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ABSTRACT

This study applied computer-assisted instruction (CAI) techniques to improve peer acceptance among 92 mainstreamed students with mild disabilities from 10 to 13 years of age. Participants in the treatment group received their generalized curriculum program (including mathematics, language arts, reading, health, social studies, and science) supplemented with CAI consisting of drill/practice and games for the reinforcement of reading and mathematics. This instruction was offered for 20 minutes daily for 5 weeks. Control group students received the same curriculum without CAI. Experimental group subjects reported positive self-esteem effects from CAI use when asked to complete an open-ended survey. Each participating student and 760 of their classmates were provided with a social acceptance scale and instructed to rate all members of the class for an overall peer acceptance score. Results found no significant difference between peer acceptance ratings of experimental and control group subjects. Suggestions for further research on interventions to improve peer acceptance among mainstreamed students with disabilities are provided, as is speculation as to why this particular CAI intervention failed to significantly improve peer acceptance. (Contains 19 references.) (PB)

USING CAI TO ENHANCE THE PEER ACCEPTANCE OF MAINSTREAMED STUDENTS WITH MILD DISABILITIES

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Unpopular; unable to have a good time; ignored and rejected by their nonhandicapped peers is the way some researchers (Bryan 1974a, 1974b) have described the peer status of students with mild disabilities assigned to regular classrooms. Johnson and Johnson (1978) asserted:

> It is when handicapped students are liked, accepted, and chosen as friends that mainstreaming becomes a positive influence on the lives of both handicapped and normal progress students (p. 153).

The peer relations of children, including those with mild disabilities have remained an area of intrigue for educators and psychologists for most of this century. In addition, peer relations have been assessed to obtain data on the friendship patterns of children (Culliver 1988) as well as to acquire knowledge of individual children's social status among their peers. Social status is increasingly being viewed as an integral part of understanding each child's social adjustment, which is paramount for academic and socioemotional growth.

When President Gerald R. Ford signed into legislation the Education For all Handicapped Children Act--PL 94-142, it was his hope that students with mild disabilities mainstreamed into regular classrooms would, because of exposure to and closer proximity with non-disabled peers, experience a higher degree of social acceptance. Almost two decades, however, have elapsed and mainstreamed students with mild disabilities are no better accepted

by their non-disabled peers than they were prior to the passage of the Education for All Handicapped Children Act in 1975.

Comprising about 75% of those students with disabilities (Lewis & Doorlag, 1983), students with mild disabilities occupy three categories: mild learning disabilities, mild mental retardation, and mild emotional disturbance (Hallahan & Kauffman, 1977). In regular classroom, they find it difficult to interpret the verbal and nonverbal cues of their nondisabled peers (Bryan, 1978). Consequently, they emit and receive statements of hostility and rejection, and even use offensive language when communicating with their nondisabled or typical peers.

When Cartledge, Frew and Zaharias (1985), studied the peer relationships of mainstreamed students with mild disabilities and their nondisabled peers, the results showed that while students with learning disabilities would be benevolent to nondisabled peers, nondisabled students still preferred social interaction with nondisabled classmates. In addition, nondisabled classmates perceived the students with learning disabilities to be slow workers in constant need of the teacher's attention.

In secondary settings, peer acceptance of mainstreamed students with mild disabilities has been studied. Perlmutter and his associates (1983), for example, used a sociometric questionnaire and sociometric evaluation instrument to assess peer acceptance of mainstreamed students with learning disabilities. Results indicated that students with learning disabilities were generally less well liked than their nondisabled classmates.

Moreover, the researchers maintained that students with learning disabilities were rated as being aggressive, being disruptive, and having the ability to sway others. These results parallel those of Johnson (1950) who first investigated the peer acceptance of mildly handicapped students in regular classrooms and found educable mentally retarded students to be significantly more rejected than their nonhandicapped peers.

Since there is evidence to show that mainstreamed students with mild disabilities are not that popular with their nondisabled peers, educators cannot assume that the wave of some magic wand will make the problem disappear. Specific strategies must be devised to assist these students to become better accepted by their nondisabled peers.

