




Promoting Independence in Individuals with Autism and Related Disabilities Using Photographic Activity Schedules

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Objectives

- ☞ Describe how photographic activity schedules can be used to promote independence
- ☞ Describe how social scripting/script fading can be used within activity schedules to promote social interaction
- ☞ Demonstrate how these two techniques can be combined to promote complex social behavior



Acknowledgments

The Innovators at PCDI



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(and others)

My Students



Kara Reagon Alison Betz Joy Pollard




Matt Brodhead Jessica Akers Nina Gerencser




Impairments in Social Interaction, Communication, & Independence

- ☞ Deficits in spontaneous language and social behavior are defining characteristics of students with ASD
- ☞ Even students who acquire extensive verbal skills through behavioral intervention often do not exhibit spontaneous social interactions or initiations without extensive training
- ☞ They also make fewer social initiations compared to typical peers and spend more time playing alone
- ☞ Many have difficulty initiating tasks independently and transitioning from one task/activity to another
- ☞ Photographic activity schedules and social scripts are tools that have been shown to be effective in addressing these deficits




What Is An Activity Schedule?

- ☞ "...a set of pictures or words that cues someone to engage in a sequence of activities."
(McClannahan & Krantz, 1999, p.3)
- ☞ Beginning schedules are often comprised of a set of photos of stimuli that are presented sequentially in a small 3-ring binder
- ☞ The learner independently completes the sequence using the schedule to prompt him/her instead of adult instructions




Why teach children to follow schedules? Because everybody uses them!

- ☞ Schedules provide visual/auditory prompts to engage in certain activities at certain times
- ☞ They make our lives more predictable and allow us to plan future activities
- ☞ Examples of schedules include:
 - ☞ Smartphones
 - ☞ Planners
 - ☞ Calendars
 - ☞ "To-Do" lists
 - ☞ Sticky notes
- ☞ Schedule following is a lifelong skill!




Why Activity Schedules?

- ☞ Promote Independence
 - ☞ Decreases the need for adult prompting and guidance
 - ☞ Promotes increasingly longer response chains
- ☞ Choice
 - ☞ Provides framework for teaching choice making
- ☞ Social Interactions
 - ☞ Can be used to prompt initiations of social interactions and conversations when social scripts are included
- ☞ Planning
 - ☞ A prompting and tracking sequence for tasks to be completed




Schedule Formats

- ☞ Binder with pictures or words on each page
- ☞ To do lists containing pictures or words
- ☞ Written or typed schedules
- ☞ Calendars
- ☞ Smartphones
- ☞ Audio-taped schedules




Types of Schedules

<ul style="list-style-type: none"> ☞ Across Activities <ul style="list-style-type: none"> ☞ Daily <ul style="list-style-type: none"> ☞ Teaching lessons ☞ Outdoor/exercise ☞ Independent <ul style="list-style-type: none"> ☞ Play, work, bedtime, morning ☞ Morning schedule <ul style="list-style-type: none"> ☞ Social interaction ☞ Eat breakfast ☞ Wash face ☞ Brush teeth ☞ Get dressed <ul style="list-style-type: none"> ☞ Dressing schedule ☞ School 	<ul style="list-style-type: none"> ☞ Activity specific <ul style="list-style-type: none"> ☞ Meal-time activities ☞ Snack making ☞ Setting table ☞ Cooking meals ☞ Household chores ☞ Loading dishwasher ☞ Self help <ul style="list-style-type: none"> ☞ Dressing ☞ Brushing teeth ☞ Leisure <ul style="list-style-type: none"> ☞ Model building
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Example of Schedule Combinations at School

- ☞ School Schedules
 - ☞ Daily
 - ☞ Various teaching lessons
 - ☞ Several social interactions
 - ☞ Lunch
 - ☞ Lunch preparation schedule
 - ☞ Social interactions
 - ☞ Various teaching lessons
 - ☞ Play
 - ☞ Independent play schedule




Example of Schedule Combinations at Home

<ul style="list-style-type: none"> ☞ Home Schedules <ul style="list-style-type: none"> ☞ Morning schedule ☞ Social interaction ☞ Eat breakfast ☞ Wash face ☞ Brush teeth ☞ Get dressed <ul style="list-style-type: none"> ☞ Dressing schedule ☞ School 	<ul style="list-style-type: none"> ☞ After school schedule <ul style="list-style-type: none"> ☞ Social interaction ☞ Snack <ul style="list-style-type: none"> ☞ Snack preparation schedule ☞ Homework ☞ Leisure <ul style="list-style-type: none"> ☞ Leisure schedule
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Pre-requisite Skills

<ul style="list-style-type: none"> ☞ Picture/background discrimination ☞ Identity Matching ☞ Picture/object correspondence 	<ul style="list-style-type: none"> ☞ Motivational System ☞ Tactile tolerance ☞ Acquired play/work skills
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Preparing the Environment

- ☞ Use natural locations if possible for materials
- ☞ Have materials always in the same location and within reach (perhaps on a shelf or on the floor in a specific location)
- ☞ Set the schedule up in close proximity of the materials initially
- ☞ Activity schedule is always placed in the same location on the work surface
- ☞ Reinforcers are within easy reach of the work area



Discussion Activity-Selecting and Preparing the Environment


- ☞ Think about a learner that could benefit from learning how to follow an activity schedule (everybody!)
- ☞ Think about an appropriate location for running the schedule
- ☞ Think about any modifications that you might need to make to the environment to facilitate success
- ☞ Discuss your plans with your group



Sequence of Schedule Following


- ☞ Opening schedule book
- ☞ Point to page
- ☞ Obtain item
- ☞ Perform activity
- ☞ Return item to original location
- ☞ Return to schedule book
- ☞ Turn page
- ☞ Repeat for all pages
- ☞ After terminal reinforcer, turn last page and put schedule away

[Video Example #1](#)



Materials for a Beginning Schedule

- ☞ Three ring binder (flat when open) appropriate size for the learner's age
- ☞ Velcro
- ☞ Sheet protectors
- ☞ Construction paper (same color)
- ☞ Pictures or photographs
- ☞ Containers for holding materials
- ☞ Shelf



Preparing a First Independent Play Schedule

- ☞ Beginning activity schedule should be short (5 activities or less)
- ☞ Select activities/toys with a clear beginning and end, easy to manipulate
- ☞ Include at least one social initiation in schedule when possible
- ☞ Schedule should end with a preferred snack/reinforcer





Selecting Activities

- ☞ Shape sorters
- ☞ Picture lotto
- ☞ Insert puzzles
- ☞ Color matching games
- ☞ Bead threading
- ☞ Nesting cups
- ☞ Pop up toys
- ☞ Hammer ball
- ☞ Pegboards
- ☞ Books on tape
- ☞ Dot to dot
- ☞ Music on tape
- ☞ Drink of juice
- ☞ Cup of popcorn, chips, candy
- ☞ Picture books
- ☞ Make curriculum!!!!




