Promoting Independence among Individuals with Autism Spectrum Disorders

Emma Schack
St. John Fisher College, eschack_no@sjfc.edu

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Abstract

Autism spectrum disorders are characterized by deficits in social and cognitive functioning. Many individuals with autism have poor executive functioning which inhibits their ability to initiate a task, to remain attentive, and to organize and sequence information. Poor executive functioning can also make it difficult to generalize learned skills. As a result of these developmental weaknesses, individuals with autism spectrum disorders struggle to function independently. The use of pictorial activity schedules, videos, work systems, and social stories can be implemented to help individuals with autism spectrum disorders become increasingly independent, while reducing the need for adult prompting.

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Autism spectrum disorders are characterized by deficits in social and cognitive functioning. Many individuals with autism have poor executive functioning which inhibits their ability to initiate a task, to remain attentive, and to organize and sequence information. Poor executive functioning can also make it difficult to generalize learned skills. As a result of these developmental weaknesses, individuals with autism spectrum disorders struggle to function independently. The use of pictorial activity schedules, videos, work systems, and social stories can be implemented to help individuals with autism spectrum disorders become increasingly independent, while reducing the need for adult prompting.

Introduction

Autism spectrum disorders (ASD) are characterized by deficits in social and cognitive functioning (Hume, Loftin, & Lantz, 2009). Many individuals with autism have poor executive functioning within the brain which inhibits their ability to initiate a task, to remain attentive, and to organize and sequence information (Carnahan, Hume, Clarke, & Borders, 2009; Hume et al., 2009). Poor executive functioning can also hinder a person's ability to generalize learned skills (Carnahan et al., 2009; Hume et al., 2009; Iovannone, Dunlap, Huber, & Kincaid, 2003). Generalization refers to the ability of an individual to apply what he or she has learned in a variety of contexts (Bryan & Gast, 2000; Carnahan et al., 2009; Hume et al., 2009, Litras, Moore, & Anderson, 2010; Shipley-Benamou, Lutzker, & Taubman, 2002). As a result of these developmental weaknesses, individuals with autism spectrum disorders struggle to function independently. They often rely on support from teachers and caregivers to complete tasks such as preparing a meal (Bryan & Gast, 2000; Hume et al., 2009; Laarhoven & Laarhoven-Meyers, 2006). An over reliance on prompting from adults can be problematic, as it fosters dependence, creating an additional barrier to independent functioning for individuals with autism (Bryan & Gast; Carnahan et al., 2009, Hume et al., 2009, Hume & Odom, 2007). The use of pictorial activity schedules, videos, work systems, and social stories can be implemented to help individuals with autism spectrum disorders become increasingly independent, while reducing the need for adult prompting.

Picture Activity Schedules

Carothers and Taylor (2004) define a pictorial activity schedule, sometimes called a photographic, picture, or visual activity schedule, as "a series of pictures [that] depict the stages of a task" to help a student complete the task independently (p. 103). In order to create a pictorial activity schedule, the teacher or caregiver must complete a task analysis, which is a step-by-step breakdown of the steps or skills needed to complete a given task (Carothers & Taylor, 2004; Moore & Golden, 2009; Shipley-Benamou et al., 2002). Once the steps have been carefully identified, appropriate pictures are selected to represent each step. This approach reflects the visual learning strengths of many individuals with autism (Hume et al., 2009; Hume & Odom, 2007).

Pictorial activity

Picture activity schedule for hand washing (Saunders, 2010).

schedules have been proven to support increased independent functioning among students with autism. Bryan and Gast (2000) tested four students with ASD to measure the effectiveness of using a picture activity schedule to teach on-task behaviors. Given a picture activity schedule, the percentage of steps completed correctly increased for each student. Furthermore, the teaching was generalized to new activities. This study reflects the findings of earlier investigations in this area (Bryan & Gast, 2000).

Video Modeling

An extensive body of research supports the use of videos to teach skills to individuals with ASD (Carothers and Taylor, 2004; Ganz et al., 2011; Hume et al., 2009; Laarhoven and Laarhoven-Meyers, 2006; Litras et al., 2010; Shipley-Benamou et al., 2002). Videos are an effective tool for teaching individuals with autism for a number of reasons. First, videos present information visually, which reflects the way that many individuals with autism learn best (Hume et al., 2009). Secondly, using a video does not require an individual to interact with others, which is often a source of anxiety for people with ASD (Hume et al., 2009). Similarly, videos may carry less of a social stigma than other forms of intervention, such as adult prompting (Ganz, Earles, Vollrath, & Cook, 2011). Furthermore, the "natural reinforcing properties of videos" make them appealing to learners (Shipley-Benamou et al., 2002, p. 173). Videos can easily be viewed repeatedly which can help teachers overcome logistical challenges (Laarhoven and Laarhoven-Meyers, 2006). Finally, videos provide an alternative to adult prompting, which contributes to increased independence (Hume et al., 2009).

