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Peer tutoring is not a new concept and there are a number of excellent reviews of research on the topic (Ehly & Larsen, 1980; Strain, 1981). However, there is little or no literature that directly relates nonhandicapped peer tutoring to the integration of severely behaviorally disordered students into regular schools. It is important that this void in the literature be corrected since increasing numbers of severely behaviorally disordered students are being integrated into regular neighborhood public schools. Many of these students require individual help with a wide array of rather ordinary behaviors such as staying on tasks, finding their way down the hallway, eating lunch in a school cafeteria, and playing on the playground with other children. The special education teacher alone may not be able to provide all the assistance needed. Nonhandicapped students represent one possible source of help.

The notion of increasing the involvement of nonhandicapped students in tutoring severely behaviorally disordered students is particularly appealing since recent research has shown that many nonhandicapped students want to help their handicapped peers (Kennedy & Thurman, 1982); Stainback & Stainback, 1982a), and nonhandicapped students (McHale & Simeonsson, 1980) and severely behaviorally disordered students (Lancioni, 1982) can benefit. The purpose of this paper is to (a) review and summarize the research on nonhandicapped peer tutoring of severely behaviorally disordered students, (b) discuss practical considerations in organizing tutoring programs, and (c) postulate future research needs.

REVIEW OF RESEARCH

The following research review on nonhandicapped students tutoring severely behaviorally disordered students is divided into two sections (a) influences on severely behaviorally disordered students, and (b) influences on nonhandicapped students. The review is not intended to be exhaustive, but it is intended to be representative of the tutoring research with severely behaviorally disordered students.

McHale, Olley, Marcus, and Simeonsson (1981) employed nonhandicapped peer tutoring for 5 weeks to increase the on-task behaviors of five autistic students. Serving as tutors were 25 nonhandicapped students, 5 per week. Each week each of the 5 nonhandicapped students was assigned one of the five autistic students to tutor on preacademic activities designated by the special class teacher. (The same autistic students participated in the tutoring sessions each week, whereas the nonhandicapped students participated only during the 1 week that they tutored). Direct observation of the on-task behaviors of the autistic students occurred during weeks 2 and 5 of the tutoring program. The autistic students displayed a significant increase in on-task behavior. Decreases in severe maladaptive behaviors (i.e., tantrums, self-injurious behavior, active avoidance of others) were noted also. McHale and her associates (1981) concluded that "this approach appears to be a viable procedure for fostering adaptive behaviors in severely handicapped children" (p. 264).

Other researchers have studied ways of improving autistic students' social interactional behaviors through peer tutoring. Ragland, Kerr, and Strain (1978) used a nonhandicapped peer to modify the social behavior of three elementary-age autistic students. The peer was trained to make social bids to the autistic students for the purpose of improving their social behaviors. More specifically, the peer was instructed to give play toys to the severely handicapped students and to make statements such as "Let's play." As a result of this intervention, the autistic students' *self-initiated* social behaviors increased dramatically. Unfortunately, an analysis of the data indicated that there was no maintenance of any of the autistic students' increased social behaviors when the intervention procedure was removed.

In another study by Strain, Kerr, and Ragland (1979), a tutor was trained in the appropriate use of specific prompting statements such as "Roll the ball to . . ." and verbal reinforcers such as "Good . . " to teach two low functioning elementary-age autistic students to emit positive social play behaviors toward each other. Peer tutoring resulted in a significant acceleration of the positive social behaviors of the autistic students toward each other. However, the increased social behavior did not maintain after tutoring was discontinued, nor did the behaviors generalize outside of the direct intervention setting. It should be noted that in the studies reviewed above there was no mention of any specific procedures that were implemented to promote generalization and/or maintenance of the newly acquired behaviors.

Finally, Lancioni (1982) employed nonhandicapped peer tutors to teach four severely withdrawn retarded students to exhibit a variety of social responses, such as cooperative play and positive social verbalizations. The severely withdrawn students acquired the social responses. Generalization of the newly acquired social responses occurred and maintained across peers and settings. In addition, there was evidence of response generalization, i.e., the students displayed an increase in social behaviors not specifically trained.