Closed-Ended Activities


Adjusting Difficulty of Close-Ended Activities

- ☞ Stringing beads
 - ☞ Limit the number of beads
- ☞ Matching
 - ☞ Limit the number of card pairs
- ☞ Coloring/Drawing
 - ☞ Give a partially completed picture or simplify the picture




Pre-Teaching Procedure

- ☞ If needed, pre-teach component skills in a structured format
 - ☞ Turning pages
 - ☞ Pointing
 - ☞ Getting and putting away materials
 - ☞ Setting timer
 - ☞ Reading text prompts




Discussion Activity- Close-Ended Activities

- ☞ Think about one of the students/clients with whom you work who could benefit from an activity schedule
- ☞ Generate a list of age-appropriate close-ended activities that you could use in an initial activity schedule with your student/client
- ☞ Discuss these ideas with your group




Teaching Procedure

- ☞ Give beginning instruction
 - ☞ "Go play"
 - ☞ "Find something to do"
- ☞ Once the initial instruction is given DO NOT talk until the schedule is finished (unless the schedule indicates a social interaction)
- ☞ Do not use gestures (pointing, head nodding, or smiling in approval)
- ☞ Do not make eye contact with the learner
- ☞ Be close enough to prompt if needed but, otherwise, get out of the way!




Prompting Procedures

- ☞ "Prompts are instructions, gestures, demonstrations, touches or other things that we arrange or do to increase the likelihood that (the learner) will make a correct response (McClannahan & Krantz, 1999, p. 37)."
- ☞ Not necessary for learners to demonstrate all skills independently (in the absence of adults, or a beginning instruction)
- ☞ Activity schedules teach learners to initiate and complete a sequence of activities without verbal directions




Prompting

- ☞ Schedule following is taught using physical guidance exclusively
- ☞ A prompting/prompt fading system of most-to-least intrusive prompts is used to prevent errors and promote fluid schedule following
- ☞ Physical guidance is faded as quickly as possible
- ☞ Do not prompt using gestures (e.g., pointing) or verbal instructions





Prompting Continued

- ☞ Fading Procedures:
 - ☞ Full physical/Hand over hand
 - ☞ Partial Physical
 - ☞ Light Physical
 - ☞ Proximity
- ☞ Fade within activities
- ☞ Fade across schedule sequence




Did I mention, **NO** **VERBAL OR** **GESTURAL** prompts?

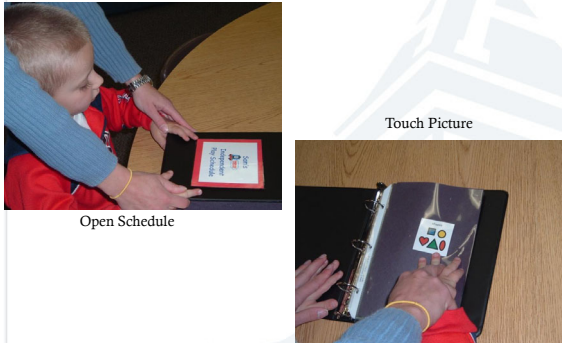



Prompting Continued


- ☞ Example
 - ☞ full physical/hand over hand
 - ☞ at wrist
 - ☞ at forearm
 - ☞ at elbow
 - ☞ at shoulder
 - ☞ no physical assistance but shadowing (right behind)
 - ☞ 2 feet away
 - ☞ 5 feet, etc.

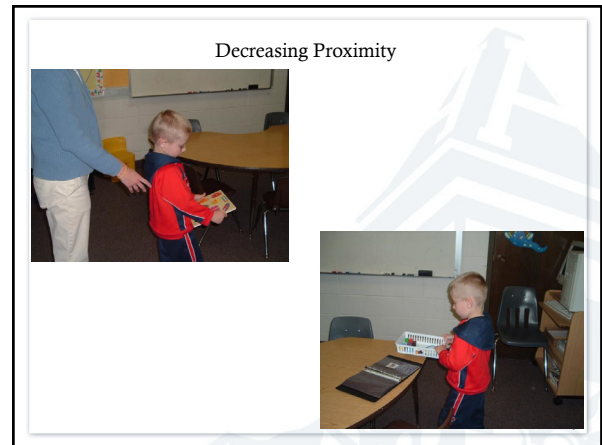
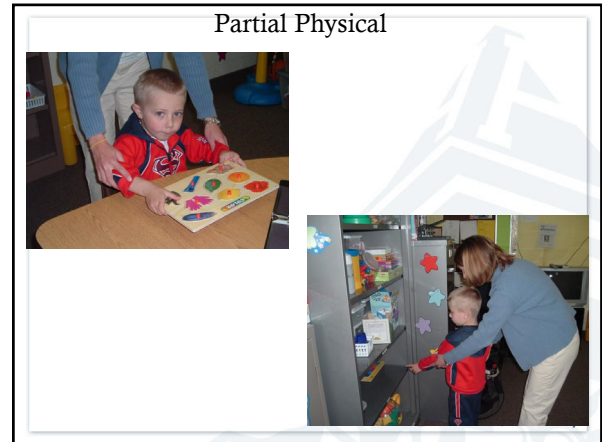
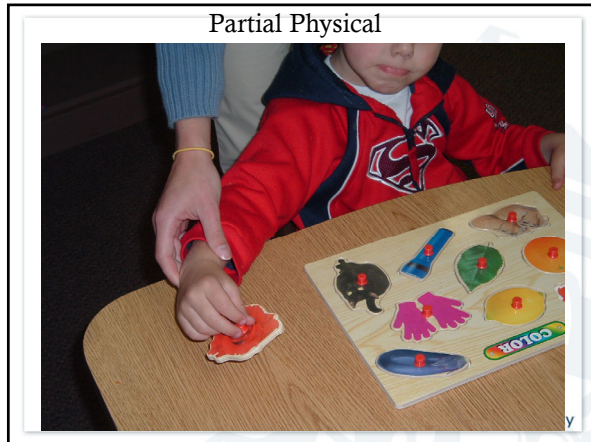


Full Physical Prompting




Partial Physical






Practice-Prompting

- Practice in your groups delivering graduated guidance from behind to help your "learner" complete an activity schedule



Delivering Reinforcers Within Schedule

- Some students may need additional reinforcement to begin using an activity schedule
- High rate when beginning a new schedule
- Always deliver reinforcers from behind
- If you are using a token board make sure the learner sees the token being delivered
- Use a combination of tokens and reinforcers if necessary
- Time delivery of last token to coincide with the completion of the whole schedule



Reinforcers Within Schedule

- ☞ Do not pair with praise
- ☞ Reinforce any step in the chain the learner performs appropriately
 - ☞ Initially reinforcing steps completed with manual guidance
- ☞ When fading manual guidance, make reinforcers contingent on independent behavior
- ☞ DO NOT reinforce for delayed responses, errors, resisting manual prompts, engaging in tantrum behavior or stereotypic behavior



Fading Reinforcers Within Schedule

- ☞ Fade reinforcers within the schedule as the learner becomes more independent
- ☞ Eventually fade out all reinforcers, including terminal reinforcer
- ☞ The independent play schedule itself should be reinforcing at this time
- ☞ May want to consider adding in social interaction opportunities



Teaching Learners to Reinforce Themselves Within Schedule

- ☞ Tokens are placed at the bottom of the schedule page.
- ☞ Learner is taught to remove them and place on token board after returning materials and returning to schedule page.
- ☞ Number of tokens correspond to number of pages in activity.