The purpose of using video modeling is to show the steps needed to successfully complete a given task (Carothers & Taylor, 2004). A model such as a sibling or

neighbor can be used to create the video or the student can serve as his or her own model (Carothers & Taylor, 2004). The latter is referred to as video self-modeling (Hume et al., 2009; Litras et al., 2010). In this approach, the student is filmed completing the task with prompting from another individual. The footage is edited so that the final video shows the student performing the task correctly and independently (Hume et al., 2009). Depending on the student and the skill being taught, it may be difficult to successfully use video self-modeling (Ganz et al., 2011).

Shipley-Benamou et al. (2002) designed a study to "evaluate the effect of the instructional video modeling intervention" (p. 167). Participants completed tasks such as mailing a letter, setting the table, and caring for a pet (Shipley-Benamou et al., 2002). In this study, video modeling was used successfully to promote skill acquisition among all three subjects (Shipley-Benamou et al., 2002). A study completed by Laarhoven and Laarhoven-Meyers (2006) further supports the use of video modeling. These individuals compared three different video based approaches to instruction (Laarhoven and Laarhoven-Meyers, 2006). In the first approach, participants watched an instructional video before completing the assigned task but received no visual supports during task completion. In the second approach, participants watched a video before completing the assigned task and received pictures to help them as they completed it. In the third approach, students viewed a video before and during task completion. Each intervention resulted in improved performance compared to baseline measures (Laarhoven and Laarhoven-Meyers, 2006). Generalization was also achieved for the three participants. These studies demonstrate the positive effects of using video modeling to support the

independent functioning of students with autism.

Work Systems

A work system is a form of structured teaching that allows individuals to practice previously learned skills in an organized space (Carnahan et al., 2009; Hume et al., 2009). A work system frequently uses visuals to represent a sequence of activities, similar to a pictorial activity schedule (Hume et al., 2009). A work system indicates the type and number of tasks that need to be completed. It lets the user know when he or she has finished the necessary tasks, and it indicates what to do after all the work is done (Carnahan et al., 2009; Hume et al., 2009, Hume and Odom, 2007). In a left-to-right work system, a type that is frequently used, the materials needed to complete the assigned tasks are organized in separate containers to the student's left (Carnahan et al., 2009; Hume et al., 2009). A posted sequence indicates the appropriate steps to follow (Hume & Odom, 2007). As a student completes each step, he or she moves the container of materials to the right side of the work space, the designated "finished" area (Hume et al., 2009).

Hume and Odom (2007) completed a study to determine whether a work system would increase on-task behavior, work completion, and use of play materials for students with autism. This study is similar to the research of Bryan and Gast (2000), as it aimed to reveal effective ways to promote independence and increased on-task behavior among students with ASD. Hume and Odom (2007) found that the use of a work system increased independent performance for all three subjects. These results were maintained during the follow up assessment, indicating that the participants were able to achieve generalization (Hume and Odom, 2007). A work system is proven to be an effective support for students with autism. It supports visual learning strengths,

it minimizes the number of distractions, and it decreases the need for adult prompting, supporting independent functioning (Carnahan et al., 2009; Hume et al., 2009; Hume & Odom, 2007).

Social Stories

Social stories are short, personalized stories written from the perspective of an individual (Litras et al., 2010; More, 2008). A social story is intended to help an individual behave appropriately in social situations (Litras et al., 2010). It includes a number of specific components that work together to make it an effective teaching tool, including a description of "where the activity is likely to take place, when and how it will occur, the emotional perspectives of others involved, and potential responses the target child could display" (Litras et al., 2010, p. 1). Most importantly, social stories

Layout of a left-to-right work system.
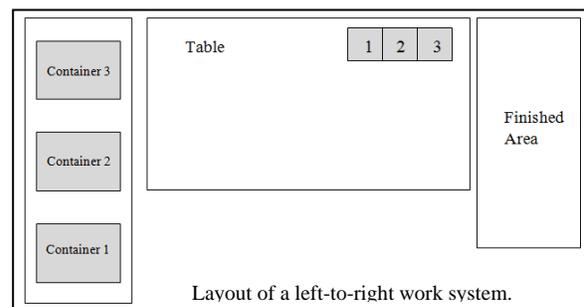
can be written to meet the unique needs of a particular learner (More, 2008). Litras et al. (2010) completed a study examining the effects of using video self-modeled social stories to support social initiation. As a result of the video social stories, the participant demonstrated improved social engagement across three behaviors: greeting, inviting, and contingent responding (Litras et al., 2010, p. 6). The results of this study support the use of video modeling and social stories to help individuals with autism become increasingly independent. Furthermore, the results of this study indicate that learning can be generalized and applied in new contexts (Litras et al., 2010).

Conclusion

Individuals with autism experience deficits in executive functioning that dramatically affect their ability to perform tasks independently. As a result, they often rely heavily on the support of teachers and caregivers to complete daily tasks. An over-reliance on adult prompting can create a barrier to independence for individuals with autism. However, through the use of pictorial activity schedules, video modeling, work systems, and social stories, individuals with autism spectrum disorder can learn to function independently in a variety of contexts.

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