



Activity Schedules

Refusing to transition from one activity to the next or between steps in a single activity can impact a student's academic progress, socialization, and independence. Problem behaviors during transitions can impact the effectiveness of teacher instruction and disrupt other students' activities. As a result, the child with the behavior problem may be excluded from peer social circles. Difficulty with transitions can significantly limit a student's ability to independently complete activities across environments throughout the school day (e.g., Forest, Horner, Lewis-Palmer, & Todd, 2004; Scheuermann & Webber, 2002; Schreibman, Whalen, & Stahmer, 2000).

Autism spectrum disorder (ASD) is characterized by a qualitative impairment in at least two of the three following areas: social interaction; communication; and restricted repetitive and stereotyped patterns of behavior, interests, and activities. In addition, individuals diagnosed with autism demonstrate delays or abnormal functioning with onset before age 3 in social interaction, language used for social communication, and/or symbolic or imaginative play (American Psychiatric Association, APA, 2000). Students diagnosed with ASD often struggle

Kate, a first-grade general education teacher, has a new student with Asperger's syndrome in her classroom. John has a very difficult time moving from one activity to the next. Often he will simply refuse to transition to the next activity by sitting down on the floor and not moving. Other times he will scream and physically lash out at his peers and the teacher. Kate noticed that the problem behaviors usually occur during a change in his anticipat-

ed daily routines. These outbursts are very disruptive to the rest of the class, and some of the other students have begun to avoid John during classroom activities. John's parents report similar difficulties at home during transitions or changes in his schedule. Kate needs to find some research-based strategies to help John more readily accept changes in his schedule and daily activities.

Helping Students With Autism Spectrum Disorders in General Education Classrooms Manage Transition Issues

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with transitions, which may lead to problem behaviors such as verbal and physical aggression, tantrums, noncompliance, and self-injury (Schreibman et al., 2000).

Transition problems can be especially evident when children with ASD are taught in general education settings. The Centers for Disease Control and Prevention (2007) report that the prevalence of ASD was approximately 1 in 150 children and reflects an increase in diagnoses and special education servicing of children eligible

al., 2000). Further, many children with ASD have difficulties with communication and socialization, which may contribute to problem behaviors when facing both routine and unexpected schedule changes (Jamieson, 2004). To ease transitions, adults may opt to provide support for every change within a daily schedule. However, this may cause children with ASD to become overly dependent on adult caregivers to stay on task and on schedule throughout their daily activities (Heflin & Alaimo, 2007; Scheuermann & Webber,

support systems. Visual supports, such as picture cues and activity schedules, may help reduce or eliminate the need for students to rely on adults to provide assistance and clarification during scheduled and unscheduled changes. Because children with ASD typically respond to visual input as their primary source of information (Quill, 1995), the use of visual support systems can supplement verbal directions when students have deficits in auditory processing. In addition, children with ASD may prefer photographs of people to the people themselves; even when directly interacting with people, these children tend to focus on physical features rather than attending to the person as an intact entity (Heflin & Alaimo, 2007).

Activity schedules are a promising educational strategy to support transitions for students with autism (Scheuermann & Webber, 2002; Wetherby & Prizant, 2000). An activity schedule is a visual support system that combines photographs, images, or drawings in a sequential format to represent a targeted sequence of the student's day. Activity schedules provide predictability throughout the student's day and allow a student to anticipate changes in the daily routine. Providing the student with increased time to process

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under "autism" designations over the past decade. Teachers can expect to face transition problems in the general education classroom with the inclusion of students with ASD, as a general education environment can be overwhelming to these children. The many different activities scheduled in a typical school day are problematic for a child whose resistance to change is an inherent component of his or her autism (e.g., APA, 2000; Schreibman et

2002). The challenge to teachers is to provide students with the needed support during transitions while decreasing dependence on adult instructions.

There are several strategies for reducing transition difficulties, such as choice making, incorporating preferred activities, using behavioral momentum or high-probability strategies, and reinforcing appropriate transition behaviors. One promising area of intervention for children with ASD is *visual*

What Does the Literature Say About Activity Schedules?

