ABA Literature Summary

e-newsletter

Topic : Teaching Tools for Children With Autism

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Special Learning

Using Social Stories

Social stories are stories (often accompanied by pictures or cartoons) that instruct a student on ways to behave in many different situations. Designed to help a person with autism manage daily events, they are structured to follow a real life script as follows: Introduce a neutral idea (I live with my mom and dad), bring in the event of interest (My mom is going to have a baby. It might be a brother or it might be a sister), instruct on the appropriate behavior for the event (When my new brother or sister is born, I won't need to worry because my mom and dad will still take care of me and love me just as much), finish with a positively reinforcing statement or situation (I can't wait to play with my new brother or sister!). These types of stories can be very effective at teaching students with autism and other disabilities about socially appropriate behavior. They seem to be especially effective for younger students, but older students benefit from social stories as well.

A. Using a Social Story to Teach Verbal Greetings

Individuals with autism typically have social deficits, such as difficulties initiating conversations and responding appropriately in social situations. An individual may have difficulty engaging in interaction in a variety of settings, such as in school with peers or at work with co-workers. Previous interventions have shown that the use of social stories have positively impacted the degree in which an individual interacts with others. Reichow and Sabornie (2009) examined the use of a social story intervention to increase the behavior of initiating greetings in an adolescent male with autism.

Methodology:

The participant for this ABAB withdrawal design with a comparison condition was a male, 11 years, 4 months old diagnosed with autism. He was in a fourth grade regular education classroom and occasionally interacted with his peers. The independent variable was the social story used to explain how to initiate greetings: when it is appropriate to do so and how to engage in appropriate greetings. The dependent variable was the amount of time the participant initiated greetings within a five-minute observation period.

Results/Outcomes:

During the intervention phase, the authors found that the participant increased the amount of initiated greetings during observation. Following the intervention, the comparison condition showed that, with a visual cue, the behavior was maintained. The author notes, however, that the impact of the intervention is questionable within a withdrawal design, with the possibility of initiating greetings being a learned behavior that cannot be readily returned to baseline. If, in fact, this is the case, use of the social story may not have increased the initiation of greetings. Future research should examine this fact, as well as the presentation of a visual cue with the absence of the social story, according to the authors.

B. Increasing Social Interactions With Social Stories

Social stories are widely used to train a variety of behaviors in many different settings. Scattone, Tingstrom, and Wilczynski (2006) studied the impact of personalized social stories on three male youth. The authors have previously identified that social stories have been shown to be effective in decreasing problem behaviors such as aggression and crying. For this study, they chose to use social stories to increase skills such as appropriate peer interaction.

Methodology:

A multiple baseline across participants design was chosen to demonstrate the effectiveness of social stories on decreasing problem behavior. The participants consisted of 3 males between the ages of 8 and 13 diagnosed with autism. None of the participants demonstrated appropriate peer interactions. The independent variable was the individualized social story completed for each participant. Each social story discussed appropriate ways to interact with peers during each participant's free time to test and to ensure the participants understood the social story each participant was administered comprehension questions. After each person correctly completed 100% of the comprehension questions, he/she was then required to read his/her story once per day prior to free time. The dependent variable was the data collected to track appropriate social interactions.

Results/Outcomes:

The authors' findings on the use of social stories to increase appropriate interactions with peers during free time showed a positive effect in two of the three participants. For two participants, reading a social story prior to free time increased social behaviors. One participant did not show an increase which, according to the authors, may have been due to the antisocial, inappropriate behavior of his peers. The authors suggest that further research should examine possible reasons why use of a social story was ineffective for one participant and whether a more simple variation of a story would produce appropriate peer interaction. Another point in which the authors make is the inability to control verbal prompting, which when combined with a social story may alter the effectiveness of the intervention. This could have been a threat to internal validity.

Finally, the authors suggested generalizing the use of social stories to additional populations.

C. Using Social Stories to Reduce Problem Behavior

Social stories can be modified to teach a wide variety of appropriate behaviors, in addition to decreasing unwanted, inappropriate behaviors. Graetz, Mastropieri, and Scruggs (2009) examined the use of social stories and their impact on a variety of socially inappropriate behaviors. The impact of the individualized social stories was significant and the opinions staff members had about the social stories were favorable.

Methodology:

A multiple baseline across participants design was used, in addition to a generalization and maintenance phase. Three participants were included within the study. All were adolescents between the ages of 12 and 15 and were diagnosed with moderate autism. All participants engaged in inappropriate social behavior. The independent variable was social stories that addressed appropriate examples of behavior for each participant at least twice a day at times that have appeared to present difficulty in baseline. Social stories were modified to show pictures of the participants engaging in appropriate behaviors. For the dependent variable, each participant engaged in a different target behavior. Target behaviors included falling to the floor, sucking on fingers, and using a high-pitched voice.