It should be noted that Lancioni (1982) employed specific procedures to promote generalization and maintenance. To facilitate generalization across peers and responses, he employed several peer trainers and had

them train and reinforce a variety of different social behaviors. This was done so that the withdrawn st dents could experience displaying a variety of social behaviors across a variety of different peers. Generalization across settings (as well as maintenance) was facilitated by a gradual weaning procedure, which was employed to move the newly-acquired social behaviors from a continuous to an intermittent schedule of reinforcement and from edible to social reinforcers. Lancioni (1982) concluded:

> The findings that the tutors were highly and consistently reliable in conducting virtually alone the entire intervention program underlines the potential of normal children as coadjutors in the rehabilitation of severely withdrawn retarded peers and reemphasizes the conclusions of previous studies on peer tutoring. (p. 38)

Influences on Nonhandicapped Students

McHale (1981) and McHale and Simmeonsson (1980) investigated the influence of a 5-week unstructured tutoring experience on the attitudes and interactions of nonhandicapped elemetary-age students toward their autistic peers. They also investigated the nonhandicapped students' understanding of autism as a result of the tutoring experience. These investigators organized 30 nonhandicapped students into five small groups of 6 students and each group was paired for a week with six autistic peers in a play session. The same autistic students participated in the tutoring sessions each week, whereas the nonhandicapped students participated only during the 1 week that they tutored. The nonhandicapped students were instructed that it was their job to teach the autistic students how to play because they did not know how to play. Data were collected on the nonhandicapped students' frequency of interactions with, understandings of, and attitudes toward the autistic students.

The results indicated that during the tutoring experience, nonhandicapped students increased their frequency of positive interaction with the autistic students and their understanding of autism (i.e., correct responses to questions based on current conceptions of autism). In regard to attitudes, it was found that the students held positive attitudes toward the autistic students both before and after the tutoring experience. (Attitudes were measured by asking the nonhandicapped students questions such as "Are you willing to be with autistic children in the cafeteria?") The data from this investigation supports the use of tutoring as a way of increasing nonhandicapped students' understandings of and interactions with autistic students.

Conclusion

Based on the available research evidence, it appears that nonhandicapped students can help severely behaviorally disordered students learn new behaviors. However, severely behaviorally disordered students apparently do not spontaneously generalize the behaviors they learn in tutoring programs to other settings and people. They also do not spontaneously maintain their behaviors after tutoring ceases. Only when specific procedures to promote generalization and maintenance are incorporated into tutoring does generalization and maintenance occur.

One very positive finding is that nonhandicapped students can benefit from tutoring severely behaviorally disordered students. For instance, it appears that their understanding of handicapping conditions can improve as a result of being involved in tutoring programs with severely behaviorally disordered students (McHale, et al., 1981).

PRACTICAL CONSIDERATIONS

The following discussion focuses on a few critical variables that should be considered when organizing nonhandicapped peer tutoring programs.

Determining Tasks

A primary consideration in any training approach is the determination of the desirable behaviors to be fostered. Both teachers and nonhandicapped peers need to be able to evaluate and choose those behaviors that are age-appropriate and functional. Behaviors that are age-appropriate need to be determined to foster the social acceptability of severely behaviorally disordered students in natural environments. Behaviors that are functional should be selected in order to enhance the severely behaviorally disordered student's chances of learning to live in natural community environments. Logically, if the behaviors taught through peer intervention procedures are not age-appropriate and functional, the potential benefits to severely behaviorally disturbed students of nonhandicapped peer tutoring will be negated.

It should be noted that while many professionals in the past have felt that it was not possible, due to mental age functioning and/or emotional difficulties, for some severely handicapped students to work on age-appropriate activities, this belief is changing (Brown, Branston, Hamre-Nietupski, Pumpian, Certo, & Gruenewald, 1979). The reader interested in more detailed information is referred to the cited article.

Training Nonhandicapped Students

Nonhandicapped peer tutoring has been found to be effective more often when the nonhandicapped students were specifically trained in instructional techniques (Lancioni, 1982). Nonhandicapped students have been trained to task analyze behaviors, provide prompts, apply consequences, and model behaviors for handicapped students. Approaches used successfully to teach nonhandicapped peers these skills include direct instruction, role playing, and reinforcement of the desired behavior. As an example, Strain et al. (1979) used brief training sessions in which specific instructions for tutoring were provided. Role playing was also utilized in which the teacher, assuming the role of a severely behaviorally disordered student, responded intermittently to the tutoring attempts of the nonhandicapped students. The teacher did not respond every time since severely behaviorally disordered students are not likely to do so. In this way, the teacher prepared the nonhandicapped students for potential nonresponding.