Terminal Reinforcer (On Last Page)

- ☞ Point to picture
- ☞ Obtain reinforcer (or request)
- ☞ Return to table
- ☞ Consume
- ☞ Return plate or bowl
- ☞ Return to the schedule
- ☞ Close the schedule
- ☞ Return the schedule



Terminal Reinforcer Continued

- ☞ Independently accesses
- ☞ Requests from adult or peer
- ☞ "Finished" or "All done" icon
- ☞ Once the schedule is completed and returned to its original location, social praise can be delivered





Discussion Activity-Reinforcement

- ☞ Think about what types of terminal reinforcers might work well for your learners
- ☞ Think about whether or not you may need to add supplemental reinforcers to the activity schedule for your learners and how these reinforcers will be delivered
- ☞ Discuss your plans with your group



What About Mistakes/ Challenging Behavior?

- ☞ Return to the previous prompting procedure
- ☞ Re-teach entire schedule with manual guidance
- ☞ Begin the session again
- ☞ Consider motivation for activities in the schedule
- ☞ Consider adding additional reinforcers if challenging behavior persists
- ☞ Implement rehearsals
 - ☞ Have the learner do it again so that behavior chain is free of inappropriate behaviors and or mistakes.



Discussion Activity- Addressing Challenging Behavior

- ☞ What challenging behaviors do your children/students exhibit that might interfere during an activity schedule?
- ☞ Are there any limitations in the general procedures that may be addressed/modified for your students?
- ☞ Discuss with your group how you would handle various types of challenging behavior during an activity schedule



Making Changes

- ☞ Adding new activity sequences
 - ☞ Always change the order of the pictures in the schedule to ensure 'picture reading' occurs
 - ☞ Rearrange materials so they do not reflect order in the book and the child has to find them
 - ☞ Begin to add new activities into schedule in order to lengthen the amount of time the learner is engaged in independent play and to prevent boredom



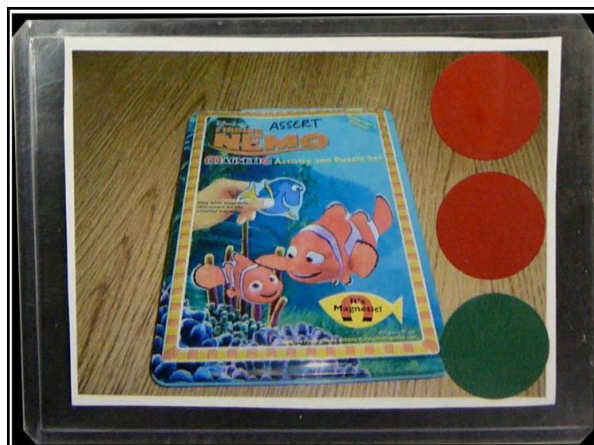
Adding Open-Ended Activities

- ☞ Many activities that our learners want to complete are do not have predetermined endings
- ☞ With a little careful planning, these activities can also be added into activity schedules
- ☞ We make these activities "close-ended" by teaching our learners how follow visual cues to use timers



Adding 'Timed' Activities into Activity Schedules

- ☞ Timed activities
 - ☞ Reading books, playground equipment, playing with toy cars, computer/tablet time, music, watching TV or videos, drawing
 - ☞ Food preparation- using the microwave oven
- ☞ Use manual guidance within schedule to teach setting the timer
- ☞ Picture cues prompts learner to
 - ☞ Clear timer, set timer for number of minutes, start timer




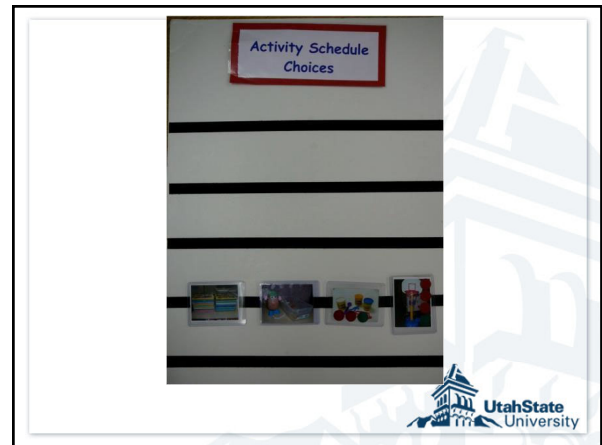
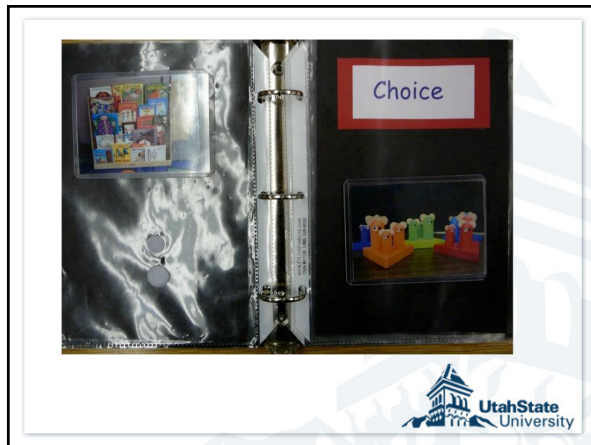
Discussion Activity- Open-Ended/Timed Activities

- ☞ Create a list of open-ended/timed activities that you could include in an activity schedule with one of your students/clients
- ☞ Discuss your ideas with your group.




Choice Options (Basic to Advanced)

- ☞ Choice of terminal reinforcer prior to teaching session
- ☞ Choices on left page, places photo of choice on right
- ☞ Photo of larger group of choice items (e.g., book shelf, toy shelf, several DVD cases)
- ☞ Photo or icon of choice board, chooses and places in book
- ☞ Arbitrary choice icon

Discussion Activity-Choice


- ☞ Think about one of your learners who could use an activity schedule
- ☞ Identify ways that you could incorporate choice into the schedule
- ☞ Plan for how you could include more complex choice options as your learner becomes more fluent with schedule following
- ☞ Discuss your plans with your group





Research Interlude!



