

Running Head: PEER TUTOR AND POSITIVE INTERACTION

**The Effects of Peer-Tutoring Intervention on Increasing Positive Social Interaction
of Students With Mental Retardation**

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Abstract

This study was designed to investigate the effect of a same-age peer tutoring procedure on the social interaction of 3 students with mental retardation. A multiple baseline design across subjects was employed to measure the effect of peer tutoring procedure on positive social interaction. Peers were selected from a group of students who participated in a cross-age tutoring program. The study took place during recess time where all students participated in 30 minutes of unrestricted free-time activities. Results revealed that the peer tutoring program increased the frequency of positive social behavior of individuals with mental retardation. Results provided convincing evidence that the intervention was responsible for the improvement of the subjects positive social interaction.

The recent shift in special education services from an emphasis on safety and vocational skills development to an emphasis on daily living skills and involvement in community activity has increased attention upon the importance of social support for individuals with disabilities. In the process of giving individuals with disabilities the opportunity to experience and achieve societal inclusion, it has become clear that there is a need to understand how such individuals perceive their social world and the required social behaviors (Newton, 1994).

Research regarding the social world, in particular, the social interactions and relationships of individuals with disabilities has been limited. However, Holy and Serafica (1988) examined the social interaction of students with disabilities and found that they were more rejected and less accepted by peers in comparison to their nondisabled peers. They theorized that this rejection could result from the academic difficulties and the special education they receive which may lead them to perceive of themselves as different from others and increase their sense of failure.

Researchers have examined the nature of individuals with disabilities' relationships with their peers to address the effect of these relationships on individuals' social lives. Farmer and Farmer (1996) indicated that an individual's sociometric status is associated with specific social behavior and social cognition which can influence the individual's level of peer acceptance. For example, disabled students with disruptive behaviors are more likely to be socially isolated from both disabled and nondisabled peers, while those who exhibit cooperative behaviors are more likely to be accepted by disabled and nondisabled peers. The authors noted that individuals with disabilities experience fewer opportunities to develop friendships with nondisabled peers, which in

turn, increases their social isolation and negatively affects their involvement in the larger (nondisabled) community.

Stoneman, Brody, and Davis (1988) found that the children with disabilities in their study played with others less frequently, had fewer friends, and overall, participated in fewer activities than their non disabled peers. The authors attributed this to a lack of social skills on the part of students with disabilities, which made it difficult for those students to take advantage of opportunities to socialize with nondisabled students when they occurred.

Peer contact is an important issue facing classroom teachers and researchers. How can they get individuals with mild Disabilities (MD) successfully involved in academic pursuits and social activities with other nondisabled students. One method that can provide direct, individualized instruction to individuals with mild disabilities (MD) in regular classrooms, enhance self-esteem, and increase social interaction between individuals with and without MD is peer-tutoring (Kamps, Barbetta, Leonard, & Delquadri, 1994).

Peer tutoring is a strategy that has proven to be effective in enhancing the academic achievement and social interaction of individuals with and without disabilities. It requires a peer who can be directed to use variety of skills to increase the target behaviors. This procedure has become increasingly popular in recent years because it is easy to implement and can address both the academic and the social needs of low-achieving students with disabilities (Kohler, Greenwood, 1990)

While most of the studies of peer-tutors have focused on improving academic achievement, a few have targeted social skills that affect the social interaction of individuals with MD. According to Odom, Chandler, Oostrosky, McDonnell, & Reaney (1992), peers may be more effective in changing other students behaviors. This may be a results of the fact that peers participate in more activities with each other directly than they do individually and directly with teachers.

Studies which give more attention to academic performance focus primarily on improving spelling and math performance. For example, in a study conducted by Kamps, Barbetta, Leonard, and Delquadri (1994), a multiple baseline design across subjects was implemented to examine the effects of classwide peer tutoring (CWPT) on the reading skills of 3 high-functioning students with autism. Results indicated a positive effect of CWPT on the children's performance. The improvement was noted in students' reading abilities, as indicated by increases in the number of correct responses to reading comprehension questions. The authors pointed out that the teachers involved agreed that the CWPT program was easily implemented, that the students benefited both academically and socially, and that they enjoyed earning tutoring points.

Kohler and Greenwood (1990) studied the effect of peers on the spelling achievement of students with mental retardation and whether students in the tutor role delivered untrained forms of approval, prompting or assistance for the academic responding of their tutees. The study took place in an elementary school in Kansas City. Participants were 22 mentally retarded students who enrolled in a split grade-level classroom. The study used direct observation and weekly spelling tests to measure

Students' progress. Two observers were employed and trained to a system that measures core tutoring behavior and collateral (supportive) behaviors. A multiple baseline and a reversal design were implemented. Results revealed that students who participated in this experiment improved their spelling ability. Also, they were positively influenced by some tutors' behaviors that were not directly taught as components of the tutoring program.