When training nonhandicapped students, it is important that the training be realistic. As Simpson (1980) noted:

> The students must be made aware that their contacts, regardless of

how well planned and executed, might be rebuffed or otherwise negatively consequated. Because the responses are unpredictable and varied, students must be instilled with realistic expectations and alternative responses. (p. 8)

Determining the Impact

Evaluation is essential when implementing nonhandicapped peer tutoring since there are potential problems that may occur. For example, as noted above, some severely behaviorally disordered students may respond infrequently to the tutoring attempts of their nonhandicapped peers, thus thwarting the enthusiasm of the nonhandicapped peers to continue. If such low responding is detected, teacher-administered reinforcement procedures may be needed to keep the nonhandicapped students tutoring until [illegible] increased. In addition, some nonhandicapped students may not be particularly suited for tutoring because of a poor attitude, impatience and/or the inability to apply appropriate instructional techniques. Without continuous and systematic evaluation, such problem areas could go undetected and uncorrected.

FUTURE RESEARCH NEEDS

Nonhandicapped peer tutoring of severely behaviorally disordered students has begun to receive attention in the research literature. However, further study of this intervention strategy is needed. Two areas of needed research are the investigation of (a) the generalization and maintenance of helping behaviors by the nonhandicapped peer tutor, and (b) the effectiveness of the nonhandicapped peer tutoring strategy with secondary age students.

When specific techniques have been incorporated into the tutoring activities to foster generalization and maintenance, new behaviors learned by the severely handicapped students through peer tutoring have generalized and maintained beyond the tutoring setting (Lancioni, 1982). While more research beyond this one study by Lancioni is needed on the generalization of new behaviors learned in tutoring by severely handicapped students, researchers in the future should also focus some attention on the generalization and maintenance of nonhandicapped students' helping behaviors. To date, the generalization of helping behaviors by nonhandicapped students has not been studied. A critical question is: Will nonhandicapped students who are involved in an adult organized and directed tutoring program display helping behaviors toward handicapped students at other times? In other words, will they learn as a result of tutoring experiences to more often help their handicapped peers when not under the direct supervision of adults?

One benefit sometimes cited for nonhandicapped peer tutoring is that the nonhandicapped students learn *how* to help their handicapped peers (Stainback and Stainback, 1981, 1982b). However, if this helping behavior is not exhibited outside of the tutoring setting or with other handicapped students, its usefulness as an ongoing skill is questionable. Thus, investigation of the generalizability and maintenance of the helping behaviors of

nonhandicapped students is needed. Also, research is needed to determine procedures that could be used to foster generalization and maintenance in those cases where generalization and/or maintenance does not spontaneously occur.

A caution should be noted here. While nonhandicapped students should learn to help severely handicapped students when and where appropriate, a potential problem could arise wherein nonhandicapped students learn to provide too much help (or become overprotective) with regard to severely handicapped students. Systematic and reliable data collection procedures can aid in the detection of such potential problems.

The second area of needed research involves peer tutoring with the secondary-age students. Numerous investigations of peer tutoring of the handicapped by the nonhandicapped students have been conducted with elementary and preschool age students. However, there has been little corresponding research conducted with secondary-age students. Thus, there is a critical need for more research with older students. It could be precarious to generalize the findings of research with young students to older students.

SUMMARY

Increasing numbers of severely behaviorally disordered students are being integrated into regular neighborhood public schools. These students will require a great deal of individual attention and assistance. Many of them will need help in entering and departing the school from the bus loading and unloading zones, finding their way to the special education classroom, playing with their nonhandicapped and handicapped peers on the playground, and learning simple educational tasks. Nonhandicapped students have expressed a willingness to help (Kennedy & Thurman, 1982; Stainback & Stainback, 1982a) and have been found to be effective in providing assistance (Lancioni, 1982). Thus, nonhandicapped students represent a readily available source of manpower to assist in helping severely behaviorally disordered students function in regular schools. In this paper, the authors have reviewed the research on the feasibility of nonhandicapped peer tutoring and have advocated that increased attention be given to the use of nonhandicapped peers as tutors for the severely behaviorally disordered students.

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