An Evaluation of Photographic Activity Schedules to Increase Independent Playground Skills in Young Children with Autism




Jessica S. Akers, Thomas S. Higbee, Joy S. Pollard, Kristina R. Gerencser, Azure J. Pellegrino
Utah State University


Purpose and Research Questions

- ☞ Evaluate the effectiveness of a photographic activity schedule to increase independent appropriate play skills in young children with ASD on the playground
- ☞ To what extent will a photographic activity schedule increase the number of appropriate play activities completed by children with ASD on the playground without adult support?
- ☞ To what extent will a photographic activity schedule increase the amount of time children with ASD are engaged in appropriate behaviors on the playground without adult support?





Participants and Setting

- ☞ Three male students with ASD ages 4-5 attending ASSERT preschool
- ☞ Fluent activity schedule followers
- ☞ Engaged in inappropriate behavior on the playground
- ☞ Outdoor play area on the university campus




Materials

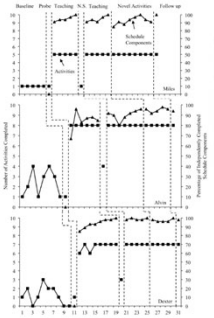
- ☞ Small 3-ring binder with pictures attached using Velcro
- ☞ Pool of 8 activities
 - ☞ Randomly selected and resequenced
- ☞ Schedules had a variable number activities individualized across participants and a terminal reinforcer (small snack)
- ☞ Added 4 activities to highest number of activities completed in baseline (Miles 5, Alvin 8, Dexter 7)





Measurement

- ☞ The number of different playground activities completed
- ☞ The percentage of independently completed schedule components completed (when schedule was present)







Discussion

- ☞ All three participants engaged in more activities when the activity schedule was present
- ☞ Limitation: We did not make any attempts to fade the activity schedules (but we have demonstrated that this is possible in a subsequent study)



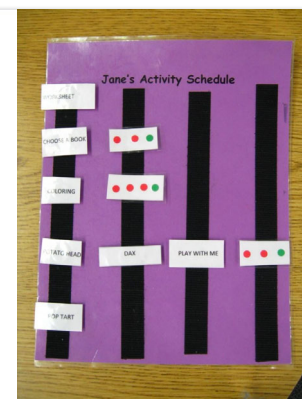
Transitioning from Picture- to Text-Based Schedules

- ☞ Teach sight word reading
 - ☞ Via structured reading program
 - ☞ Incidentally
 - ☞ Using discrete trials (match to sample)
- ☞ Sight word reading and schedule following can be taught simultaneously
- ☞ Pair sight word with picture in schedule page



Textual Cues Continued

- ☞ Use stimulus control fading to transfer control from picture to text
- ☞ Schedules can then be changed to list format
- ☞ Completed activities can be checked off, crossed out, or use tokens to keep place
- ☞ For learners with writing skills, begin using appointment books or a daily planner



Discussion Activity- Text-Based Schedules

- ☞ Think about how you could transition from a picture-based schedule to a text-based schedule with one of your learners
- ☞ Discuss your ideas with your group




Teaching Social Interaction Skills

- ☞ Including social scripts in the activity schedule teaches learners to initiate
 - ☞ Social interactions/activities with others
 - ☞ Comments about activities
- ☞ For non-verbal learners
 - ☞ Social interactions consisting of picture giving, signing, or use of an AAC device




Scripts and Script Fading

- ☞ Social scripting is one set of techniques designed to promote social interactions in individuals with ASD
- ☞ "A script is an audiotaped or written word, phrase, or sentence that enables young people with autism to start or continue conversation (McClannahan & Krantz, 2005)."




Scripts and Script Fading

- ☞ After children reliably follow the scripts, the scripts are then systematically faded back to front.
- ☞ After scripts are introduced and then faded, children often continue to use the learned scripts when they are not present and combine parts of scripts or language used by their conversation partner, thus producing spontaneous unscripted language (McClannahan & Krantz, 2005).



Script Formats

- ☞ Text-based: written script that the participant reads and repeats
- ☞ Auditory: script is recorded on an electronic device that the participant listens to and repeats



☞ "I like to eat chips."


☞ "I like to eat _____"

☞ "I like to _____"

☞ "I like _____"


☞ "I _____"

☞ _____



Incorporating Scripts

- ☞ Text (for readers OR nonreaders) or auditory
- ☞ Requesting items
- ☞ Initiating play
- ☞ Requesting attention (e.g., "Look at this!")
- ☞ Commenting
- ☞ Asking questions
- ☞ (We will talk about advanced script following later)




Discussion Activity-Basic Scripts

- ☞ Think about how you could incorporate some basic scripts (social initiation or commenting) into an activity schedule
- ☞ Discuss your ideas with your group



Measuring Progress on Activity Schedules

- ☞ Why?
 - ☞ Collecting data is critical to using an activity schedule
 - ☞ Helps identify where errors occur in the response chain (and therefore assist in error analysis).
 - ☞ Assists in decisions regarding prompt-fading.
 - ☞ When to make changes to schedule.



How/What to Measure?

- ☞ Score each component of the schedule
 - ☞ Opening schedule book/turning page
 - ☞ Looking at or pointing to picture
 - ☞ Obtaining materials
 - ☞ Completing activity
 - ☞ Putting materials away
 - ☞ Returning to schedule
 - ☞ Setting timer
 - ☞ Total duration
- ☞ Score as +/-, or record the prompt level
- ☞ Data sheet available on the ASSERT website: sper.usu.edu/ASSERT



ASSERT

Activity Schedule Following Data Sheet

Learner: _____									
Activity Schedule									
Date:	Observer:	Class schedule:	Class schedule:	Class schedule:	Class schedule:	Class schedule:	Class schedule:	Class schedule:	Class schedule:
Retrieve schedule	Open schedule	Obtain Materials	Set Timer	Complete Task	Clean up	Put Away Materials	Return to Schedule	Turn Page	
Stop at Task	Prompt and/or Looks								
Number of components completed correctly					Total number of components				
% of components completed correctly									



Combining Social Scripting and Photographic Activity Schedules to Promote Complex Social Behavior

Joint Activity Schedules and Linked Activity Schedules



Joint Activity Schedules

- ☞ 2 children share one book
- ☞ Each page has photo of one child (that child is responsible for that activity)
 - ☞ Photo of child
 - ☞ Photo of activity, or choice
 - ☞ Script, or other cue for student to initiate to peer:
 - ☞ "Play with me."
 - ☞ "Want to play?"
 - ☞ "Let's play _____."