Computer-Assisted Instruction (CAI) and Students With Mild Disabilities

Computer-assisted instruction (CAI) is an instructional strategy that seems to have merit for mainstreamed students with mild disabilities. Through CAI these students can receive direct instruction and is especially helpful for ameliorating problems of a social/emotional nature (Cartwright, Cartwright, & Ward, 1984; Furst, 1983; Huntgate, 1982; Schiffman, Tobin & Buchanan, 1982). Upon completion of their study conducted at the Johns Hopkins Training Center for Learning Disabled Students involving CAI, Schiffman concluded that some of the least motivated students became increasingly motivated and that students gained a higher sense of self-esteem and a greater degree of self-confidence.

Watkins and Webb (1981) conducted a study to assess the impact of CAI on 58 students with learning disabilities assigned to special education classrooms. Results of this study showed that students taught mathematics through CAI achieved significantly higher than the students taught mathematics through the traditional method. DeBonis, Joseph and Prezioso (1982) found that CAI was capable of producing significant skill acquisition with students with disabilities, mental retardation, and giftedness. After exposure to the CAI program, these students improved their communication skills with peers, improved their interactions with teachers, and increased their academic achievement.

While CAI has been shown to be a viable tool for assisting students with mild disabilities with academic achievement and, on a limited basis, improving social-emotional problems, no studies could be found suggesting CAI to be an effective strategy for altering peer acceptance of mainstreamed students with mild disabilities. The present study was conducted in the Tuscaloosa County, Alabama School System to examine the effects of a CAI program on peer acceptance. Although the study was structured to examine the use of CAI on teacher acceptance, self-concept, and peer acceptance, only the results of peer acceptance and CAI will be reported. Four questions were examined in this study: (a) would there be a statistically significant difference between students with mild disabilities who were mainstreamed and receiving CAI and those students with mild disabilities who were mainstreamed not receiving CAI for peer acceptance; (b) would there be a

statistically significant difference between mainstreamed students with mild disabilities classified as emotionally disturbed, and mildly mentally retarded receiving CAI and those mainstreamed students with mild disabilities receiving no CAI for peer acceptance; (c) would there be a statistically significant difference in pre- and post-test scores of mainstreamed students with disabilities receiving CAI and mainstreamed students with disabilities receiving no CAI for peer acceptance; and (d) would there be a statistically significant interaction between the experimental and control groups (CAI or non-CAI), or between the students classified as learning disabled, emotionally disturbed, and mildly mentally retarded on pre- and post-test scores for peer acceptance.

Methodology Sample Selection

Regular fifth-grade classroom units that included students with mild disabilities of the Tuscaloosa County School System were used for this study. Subjects for the study included 92 mainstreamed students with mild disabilities ranging in age from 10 to 13 years who were labeled learning disabled, emotionally and mildly mentally retarded. These students were selected from 27 classroom units with a total of 760 students. Of the 92 students particpating in the study, 54 were white, and 38 were black. In addition, the number of boys (n-66) exceeded the number of girls (n-26).

Research Design

Through random assignment, using the SPEC 50 random number generator from the Behavioral Science Statistics Program Library

(Barker & Barker, 1977), experimental and control groups were selected. The participants of the experimental group received their generalized curriculum program (mathematics, language, arts, reading, health, social studies, and science) supplemented with CAI consisting of drill/practice and games for the reinforcement of reading and mathematics. This instruction was offered for 20 minutes daily for a duration of five weeks. The control group participants received their generalized curriculum program without CAI.

The statistical design used in this study was a Lindquist Type III in a multivariate analysis of variance framework (Barker & Barker, 1984). This design incorporated two between-subjects components and one within-subjects component. The Wilks' lambda test criterion was used to test for statistical significance at a predetermined alpha level of .05. Following the decision strategy of Hummel and Sligo (1971), univariate analyses of variance were completed for significant multivariate F ratios. All significant univariate F ratios were followed by t-tests to determine group differences.