Results/Outcomes:

The authors found that the use of a social story was effective in the reduction of problem behavior. Additionally, a decrease in behavior following the intervention was maintained without the use of the social story. The study was not without limitations, however. The authors noted that the experimental phases may not have been long enough. Furthermore, they expressed concern with the small number of participants. Accordingly, they recommend that future research should extend the experimental phases and number of participants, as well as explore whether the participants achieved independence.

References

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Video Modeling and Video Prompting

Recognizing that modeling and imitation are effective methods for teaching people with disabilities, video modeling and video prompting have become popular teaching tools in the autism community. They have proven to be useful for teaching good modeling skills, providing a visual skill demonstration for those who learn best this way. Importantly, they break down tasks into workable steps so one can see what each step looks like. Below we survey some of the many studies that explore the efficacy of video modeling and prompting as effective teaching tools for many different types of skills and behaviors.

A. Using Video Prompting for Daily Living Skills

Sigafoos et al. (2005) analyzed the use of video modeling to teach individuals with developmental disabilities daily livings skills. The object of learning these skills was to increase the participants' independence and quality of life. To assess the impact of video modeling on behavior acquisition, they extended the research on video modeling and examined the impact that video prompting has on the acquisition of a daily living skill.

Methodology:

This delayed multiple-probe across subjects design involved 3 adult men with developmental disabilities. For the independent variable, each step of the task analysis was shown to the participants using a video prompt on a computer screen. For the dependent variable, data was collected using the task analysis developed for making microwave popcorn to assess whether or not the steps of the task were completed independently.

Results/Outcomes:

The authors found that 2 out of 3 participants independently followed the behavior chain to make popcorn and met the criteria of performing 100% of the steps independently in five or six consecutive sessions. Returning to baseline resulted in the continued demonstration of the skill for the 2 individuals who met the criterion. At follow-up, participants continued to perform at or above 80% of the behavior chain. As mentioned by Sigafoos, et al. (2005), it is unclear whether the use of video prompting had a greater effect on skill acquisition than direct care staff prompting procedures. Only 2 of the 3 participants met criterion, presenting a limitation to the findings. Future research should attempt to replicate the findings in additional populations across new settings. Finally, another limitation involved the use of verbal instructions within each segment of the video. Additional research should rule out this limitation.

B. Video Modeling Versus Video Prompting for Daily Living Skills

Cannella-Malone, Flemming, Chung, Wheeler, Basbagill, and Singh (2011) researched the impact of video modeling and video prompting on the acquisition of daily living skills. They recognized the importance of identifying the teaching method that leads to greater skill acquisition, specifically whether video modeling or video prompting results in the greatest increase of skills learned. The authors aimed to identify which teaching methodology resulted in a greater increase in acquiring daily living skills.

Methodology:

For this alternating treatments design within a multiple probe across participants design, 7 individuals with severe intellectual disabilities participated. For the independent variable for the intervention that utilized video prompting, the participants viewed one step at a time and following each individual step, until they completed the skill. If they did not complete the skill, the experimenter did it for them. For the intervention that utilized video modeling, the participants viewed the entire sequence of the task to be completed before beginning it themselves. No prompting was delivered if the participants incorrectly responded. Within the video prompting plus error correction phase, the participants viewed video segments and if responding incorrectly, were then required to view the segment for a second time. Additional intervention phases consisted of using video prompting following evidence that it was more effective than video modeling, and in vivo training was given to teach skills that were not acquired with the use of video modeling or video prompting. For the dependent variable, scores were given to each participant using task analyses created for each skill taught. The percentage of steps correct was calculated

Results/Outcomes:

Cannella-Malone, et al. (2011) found that video prompting resulted in a greater percentage of steps correctly performed for 2 daily living skills. The authors, however, noted not having adequate time to test for maintenance and suggested that future research should examine this. They further recommended that future research show video prompting methods from various perspectives. In addition, research should focus on video prompting to show individual steps and to test whether the addition of voice-over instructions are necessary for skill acquisition. Another area of research interest identified is the impact of portable devices on daily living skill acquisition.

C. Video Prompting in an Employment Setting

The autism community has identified a need for inexpensive, effective training tools to assist in job training. Van Laarhoven, Johnson, Van Laarhoven-Myers, Grider, and Grider (2009) studied the impact of a technology-based intervention on the acquisition of new job tasks. Within the study, a video training tool was used and shown to the participants via an iPod.

Methodology:

A 17-year-old male with a chromosomal disorder, 1p36 Deletion Syndrome, participated in this multiple probe design across tasks. The independent variable consisted of video prompts shown on an iPod for each task to be learned by the participant. Tasks included cleaning the bathroom and kennels, mopping the floor, and emptying the garbage. Each error made by the participant resulted in video feedback to correct the mistake, followed by physical or model controlling prompting if the error continued. The dependent variable was the percentage of independent correct responses, percentage of error correction prompts with video feedback, percentage of error correction prompts with video feedback plus controlling prompt, and percentage of prompts to use technology.