Joint Activity Schedules Continued


- ☞ Games
- ☞ Socio-dramatic play
- ☞ Cooperative tasks (e.g., art projects, chores)
- ☞ Incorporate play scripts (e.g., comments and questions related to the play sequence)



Using Joint Activity Schedules to Promote Peer Engagement in Preschoolers with Autism


Alison Betz, Kara Reagon, & Thomas S. Higbee

Utah State University




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USING JOINT ACTIVITY SCHEDULES TO PROMOTE PEER ENGAGEMENT IN PRESCHOOLERS WITH AUTISM
ALISON BETZ, THOMAS S. HIGBEE, AND KARA A. REAGON
UTAH STATE UNIVERSITY




Purpose

- ☞ The purpose of the current study was to extend the research of MacDuff, Krantz, and McClannahan (1993) by examining the effects of teaching two children with autism to follow a joint activity schedule with scripts on play initiations and engagement with a peer during play.




Joint Activity Schedules

- ☞ 2 children share one book
- ☞ Each page has photo of one child (that child is responsible for that activity)
 - ☞ Photo of child
 - ☞ Photo of activity, or choice
 - ☞ Script, or other cue for student to initiate to peer:
 - ☞ "Play with me."
 - ☞ "Want to play?"
 - ☞ "Let's play _____."




Methods

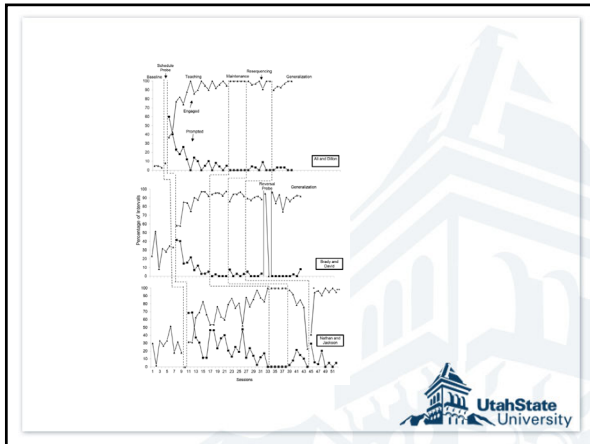
- ☞ **Participants:**
 - ☞ 3 dyads of preschool aged children with autism
 - ☞ 5 boys, 1 girl
 - ☞ Ranging from ages 3-5
 - ☞ All fluent independent activity schedule followers
- ☞ **Dependent Variables:**
 - ☞ Joint Social Engagement-Both participants engaged in the activity specified by the schedule (or appropriately playing the same game during baseline)
 - ☞ Play initiations-Repeating the "Play with me" script to the other child
- ☞ **Design**
 - ☞ Non-concurrent multiple baseline design across dyads



Methods

- ☞ 4 activity pages
 - ☞ 2 pages per participant
 - ☞ One pre-chosen game page
 - ☞ One choice page
- ☞ Discrimination of the pages
 - ☞ Picture of the participant on the top
- ☞ Pre-chosen page
 - ☞ A picture of the game they were to play with displayed under the picture of the participant
- ☞ Choice page
 - ☞ An empty page under the picture of the participant
 - ☞ Choice board consisted of 4 choices





Conclusions

- ☞ All three dyads in this study followed a joint activity schedule and maintained schedule following without adult prompts
- ☞ Two dyads maintained schedule following during resequencing and the introduction of new games
- ☞ The use of scripts and scripts fading procedures embedded in a joint activity schedule increased play initiations toward peers in all participants
- ☞ Scripts were successfully faded for all participants except for Ali in dyad 2
- ☞ Therefore, joint activity schedules using play initiation scripts is a promising tool to increase peer engagement with two children with autism

The Use of Linked Activity Schedules to Promote Social and On-task Behaviors During a Game of Hide-and-Seek

Matthew T. Brodhead, Thomas S. Higbee, Joy S. Pollard, Jessica S. Akers, and Nina Gerencser
Utah State University

JOURNAL OF APPLIED BEHAVIOR ANALYSIS 2016, 47, 1-9

THE USE OF LINKED ACTIVITY SCHEDULES TO TEACH CHILDREN WITH AUTISM TO PLAY HIDE-AND-SEEK

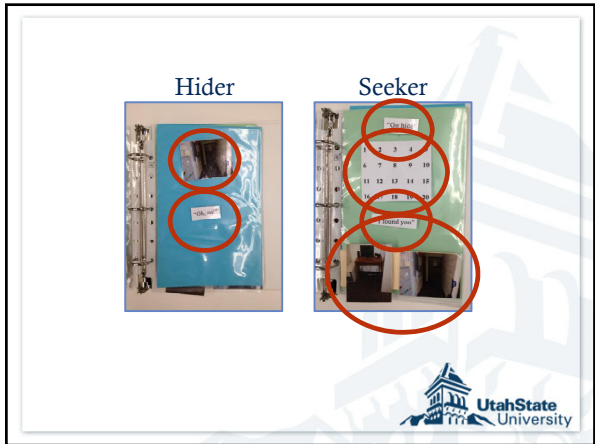
MATTHEW T. BRODHEAD, THOMAS S. HIGBEE, JOY S. POLLARD, JESSICA S. AKERS, AND KRISTINA R. GERENCSEK

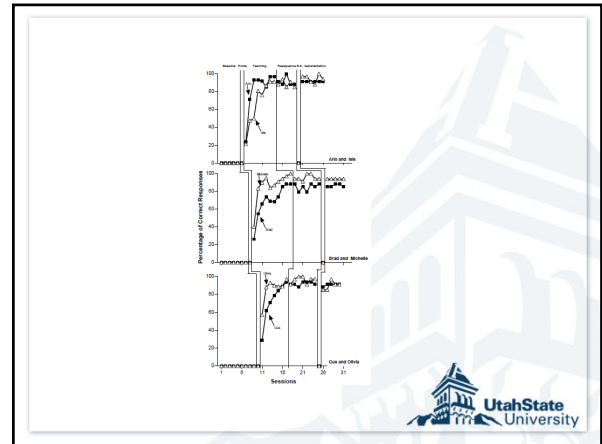
Current Research Goal

- ☞ Extend Betz, Higbee, and Reagon (2008) by using activity schedules to maintain on-task and social behavior in the participant's immediate, natural environment
- ☞ **Hide and seek** typically occurs in a large-scale environment where the child can not see the entire area at once
 - ☞ Requires stimulus control by the immediate, natural environment
 - ☞ Social interactions dominate the game
 - ☞ Time pressure
 - ☞ Lots of potential hiding places
 - ☞ More potential for distraction
 - ☞ One schedule per participant

Methods

- ☞ Non-concurrent multiple baseline design
- ☞ Six children (3 pairs-Fluent activity schedule followers)
- ☞ Setting: On-campus preschool for children with autism
- ☞ Prior to the beginning of the study, we taught
 - ☞ Textual responses (i.e., script following)
 - ☞ Three second constant time delay
 - ☞ Picture-location correspondence
 - ☞ Manual guidance
 - ☞ Locations: under tables, offices, hallways, remote corners of the room
- ☞ Measure: % appropriate hide and seek behaviors