Research indicates that activity schedules have been effective for students with autism spectrum disorders in the following areas:

Transition Behaviors

- Progressing successfully between steps in an activity (Dauphin, Kinney, & Stromer, 2004; Morrison, Sainato, Benchaaban, & Endo, 2002)
- Progressing successfully between activities (Bryan & Gast, 2000; Dooley, Wilczenski, & Torem, 2001; Hall, McClannahan, & Krantz, 1995; MacDuff, Krantz, & McClannahan, 1993; Massey & Wheeler, 2000)

Communication Skills

- Scripted and unscripted verbal interactions (Krantz & McClannahan, 1998)

Daily Living Skills

- Vocational training (Watanabe & Sturmey, 2003)
- Independent dressing (Pierce & Schreibman, 1994)
- Meal preparation (Pierce & Schreibman)

Academics

- Increased on-task behavior (Bryan & Gast, 2000; Massey & Wheeler, 2000; Morrison et al., 2002)

Inappropriate Behaviors

- Reducing tantrum behaviors (e.g., crying, screaming, aggression; Dooley et al., 2001; MacDuff et al., 1993; Krantz & McClannahan, 1993)
- Reducing noncompliance (Dettmer, Simpson, Myles, & Ganz, 2000)

upcoming changes enhances the opportunity for increased participation in existing routines and transitions (Jamieson, 2004). Best of all, activity schedules are easy to construct and can be applied to existing routines in general education classrooms with minimal effort.

Researchers in a number of studies have consistently found activity schedules to be an effective intervention for children with ASD (Banda & Grimmert, 2008; see box, “What Does the Literature Say About Activity Schedules?”). Using research-based strategies not only enhances teacher efficiency but also complies with the No Child Left Behind Act of 2001’s directive to use evidence-based strategies. Researchers have found that activity schedule interventions can successfully reduce problem behaviors during transitions and increase daily living skills, social behavior, and social initiation in students with ASD (Banda & Grimmert; Heflin & Alaimo, 2007; Scheuermann & Webber, 2002).

schedules with students with ASD in inclusive settings. In this article, we describe steps to build activity schedules for use in general education classrooms and provide examples and resources for general education teachers (see box, “Online Resources for Activity Schedules”). By following the steps in this article and consulting with special education professionals, general education teachers will have the skills to use activity schedules to decrease transition issues in their classrooms.

Building and Implementing Activity Schedules

Step 1: Identify and Define Target Transition Behaviors

First, collaborate with parents and other teachers involved with the student to identify difficult transition times during the day or specific situations. Students with ASD may have problems terminating an ongoing activity or beginning a new activity. For example, a student may cry or throw materials when cleaning up the art center to transition to lunch, because

Activity schedules provide predictability throughout the student’s day and allow a student to anticipate changes in the daily routine.

Although activity schedules are frequently used by special education teachers, general education teachers can also develop and use activity

the student wants to continue the current activity. Or, students may have trouble beginning a new activity, like reading, if they were not able to com-

Online Resources for Activity Schedules

<http://atto.buffalo.edu/registered/ATBasics/Populations/aac/schedules.php>

This Web site is part of the Assistive Technology Training Online Project of the University of Buffalo and provides an overview of different visual support systems.

<http://www.joeschedule.com/>

For a minimal fee, this Web site can help teachers plan, construct, and store their activity schedules very easily. A number of free schedules and examples are also provided.

<http://autism.healingthresholds.com/therapy/visual-schedules>

This Web site provides more basic information about activity schedules, as well as a list of pertinent references.

www.mayer-johnson.com

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Figure 1. Example of Between-Activity Schedule



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plete a required math worksheet. A problem behavior may also occur when a schedule is changed, even if the new activity is as desirable as the missed activity, such as a student who becomes upset when it rains and recess must be held inside.

Next, specifically describe the problem behavior. For example, “When Susie is asked to line up for lunch, she often screams ‘No!’ and hits the student next to her.” This clearly defines the problem behavior so that any observer could identify how it relates to transition issues.

Step 2: Collect Baseline Data on the Problem Behavior

Before introducing the activity schedule intervention, collect data on the frequency or duration of problem behaviors (e.g., refusal to complete an activity, whining, refusal to begin an activity) for 2 to 3 days to establish baseline (preintervention) data. By collecting baseline data, the teacher can determine an average frequency or duration of behavior(s) before introducing the activity schedule intervention. For dangerous or harmful behaviors, the intervention can be implemented without collecting baseline data to avoid delaying treatment.