Maheady, Sacca, and Harper (1988) conducted a study of 14 students with MD and 36 students without disabilities. CWPT was introduced along with assigned reading and homework twice per week (30 minutes each). Results indicated that the implementation of CWPT increased the weekly test scores for both groups. After the intervention a larger percentage of students earned A's while the percentage receiving failing grades decreased. The study provides evidence that it is possible to obtain significant results from peer tutoring even without major content modification or individualization of instruction.

On the other hand, studies which have concentrated on improving social skills and relationships have recommended that social interaction become the central focus of any early intervention program for students with MD. For example, peer initiation was one strategy used to improve the social interaction of students with disabilities in a study by Odom, Chandler, Ostrosky, McConnell, & Reaney (1992). The study was designed to measure the effects of peer initiation on the social interaction of 6 preschool students with MD. The authors employed a systematic fading procedure in which teachers provided visual feedback to peers in regards to the social interaction with targeted students. In this

study, teachers taught peers to provide verbal prompts, and introduced a visual feedback system to give peers a means of monitoring tutees' level of social interaction as prompts were faded. Results indicated that social interaction increased or remained above the baseline level for all students. It was also noted in the study that whenever peer training and teacher prompts were provided, the social interaction of students with MD increased substantially.

However, despite the fact that having a strong social support network can improve the life quality of individuals with disabilities, by enhancing self-awareness, self-esteem and emotional functioning, interaction with others, especially nonretarded persons, can bring rejection and other negative consequences. Therefore, in order to better understand the social world of individuals with disabilities, it is important to assess their level of social skills by observing rates of specific social behaviors in natural settings rather than only collecting information regarding their sociometric status. It is also important to examine how peer tutoring programs may affect this behavior.

Observation of social interaction not only can provide a wide picture of an individual's social network, but also can help to predict an individual's ability to integrate into the community and to participate in school activities. Therefore, this study was designated to evaluate the social interaction changes that occur when using peer tutoring program and to evaluate this programs effectiveness in improving the positive social interaction during the recess.

Method

Subject

Participants included three male students with mental disabilities (John, Larry, and Tom) enrolled in a special education classroom in a suburban elementary school in Maryland. The three subjects ranged in age from 9-11 years and met the state of Maryland's criteria for placement in a special education class. Specifically, they were at least two standard deviations below the mean on an intelligence test, as well as being limited in two or more adaptive behavior skills. Subjects were selected based upon: a) teacher concern regarding social interaction, b) aggressive behavior and low rate of positive behavior, and c) students' willingness to participate in the study.

John (African-American) was 9 years old, had an IQ score of 70 and performed academically below third-grade level. He demonstrated appropriate language skills in that he used complete sentences. John's behavior was volatile; for example, he tended to scream at peers during play. Larry (White-American) was 10 years old with an IQ score of 66. He spent part of his day in the special education classroom and the other part in general education with nondisabled students. According to his teacher, Larry preferred to stay alone and showed no sign of response to peers' initiations.

Finally, Tom (White-American) was 11 years old and had an IQ score of 63. He possessed limited speech and responded to simple commands of the teacher. He preferred to play independently and had difficulty initiating a conversation with others. None of the three subjects had any physical problems or disabilities, and none of them were taking any type of medication.

Setting

Since the opportunities for social interaction in the classroom are limited, the peer tutoring model was implemented during recess. Recess took place outdoors on the school playground when the weather permitted. The playground consisted of a grassy area and a basketball court. All play was unrestricted, therefore, subjects were free to choose what they wanted to do. On rainy days, recess was held in the school gymnasium. All recess sessions observed during this study took place on the school playground.

Tutor Training

Three peer tutors were selected for this study from a group of elementary students who participated in a cross-age tutoring program. The three tutors were chosen based upon positive teacher ratings and willingness to work with students with mental retardation. All three tutors had to enroll in a training session for five days prior to the intervention. They were required to learn a combination of modeling and role-playing techniques. Also, they were instructed to: 1) encourage tutees to take part in activities with other children during recess time, 2) remind them to act positively and to interact with other students, and 3) reward them with points when they showed positive behaviors, and, 4) model positive social behavior such as having a friendly conversation with others.

Baseline

A multiple baseline design across subjects was used. In order to demonstrate an experimental control in the multiple baseline design across subjects, the investigator measured the frequency of the targeted behaviors emitted by each subject under the baseline condition to establish a stable trend and level for each. It is important to note that the investigator introduced the intervention to the first subject, while continuing to monitor the targeted behaviors emitted by other subjects under baseline conditions. The same procedures were applied to the other subjects to obtain stability of trend and level.