Discussion

- ☞ Linked activity schedules can maintain social and on-task behavior during a complex social game like hide-and-seek
- ☞ As predicted, social and on-task behaviors did not occur when the schedule was removed
- ☞ Demonstrates the potential of activity schedules for teaching complex social behaviors
- ☞ Limitation: No fading of the schedule

An Evaluation of Group Activity Schedules to Train Children with Autism to Play Hide-and-Seek with Typically Developing Peers

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Purpose

- ☞ The purpose of this study was to assess using group activity schedules to teach children with autism to play a complex social with typically developing peers
- ☞ Extend the research on using activity schedules to teach social skills by using group activity schedules
- ☞ Examine the effects of systematically fading the schedule

Target Participants

<ul style="list-style-type: none"> ☞ Penny ☞ 3 year old ☞ Language deficits ☞ Interested in peers but lacked the skills to initiate play 	<ul style="list-style-type: none"> ☞ Sadie ☞ 5 year old ☞ Advanced academic skills ☞ Basic social skills ☞ Spent therapy time in the classroom with peer participants
<ul style="list-style-type: none"> ☞ Dexter ☞ 5 year old ☞ Advanced academic skills ☞ Primarily initiated play and conversation with adults ☞ Spent therapy time in the classroom with peer participants 	

Peer Participants

- ☞ Twelve typically developing children (peer participants)
- ☞ Attending university preschool
- ☞ Four of the peer participants were males and eight were females
- ☞ Four of the peer participants were 5 years old and eight were 4 year olds
- ☞ Three peer participants played hide-and-seek during the session with each child with autism



Setting

- ☞ University Early Childhood Center
 - ☞ Baseline, Teaching, Fading Sessions: common area outside of the classrooms
 - ☞ Cubbies, tables, chairs, and observation rooms
- ☞ Generalization sessions: outdoor play area
 - ☞ Sandbox, slide, toys, playhouses



Materials & Research Design

- ☞ Schedules
 - ☞ Two 3-ring binders
 - ☞ Construction paper inserted in page protectors
 - ☞ Pictures attached with Velcro
- ☞ Video cameras
 - ☞ One for each participant (4)
- ☞ A non-concurrent multiple baseline design across play groups



Hide-and-Seek Game Rules

- ☞ We required each participant to play the role of the seeker at least once during the game
- ☞ We did not allow the participants to play the role of the seeker in pairs
- ☞ We also required participants to hide in different locations from other players



Procedures- Identical for Both Target and Peers

- ☞ Baseline:
 - ☞ Activity schedules were not present
 - ☞ Sessions were 10 min
 - ☞ No prompts
- ☞ Activity schedule probe
 - ☞ Activity schedules were present
 - ☞ No prompts
- ☞ Generalization Probes
 - ☞ Outside play area




Procedures

- ☞ Teaching
 - ☞ Participants were physically prompted to use the schedules
 - ☞ Dexter required one booster session to practice hider behaviors
- ☞ Scripts
 - ☞ Seeker: "Found you", "See you", and "Got you"
 - ☞ Hider: "Oh no", "Dang it", "Ahh man"
- ☞ No schedule probe
 - ☞ Followed the same procedures as baseline

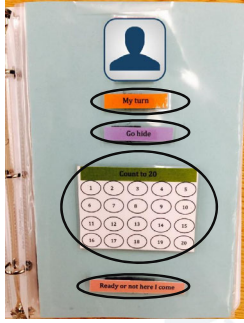



Procedures

- ☞ Fading
 - ☞ Followed the same procedures as teaching but schedules were systematically faded
- ☞ Follow up
 - ☞ 2 weeks after treatment
 - ☞ Did not provide any prompts
 - ☞ Schedule present at last successful fading step



General Procedures-Seeker Schedule


General Procedures-Seeker Schedule






Script Fading

- ☞ Scripts were faded after one session at 85% or better based on performance of the target child with ASD
- ☞ Scripts were faded one word or one portion of the script at a time from the end of the phrase to the beginning, including the colored strip attached to scripts
- ☞ Scripts were completely faded for all three participants
- ☞ Scripts
 - ☞ Seeker: “Found you”, “See you”, and “Got you”
 - ☞ Hider: “Oh no”, “Dang it”, “Ahh man”




Schedule Fading

- ☞ Fading was initiated after three consecutive sessions at 90% or better independent responding
- ☞ Fading from one step to another was one sessions at 90% or better independent responding

Systematic fading steps:


1. Removed the numbers in circles for counting to 20






Systematic fading steps:

1. Removed the numbers in circles for counting to 20
2. Removed the circles for counting to 20





Systematic fading steps:

1. Removed the numbers in circles for counting to 20
2. Removed the circles for counting to 20
3. Removed pictures of locations from the seeker strip and hider binder




Systematic fading steps:

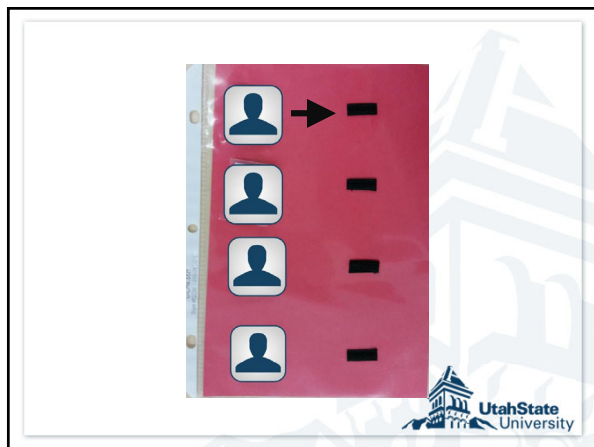
1. Removed the numbers in circles for counting to 20
2. Removed the circles for counting to 20
3. Removed pictures of locations from the seeker strip and hider binder
4. Removed the seeker strip and direction count to 20