Step 3: Choose a Between-Activity or Within-Activity Schedule

There are two types of activity schedules: between-activity and within-activity. A between-activity schedule (see Figure 1) shows each activity of the day in order and may list the time for each activity. Students who have trou-

ble completing multiple steps in a task analysis—for example, a student who writes her name on the paper but does not begin the assignment—may need a within-activity schedule (see Figure 2). A within-in activity schedule shows the steps of a single activity in order.

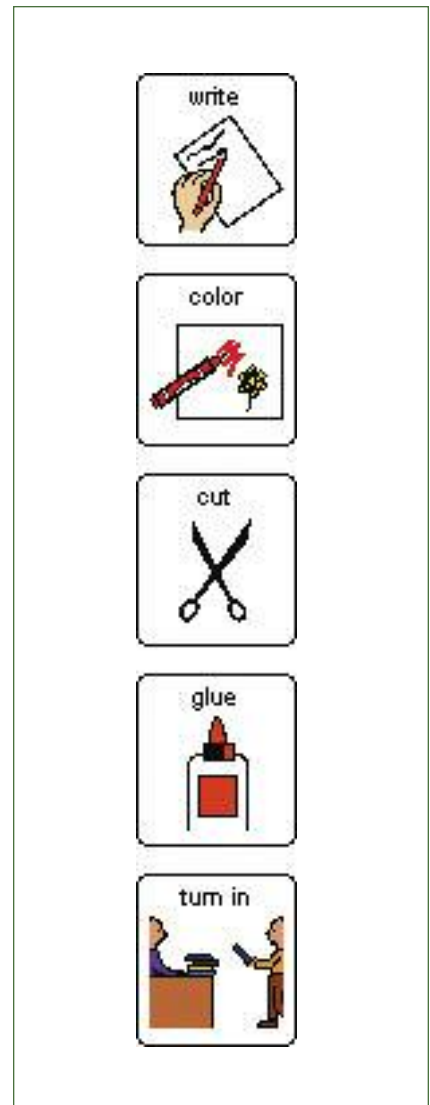
Step 4: Choose a Mode of Presentation

Activity schedules can take a number of forms, all of which can be constructed using items in the classroom. The most common mode of presentation is a simple notebook with one picture attached to each page (Bryan & Gast, 2000; Dettmer, Simpson, Myles, & Ganz, 2000). Activity schedules can also be constructed on a sentence strip by attaching Velcro and sequencing pictures. For high-functioning students in primary grades, a teacher might use multiple pictures on each page with word labels under each picture to facilitate reading skills; higher functioning students in later grades can generate their own written schedules. If the notebook is small, the student can take it from class to class to provide support throughout the day.

Step 5: Choose a Medium for the Activity Schedule

Activity-schedule pictures can be line drawings, photos, or even lightweight objects. Pictures should be fairly simple and straightforward (see Figures 1 and 2), such as a photograph of art supplies to represent art class, and are readily available from commercial software (e.g., Boardmaker®, Mayer Johnson). Pictures should be selected

Figure 2. Example of Within-Activity Schedule



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based on the student's abilities; for a student with limited cognitive abilities, select miniature objects (e.g., small ball for play) or photographs of the student performing different activities. For higher functioning students, use abstract representations, such as clip art, line drawings, or words. The ultimate goal of the activity schedule is to increase independent transitions within and between activities and decrease problem behaviors during transition times (Bryan & Gast, 2000; Dettmer et al., 2000; Dooley, Wilczenski, & Torem, 2001; Massey & Wheeler, 2000).

Step 6: Choose a Location for the Schedule

Attach the schedule someplace that is familiar to the child and easy to see (e.g., desk, wall, cabinet). Label the activity schedule with the child's name; have some type of container (e.g., envelope, basket, box) to hold completed activity pictures. Label each

direct the child to the activity schedule. After the completion of each activity, use verbal or physical prompts as necessary to help the student remove the picture of the completed activity, put the picture in the finished pocket/basket, and begin the next activity on the schedule. Then give praise for completing the activity and direct the student towards the next activity or step of an activity on the schedule. (For students using portable notebooks, model how to cross each step or activity off the list after it is completed.)