Peer Acceptance. A social acceptance scale (Lilly, 1971) was used to assess peer acceptance. The scale consists of four choices with ratings ranging from 0 to 3. The highest rating was "yes" with +3 points, followed by "yes" with +2 points, "yes" with +1 point, and "?" with 0 points.

Each of the 760 students, including the 92 students with mild disabilities was provided a copy of the social acceptance scale

with the names of all students in the designated classroom listed on the right side of the form and informed that they were going to play a game of "friendship." The students made their friendship selections as the instructions were read. Scores for each student were derived by summing the numbers representing positive choices. To control for varied enrollment figures, a class average score for each student was computed by dividing the total peer acceptance score for each student by the total number of participants.

Results

Upon examination of the overall MANOVA, no statistical significance was found for CAI and peer acceptance.

Conclusions

Although other researchers reported positive results of the use of CAI in a variety of settings, the results of this study fail to demonstrate this effectiveness. Nonetheless, a number of conditions beyond the control of the researcher may have accounted for the lack of significant findings. First, there were some variations in the physical arrangements for the CAI instructions. For instance, in some schools, the treatment--CAI--was provided in well designed computer laboratories, while in others, CAI occurred in a resource room with nonparticipating students present. Second, there was also a predominance of LD students which may, by the diverse nature of that classification, have introduced such a variety of student characteristics that the study was impacted negatively. Third, initially the teachers in the computer labs (Chapter 1) were reluctant to provide this instruction, although

they later relished the experience.

Experimental group participants were asked to respond to an open-ended questionnaire concerning their feelings/experiences about CAI. The most common responses to the question, "How did the computer help you?" were:

"Feel better inside"

"Better sense of humor"

"Peers showed more kindness"

"Feel more happy"

"Feel important"

"Get along better with parents"

The most frequent responses to the question, "What did you especially like about using the computer?" were:

"No teacher to yell and scream at you"

"Helped me make better grades in spelling"

"Computer was never in a hurry"

"Math Blaster game"

"Liked the computer teacher"

"Gave points for correct answers"

"Did not frighten me"

Research Recommendations Using CAI

Using the results of this study and the previous research, the following recommendations can be made.

1. Studies using CAI with mainstreamed students with mild disabilities to change peer acceptance should be explored further. Because of the lack of conclusive evidence of the efficacy of CAI in the development of both cognitive and affective behavior, additional research is needed.

2. Further studies should explore CAI with stratified samples of the various types of students with mild disabled students to avoid the predominance of one type.

3. Additional time for the use of CAI as an approach to the instruction and self-development of mildly handicapped students should be explored.

4. Other instruments measuring peer acceptance should be considered.

5. The study of CAI and peer acceptance should be conducted in a variety of other settings.

Intervention Efforts

Once it has been established that a child with mild disabilities is experiencing negative peer reactions, it is essential that appropriate interventions be adopted. However, when addressing the peer status of children with mild disabilities, one should not misconstrue the matter believing that peer status should not be based solely on high or low popularity, but rather those children whose behavior with their peers is characterized by social rejection, with limited opportunities to assist them in dealing with their feelings of anger, frustration, and isolation.

Along with continuous use of computer-assisted instruction, for children with mild disabilities for practical purposes, several strategies for improving a child's social acceptance are being recommended. These include coaching children directly, modeling, guided affective imagery, using peers as change agents, reinforcing prosocial behaviors, problem solving skills development, interpersonal communication skills development, and academic skills training.

Inadequate peer relationships of children in regular classrooms with mild disabilities should not be taken lightly. At a time when our nation is experiencing considerable problems of delinquency, educators should be even more aware of the correlation of social status competence with behavioral and cognitive difficulties. Moreover, the long-term poor prognosis of these students with regard to peer acceptance, should assure a high priority in our schools, necessary for promoting conditions which will facilitate positive peer relations of children in regular classrooms with mild disabilities.

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