Data collection took place during recess via videotaping. The ultimate goal was to determine rates of the positive social behavior demonstrated by the subjects. The three subjects were monitored to obtain the frequency rates of the following specific positive social behaviors: 1) participation in activities with others, 2) attempts to initiate conversations, and 3) verbal responses to others. A coding system was designed to define each behavior. Behaviors were defined operationally in the coding system to aid in the analysis of videotaping. For example, initiating a conversation would exclude negative aspects such as starting conflict or whining.

In order to obtain the percentage of positive social interaction of the subjects, two coders were assigned to view the videotapes and count the number of times that each of the 3 social behaviors of interest were exhibited by each subject during each recess period. This number was then divided by the number of times each of the 3 same behaviors was exhibited during the same time period by a nondisabled student. The two coders initially watched the same videotapes separately and calculated the frequency of the three positive behaviors. This was done until an acceptable rate of inter-rater

reliability was established. Coding revealed that positive social interaction for these individuals with MD occurred very infrequently prior to intervention. The percentages for each of the three subjects John, Larry, and Tom, based on the agreement of the two coders was respectively, 30%, 22%, and 25%.

The first subject (John) was videotaped for three consecutive days, Monday, June 8 through Wednesday, June 10, prior to the intervention. John's ability to initiate a conversation, his verbal responses to others, and his participation in activities with other children were monitored to provide baseline data of positive social interaction. The percentage of his positive social interaction compared to nondisabled peers during the baseline over the three days was 30%, 27%, and 33%, respectively. Intervention was introduced after subject stability of trend and level was obtained under the baseline condition.

After criterion-level performance was achieved with the first subject, the intervention was implemented with the second subject (Larry) who went through the same procedures with an extension of baseline time from three to five days. Baseline data were collected for Larry from Monday, June 8 through Friday June 12. The average percentage of his overall positive social interaction was 27%. Tom had more time in baseline data collecting than the first two subjects. Baseline data were collected from Monday, June 8 through Wednesday, June 17 (excluding Saturday and Sunday, June 13 and 14), for a total of 10 days. Intervention was implemented with this subject after obtaining stability in trend and level.

Intervention

On the first day of intervention, John's tutor was instructed to behave appropriately during recess and to remind John to follow the rules. The tutor was also instructed to initiate conversations with John and to encourage him to respond verbally. The purpose of this was to begin establishing a positive social relationship which could serve as a model for the child in building other relationships. The tutor encouraged John to become involved in activities with other children and to call peers by their names. (i.e., "Give me the ball, Don," "Let me play with you, Sam," "Come with me Tony.") John was rewarded every time he exhibited one of the three positive behaviors. He started every recess with 3 points and gained two points more with every positive social interaction. John was told that at the end of every recess, his total points could be exchanged for concrete rewards such as stickers, candy, and various toys and games.

Intervention was subsequently implemented with Larry using the same procedures, except that he started on the sixth day, which was the following Monday, June 15, while Tom received the treatment beginning on Thursday, June 18. Each intervention was introduced to the new subject after criterion-level responding was exhibited by the preceding subject.

Results

Interobserver reliability

Interobserver reliability was achieved by having two coders simultaneously but independently observe the videotapes and record the positive behavior of tutees' for 10-minutes in each recess (one time each day). Agreement was defined as both coders recording the appearance of the same category of positive social interaction in the same interval. Agreement was collected for 33% of the total recess every day (30 minutes each). The percentage of the agreement was calculated by dividing the smaller number of positive interaction obtained by one coder by the larger number obtained by the other coder, and then multiplying by 100. The percentage of reliability inter-rates obtained in this study was 93%.

Intervention

Figure 1 shows the percentage of positive interaction presented by the subjects. The multiple baselines across subjects demonstrated the effectiveness of the peer tutoring procedure for each subject. When peer tutors, who were trained to encourage the subjects to involve themselves in activities with others and to remind them to act positively with others, participated in the experiment, significant improvement in the subject's rates of positive social interaction occurred. For example, John earned 47 points during the intervention because of the positive social interaction he demonstrated, and lost only 4 out of 27 points for negative interaction. Also Larry earned 44 points and lost 3 points, while Tom earned 38 and lost 7 points.

During baseline condition the percentage of positive social interactions for the three targeted subjects ranged from 22% to 30%, while this percentage increased during the intervention condition to range from 60% to 80%. Results provided convincing evidence that the intervention was responsible for the improvement of the positive social interaction.

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