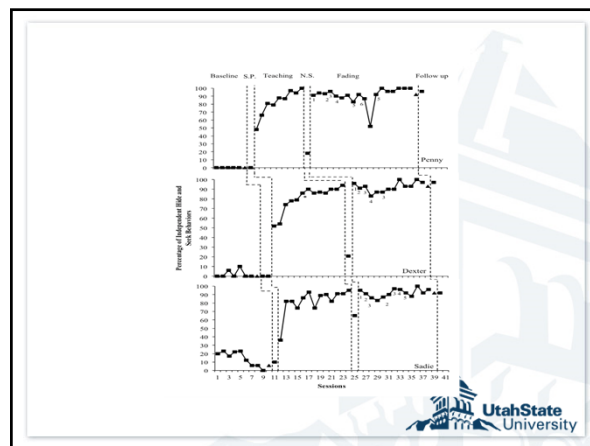
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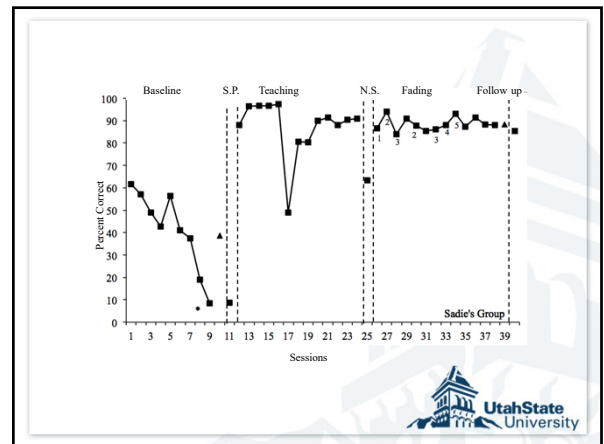
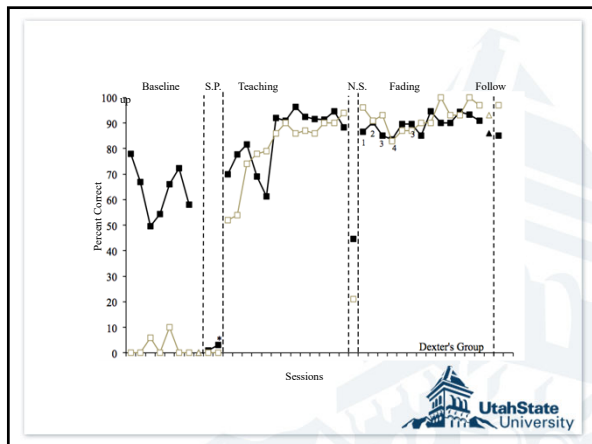
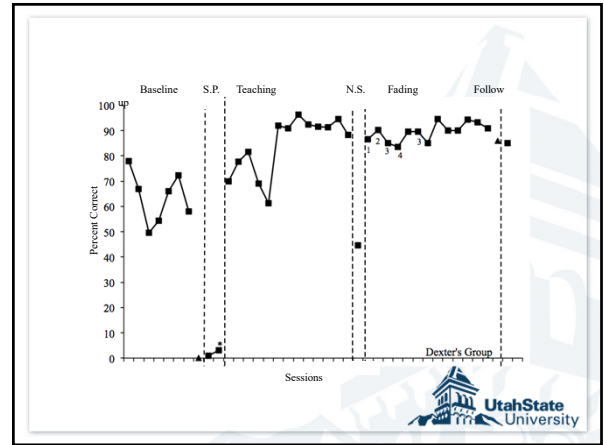
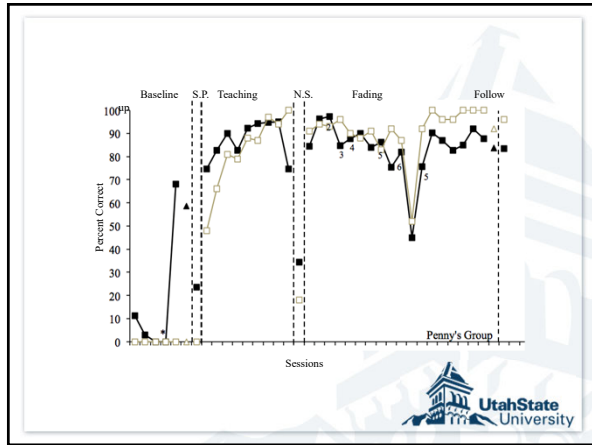
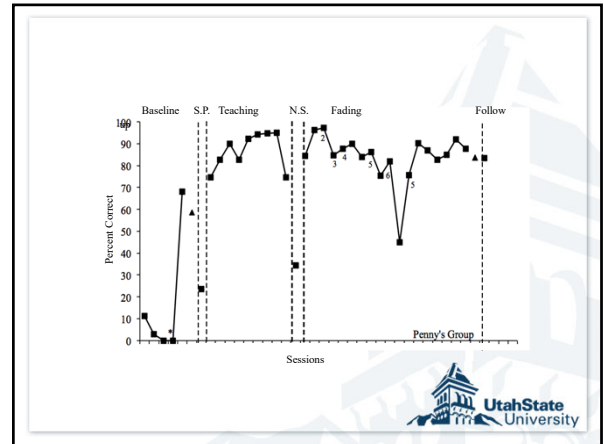
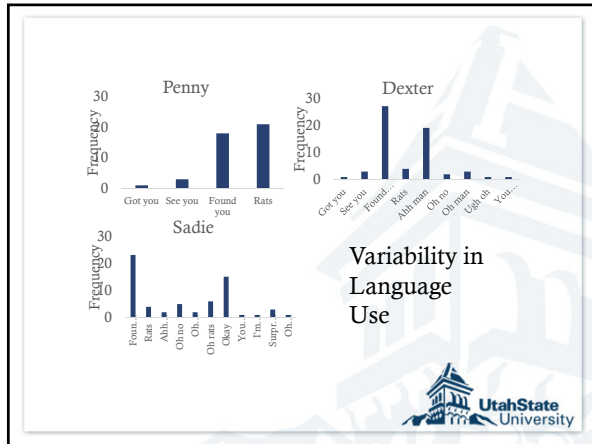
1. Removed the numbers in circles for counting to 20
2. Removed the circles for counting to 20
3. Removed pictures of locations from the seeker strip and hider binder
4. Removed the seeker strip and direction count to 20
5. One sheet of construction paper with pictures of players

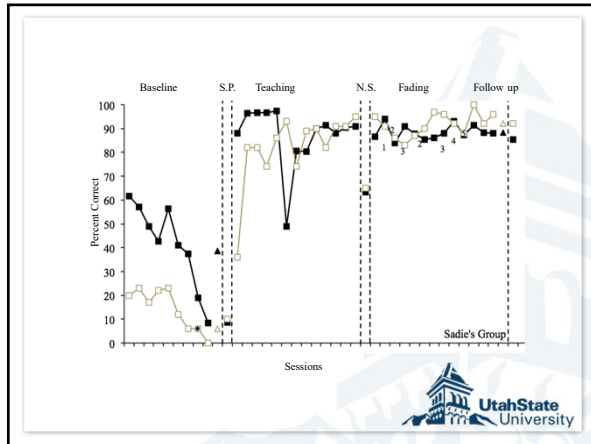


Systematic fading steps:

1. Removed the numbers in circles for counting to 20
2. Removed the circles for counting to 20
3. Removed pictures of locations from the seeker strip and hider binder
4. Removed the seeker strip and direction count to 20
5. One sheet of construction paper with pictures of players
6. Removed the seeker schedule