Results/Outcomes:

As shown by the authors, the iPod proved to be an effective training tool for an individual working in an animal shelter. Using an iPod for training in a variety of skills resulted in an increase in independent responding and a decrease in prompting. Further, the participant met criterion for each task quickly. It may be difficult to generalize the findings of the study because of the limited sample size. Since prompting was not utilized during baseline, one cannot compare it to the percentage of prompts required within the intervention phase. Future studies should compare the same prompting strategies within baseline and intervention phases. Moreover, generalization of these findings is necessary and should be replicated in additional populations such as those with developmental disabilities.

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Active Student Responding

Active student responding is a teaching tool that facilitates students responding in real time to questions, to make choices, or participate in other classroom activities rather than everyone waiting until one student gives a response. The responding usually consists of students holding up an answer card, a wipe-off whiteboard with their answer, or typing answers on a computer, all at the same time. This technique keeps students actively involved in the learning process and has shown to be a valuable tool for some students with disabilities, such as those with learning disabilities and autism.

A. Active Student Responding Coupled With Computer Assisted Instruction

Jerome and Barbetta (2005) looked at combining active student responding with computer assisted instruction. The authors studied these two learning strategies with participants with learning disabilities who were being taught social studies facts. They studied the benefits of oral active student responding versus clicking the response buttons on the computer instructions.

Methodology:

This alternating treatments design involved 5 students with learning disabilities in fifth grade; 2 females and 3 males. The independent variable was the computer assisted instruction together with active student responding interventions. The dependent variable was the social studies knowledge students were able to obtain and retain.

Results/Outcomes:

The authors found that students who learned using computer assisted instruction coupled with active student responding were able to retain more social studies facts and also maintained their knowledge. The authors suggested that parents try to incorporate active student responding when looking for teaching tools for their children. They further recommend that other studies look at more ways to enhance the efficacy of both active student responding and computer assisted instruction teaching methods.

B. Response Cards as an Intervention for Disruptive Behavior

Lambert, Cartledge, Heward, and Yo (2006) evaluated the effects of response cards on disruptive behavior in a fourth grade classroom setting. The authors chose this intervention because of the potential for peer involvement and because earlier studies have shown that response cards could be an effective tool for reducing out-of-seat and off-task behavior. The authors hoped to extend earlier studies about the effects of response cards on disruptive behavior and also to see what effects, if any, using response cards had on the students' academic performance.

Methodology:

This ABAB reversal design consisted of two general education fourth grade classrooms. Nine students from these classrooms were targeted for the intervention and data collection due to their academic performance and disruptive behavior. All students in the classes participated in the response card activities. The independent variable was the response cards used by the students. These consisted of small whiteboards with dry erase markers and a wipe to remove marks. Each student was given a board, marker, and wipes. The dependent variables were the disruptive behavior exhibited by the students, students' hand raising, students' academic response, correct responses to academic questions, and satisfaction of the teachers with the intervention.

Results/Outcomes:

The authors found that, when using the response cards, the targeted students' rates of responding became noticeably higher. Additionally, the students' rates of disruptive behavior were lowered to a manageable level. The response cards also allowed the students to answer more questions because they all had opportunities to answer rather than just the student who happened to raise his or her hand. Both teachers who participated reported that the students' academic performance and appropriate social behavior increased. The students reported that they enjoyed using the cards and thought it was easier and faster to learn and acquire skills (Lambert, et al., 2006). The authors recommended that any study that examines teaching strategies in urban classrooms should focus on the problem behavior reduction properties of the intervention as problem behavior tends to severely disrupt learning in urban classrooms.

C. Effects of Response Cards on Teacher and Student Behavior

Munro and Stephenson (2009) looked at the effects of response cards on both student and teacher behavior. The authors were particularly interested in teacher behavior because of the lack of research that addresses this. Most research on response cards looks at student behavior. The authors wanted to learn if response cards affected teacher behavior and how this ultimately impacted the students' learning.

Methodology:

This ABAB reversal design involved 5 students, although the entire class utilized the response cards. The students were 10 and 11 years of age. The independent variable was the response cards, which consisted of laminated cards with dry erase markers. The dependent variables were teacher behavior, including questioning and feedback given to student; and student responses, including hand raising.

Results/Outcomes:

The authors found that teachers provided more feedback when students were using response cards than when they were not. They suggested that this may be due to teachers being able to see the entire class' responses, and so were better able to give feedback to the group. The authors further showed that students responded at higher rates with response cards (Munro & Stephenson, 2009). They recommended that future studies use pretesting to assess student abilities before utilizing response cards. To measure how much learning is taking place, the authors suggested that future studies assess the accuracy of the students' answers using the response cards.

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