger nuumber of subjects.

## Child Evaluations by Teachers and Student Teachers

In view of the absence of significant differences in the sociometric and observational data, it is interesting that significant differences did occur in the child evaluations by teachers and student teachers. In these evaluations, teachers and student teachers of the children in the

cognitive coaching group indicated that more social improvement occurred in their target children than in the children of the other groups, whereas teachers and student teachers in the individual instruction group indicated more academic improvement in their target children. Teachers and student teachers in the no intervention group indicated little change in their target children. Two alternate explanations for these findings are: (a) the training was not effective, and thus the teachers and student teachers were inaccurate in their reporting of change in the target children, and (b) the intervention methods were effective in their respective areas, and the teachers reported the change in children accurately.

Social desirability and dissonance. One explanation for the evaluation findings is the social desirability of the positive evaluations. The teachers and student teachers were not completely ignorant of the nature of the intervention which was carried out, because the student teachers were the implementors and the teachers were the mentors of the implementors of that intervention. They were aware of the kind of treatment group into which their target children had been placed. Because the student teachers implemented the intervention, they and their classroom teachers knew what kind of change they were looking for, thus increasing the likelihood of their finding change. Likewise, those in the no intervention condition were not looking for change, thus decreasing the likelihood that they would find change.

Cognitive dissonance theory (Festinger, 1957) provides another possible interpretation for the evaluation results. According to Festinger, the more an individual has invested in a commitment, the more that individual is likely to change an attitude in favor of that concept in which he or she has made an investment. In this situation, teachers and student teachers had invested time and effort in an intervention and thus may have seen a change in the child consonant with the investment which they have made.

Evidence for accuracy of teacher reports. Although changes in children were not found in the sociometric and observational data analyses, the teacher evaluations may actually be more sensitive, and therefore more accurate than the "objective" measures. Prior research (Hawkes, 1971) has suggested that teachers are successful in rating students' social adjustment, as well as in rating intelligence and motivation to work. Other studies (Brophy & Good, 1970, Evertson, Brophy, & Good, 1972) have shown teachers to be quite accurate at predicting student achievement. Thus, evidence exists to support the competence of teachers in making student evaluations, which in turn supports a conclusion that the teachers and student teachers reported the change in their target children accurately. Because of the improvement seen by teachers in both the cognitive coaching group and the individual instruction group, it would be difficult to draw conclusions about the value of the specific intervention on the basis of the interaction

and sociometric findings alone. Rather, the teacher evaluation data may actually reflect sensitive and accruate assessment of change.

Attitude Change in Teachers and Student Teachers

As shown in the graphs in Figure 1, the attitudes of classroom teachers toward mainstreaming changed very little over the approximately five week intervention period. However, student teachers, regardless of experimental condition, changed attitudes in the direction of the classroom teachers' attitudes. Thus, they became less positive toward mainstreaming, especially on the factor associated with actual teaching practices. The findings were the opposite of the predicted effect of the experimental intervention, that attitudes toward mainstreaming would change in a positive direction. This attitude change may have been caused by one or a combination of several factors, including socialization from the school, modeling of the classroom teachers, and the experience of actually working with handicapped children. Previous research findings (Copland, 1978; Johnson, 1968; Yee, 1969) have indicated that the student teaching experience is a powerful one for changing attitudes. This may be due to the strong modeling effect that the classroom teacher has on the student teacher. It also may be due to a confrontation with the real problems in dealing with a handicapped child in the classroom. Prior to the student teaching experience, the

attitudes of the student teachers had been shaped by didactic instruction in college classrooms. Perhaps the expression of the very positive att on the first administration of the attitude survey wa ore reflective of their idealism whereas the expression of their later attitudes was based on the practical knowledge obtained by working with mainstreamed handicapped children during the course of this study. Thus it is possible that their attitudes changed toward more realistic ones with the field experience.

Research Recommendations

An important contribution of this research is that it might serve as a model for applied research using student teachers and teachers in training to implement a social skills training intervention in a school setting. Although a study of this nature presents many challenges to the researcher, it also provides the opportunity to investigate the process of effecting change in a way most useful to the investigator who wants to know what will work in the field and to the practitioner, who will eventually apply the findings in the field.

Future research in this area might benefit from more child subjects whose social problems were more carefully observed and described individually. Such a procedure would provide more qualicitive data on individual children involved so that the match between the subject and the

particular intervention technique could be examined.

A more thorough student teacher training program which began before the field placement and involved experience with children, not just role play situations, would also be beneficial. Student teacher coaches could be compared with experienced teacher coaches or university coaches to assess differences in the quality of the implementation of the intervention. Carefully observed and documented intervention sessions and more sophisticated and refined observational measures used in more controlled observational conditions would provide a better opportunity to measure changes observed by teachers.

In order to study change in teachers' and student teachers' attitudes toward mainstreaming, and to affect change in those attitudes, a stronger intervention seems necessary. Perhaps more training than is presently provided in helping teachers and student teachers to deal with social and academic problems involved in mainstreaming handicapped children into regular classrooms, along with appropriate support services would prove effective. Intervention must include classroom teachers as well as student teachers, as classroom teachers are strong models for student teacher attitudes.

## Educational Implications

From the process and results of this research a number of recommendations to trainers of teachers can be extended.

Teachers and student teachers involved in this study clearly expressed their interest in having social skills training be a part of their preservice training. On a feedback questionnaire, 87% of teachers and student teachers reported that they felt that social skills training was important for teachers. Such training could involve providing teachers with observational and diagnostic tools for assessing social needs, and a variety of methodologies from which to choose appropriate interventions. Furthermore, because classroom teachers are most powerful models, careful attention should be paid by teacher education institutions to the attitudes and skills of the teachers with whom student teachers are placed.

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