Discussion

- ☞ Extends the results of Brodhead et al. (2014)
- ☞ Target and peer participants followed complex schedules
 - ☞ Seven possible hiding locations
 - ☞ Once hider binder was faded completely, the number of possible locations increased
- ☞ All three target participants were able meet the criteria for fading and were able to play hide-and-seek with a faded version of the schedule
- ☞ Two of the target participants were able to play hide-and-seek with a single sheet of paper displaying the order of seekers

Discussion

- ☞ All three target participants learned the general behaviors of hiding and seeking
 - ☞ Participants hid in novel locations
 - ☞ Participants searched for other players in an appropriate manner
 - ☞ Did not memorize the sequence of hiding locations presented during teaching
- ☞ Generalization sessions
 - ☞ Independently found appropriate hiding locations and were able to locate hiders in this new environment

Summary

- ☞ This is the first study to use activity schedules to teach a group of children to play a complex social game
 - ☞ One child with ASD and three typically developing peers
- ☞ This study was the first to attempt to systematically fade schedule components
 - ☞ Participants were able to continue playing the game even when the majority of schedule components were faded

Promoting Sociodramatic Play Between Children with Autism and their Typically Developing Peers Using Activity Schedules

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Purpose


- Extend the literature on activity schedules by investigating the extent to which linked activity schedules increase sociodramatic play in children with ASD with their typically developing peers
- Investigate the extent to which the linked activity schedules can be faded and the same levels of sociodramatic play continue to be observed

Target Participants

Three 4-year-olds with ASD

- Bruce
- Tobias
- Hazel

- Fluent activity schedule followers
- Echoed four-word phrases
- Followed simple instructions
- Demonstrated independent play skills
- Demonstrated deficits in social play with peers




Peer Participants

Eight typically developing 4- to 5-year-olds

Two peer participants participated with any target participant during each session on a volunteer basis


Peer participants did not participate in further initial baseline sessions after exposed to treatment



Setting

Common area of a university-based preschooler for children with ASD

Contained two small tables, two small chairs, one built-in bench, and cabinets



Materials

Wearable Items



Toy Food



Materials



Materials





Response Definition and Measurement

- Engagement:** Independently participating in interactive behaviors with peers regarding the restaurant scenario, or independently participating in scheduled behaviors
- 20 s momentary time sample
- Also measured if the participant was prompted or unengaged

Response Definition and Measurement

- Independent Schedule Completion:** Independently completing behaviors (both interactive and schedule-specific) programmed within the activity schedules
- Measured when schedules were present only
- Also measured if the participant was prompted

Response Definition and Measurement

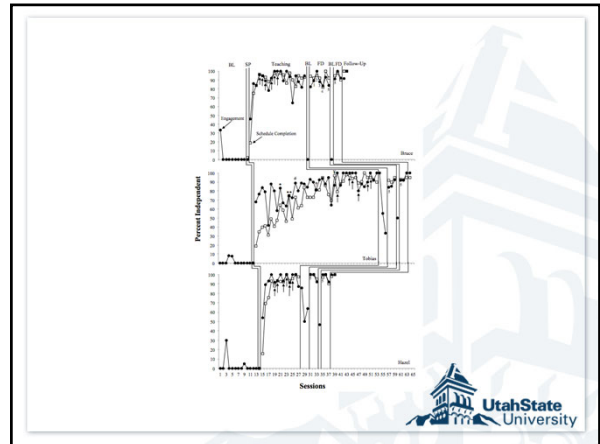
- Varied Vocal Behavior:** Independently emitting unscripted yet contextual vocalizations
- Measured total count across sessions

Example

Waiter: What do you want?
 Diner: I want pizza.
 Waiter (to Chef): One pizza.
 Chef: Coming right up!
 (Plates pizza)
 Food is ready.
 Waiter: (Takes pizza from Chef)
 (Gives pizza to Diner)
 Here you go.
 Diner: Thank you.
 (Pretends to eat pizza)
 Mmm yummy!
 I'm done, bye!
 Waiter: See you later.

Schedule Fading

- 1 Pictures of wearable items removed
- 2 Eating icon and food pictures removed
- 3 Arrow icons and bin picture removed
- 4 Participant pictures from diner and chef schedules removed
- 5 Participant pictures from waiter schedule removed



Unscripted Play Behavior Completed More Than Once

Unscripted Behavior	Number of Times Observed
Water	
"Setting light up" as waiter	4
"You're welcome"	2
"That's it, I'm done, bye"	23
"That's it, good job, bye"	2
Made eating sounds	17
"I want (food), please"	4
Added peer's name at the end of a vocalization	2
Change food order as diner	
Pushed plate toward the waiter as the diner	16
Pushed plate toward the waiter as the chef	14
Table	
"Goodbye"	4
"You're welcome"	2
"Here you go" as chef	4
"See you later" as diner	10
"I want (food)" as waiter	23
Made eating sounds	5
Pushed plate toward the waiter as the chef	2
Pushed plate toward the diner as the waiter	4
Head	
"You're welcome"	3
Repeated "What do you want?" after no response	2
Repeated "See you later"	3
Made eating sounds	7
Pushed plate toward the waiter as the diner	6
Pushed plate toward the waiter as the chef	3

Discussion

- Replicated effects of linked activity schedules on play behavior for two target participants
- Replicated effects of linked activity schedules on play behavior for peer participants
- Replicated effects of linked activity schedules faded to minimal support

Discussion


- Extended the utility of activity schedules to sociodramatic play with peers for two target participants
- All target participants demonstrated play behaviors for three different roles
- All target participants varied their contextual sociodramatic play behaviors

Discussion

- First linked activity schedule study to observe higher levels of appropriate behavior during reversals to baseline
- Demonstrated the utility of engagement measure to allow for varied contextual play
- Two participants completed expedited fading with only one fading step


Future Directions

- Investigate prerequisites for the intervention
- Investigate other interventions to increase sociodramatic play
- Allow for flexibility in engagement to mirror typically developing children's flexibility and spontaneity during play
- Promote and measure generalization



Discussion Activity- Complex Schedules

- ☞ Think about how you could use a complex social schedule with your learners
- ☞ Are there any pre-requisite skills that they would need to learn first?
- ☞ Discuss your plans with your group




Activity Schedules-Summary

- ☞ Promote independence
- ☞ Develop choice making skills
- ☞ Teach selection and sequencing of activities
- ☞ Prompt social interactions
- ☞ Increase on-task behavior
- ☞ Decrease adult prompts
- ☞ Decrease stereotypy



Activity Schedules: Other Current and Future ASSERT Research Projects

- ☞ Parent implemented joint activity schedules
 - ☞ With siblings with and without autism
- ☞ Expanding the range of activities included within activity schedules
- ☞ Exploring ways to incorporate new technology to deliver schedules
- ☞ Fading the activity schedules and transferring stimulus control to the natural environment



Thank you!!!

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