Step 8: Collect Intervention Data

Continue to collect data while using the activity schedule to determine if problem behaviors are decreasing from baseline levels. Monitor data regularly to determine the effectiveness of the activity schedule strategy. The child should begin to use the schedule more independently and display fewer problem behaviors during transitions. If the strategy is not working, retrain the stu-

respond to a classwide request to begin the next activity, individually address the student and announce the next activity. This type of cue will help the child focus on the next activity rather than allowing his refusal to escalate into a tantrum. Gradually provide fewer physical and verbal prompts until the student is able to independently complete an activity, check the schedule, move the activity picture from the schedule to "finished" box, and transition to the next activity. For higher functioning students or those using portable notebooks, independent use of an activity schedule should require minimal verbal or nonverbal adult prompts, such as a gesture towards the notebook.

Step 11: Fade the Prominence of the Activity Schedule

This step is intended to make the schedule both socially and age appropriate. Move the schedule from the wall into a binder and discontinue using Velcro. Put all of the pictures into a one-page document and have the student check or cross off each item as it is completed. Shrink the size of the pictures and increase the size of the words until the schedule uses words only. When the student no longer needs to physically check off each item, remove the binder. The schedule can be laminated and attached to the student's desk.

Finally, shrink the size of the text, print, and laminate the schedule so that it can be folded to fit in a wallet or purse. At this point, the schedule is essentially a list of activities. "Pocket" schedules can be continued into the teenage and adult years.

Step 12: Promote Generalization Across Activities and Settings

Apply activity schedules to transitions in as many settings as possible. As the student learns to use the activity schedule, steps for additional activities may be added to increase the student's level of independence. For example, being able to complete a sequence of "name on paper, color, cut, glue, and turn in" to complete a vocabulary worksheet suggests the student may be

The ultimate goal of the activity schedule is to increase independent transitions within and between activities and decrease problem behaviors during transition times.

activity in words (e.g., *lunch*) to promote literacy skills and reduce dependency on pictures. Tell the student that the schedule will show him/her what to do next throughout the day. For students with portable notebooks, talk with the student to plan where to keep the notebook (e.g., desk or backpack) during each activity or class. Pages from written activity schedules can be placed into protective plastic sheets so that the student can use an overhead or dry erase marker to cross off completed steps each day.

Step 7: Train the Student to Use the Activity Schedule

Training the student to use the activity schedule is an important step. The majority of successful interventions utilizing activity schedules use some type of training through modeling and/or prompting (Banda & Grimmert, 2008). During the training period, routinely

use the procedure outlined in Step 7.

Step 9: Add New Pictures or Words

When the student is able to transition within or between selected activities, even with prompts, extend the use of the activity schedule to cover a longer period of time within the same setting or subject. For example, if a student uses an activity schedule to complete an independent writing activity, add steps to guide the student to complete the subsequent small-group writing activity. This way, more pictures or words can be added as the student begins using the activity schedules independently.

Step 10: Fade Prompts

As a student becomes more independent in the use of the schedule, reduce prompting. If a student does not

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ready to use an activity schedule to follow steps in a math activity. The strength of activity schedules is the ease in which they can be planned, constructed, and incorporated into existing activities across a number of settings. Following initial training, children with ASD can use activity schedules to independently complete complex tasks and remain engaged in a variety of settings and situations (MacDuff, Krantz, & McClannahan, 1993). Home-based activity schedules may be implemented to increase participation in leisure activities, social interaction, self-care, and housekeeping tasks (Krantz, MacDuff, & McClannahan, 1993).

Final Thoughts

Activity schedules have been shown to be effective interventions for students with ASD, and can be considered an evidence-based teaching strategy that may help students transition more easily between scheduled routines and activities. Activity schedules also have shown promise in teaching on-task behaviors and can serve as a valuable support in helping students with ASD manage the multiple tasks typically found in inclusive settings. By following the steps presented in this article, general education teachers can plan and construct activity schedules to meet the needs of individual students with ASD.

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