

Strategies for Promoting Spontaneous Language In Young Children with Autism

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ASSERT Program Aims

1. **Education:** Provide effective educational and behavioral early intervention using research-based best practices
2. **Research:** Conduct research to improve educational and behavioral interventions for children with autism
3. **Training:** Serve as a model training classroom for USU preservice special education teachers and other educational professionals throughout the state of Utah who are interested in learning to work effectively with children diagnosed with autism spectrum disorders



Autism: Still The Fastest Growing Disability Category in the U.S.

- Autism is a severe developmental disability, marked by impairments of communication and social/emotional functioning that is often accompanied by significant behavior problems and restricted patterns of interest
- Prevalence:
 - 1 in 149 births (1 in 133 in Utah)
 - equally distributed across races
 - 4:1 ratio of males to females (7:1 in Utah)
 - It is the fastest growing disability category in the US
 - Since 1998, Utah's school enrollment of children with autism has jumped 900% to 1,799 students in 2005-2006.

Sources: Centers for Disease Control (CDC), 2007 (<http://www.cdc.gov/mmwr/>), Utah State Office of Education


Autism Spectrum Disorders

- Autism
- Pervasive Developmental Disorder (PDD)
- Asperger's Syndrome
- The term "Autism Spectrum Disorders" or ASD is the generic term that includes all three labels for the disorder

Autism: Education and Treatment

- While researchers have thus far been unsuccessful in identifying the cause of autism, they have developed effective methods for treating the disorder
- Research has shown that while children with autism do not learn readily from typical educational environments, they can learn a great deal when the environment is appropriately constructed
- Research has consistently demonstrated that successful treatments for children with autism are those based on principles of Applied Behavior Analysis (ABA)
- Research has also shown that behavioral interventions are most effective when they are intense (30-40 hours per week) and started at a young age (3-5 years of age)
- These same strategies can be effectively used to teach older individuals with ASD as well

ABA-Based Teaching Techniques



- Discrete Trial Teaching
- **Social Scripting/ Script Fading**
- Activity Schedules
- Mand Training
- Video Modeling
- Naturalistic Teaching Techniques
- and many others...

Scripts

- “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).”

Script Fading

- After children reliably use 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, combine parts of scripts or language used by their conversation partner thus producing spontaneous unscripted language (McClannahan & Krantz, 2005).

Previous Literature

- Scripts and script fading procedures have been effective strategies to teach children and adolescents with autism conversational language.
 - Audio taped scripts (Stevenson, Krantz, & McClannhan, 2000)
 - Textual scripts (Krantz & McClannahan, 1993; Krantz & McClannahan, 1998; and Sarokoff, Taylor & Poulson, 2001)

Script-fading Procedures

- Conversational topics using script-fading procedures have included :
 - initiations to peers and or adults about recently completed activities, current activities or upcoming activities (Krantz & McClannahan, 1993)
 - approaching and initiating to an adult about an upcoming event or completed activity (Krantz & McClannahan, 1998)
 - commenting about objects within their environment, such as a snack or video game (Sarokoff, Taylor & Poulson, 2001)
 - appropriate conversational skills during shopping trips (Brown, 2003)

Using Scripts

- Text (for readers)
- Voice activated buttons
- Script fading
 - Audio-taped scripts or textual scripts are faded back to front.





Social Scripting-Examples

- [Full script](#)
- [Partially faded script](#)

Examples of Social Interactions

- To request attention
 - “Watch me”
- For physical interactions
 - Tickle, hug, kiss
- For joint attention/sharing with toys or objects
 - Bubbles, ball, sing songs
- To discuss favorite topics
 - Movies, restaurants

Social Initiations

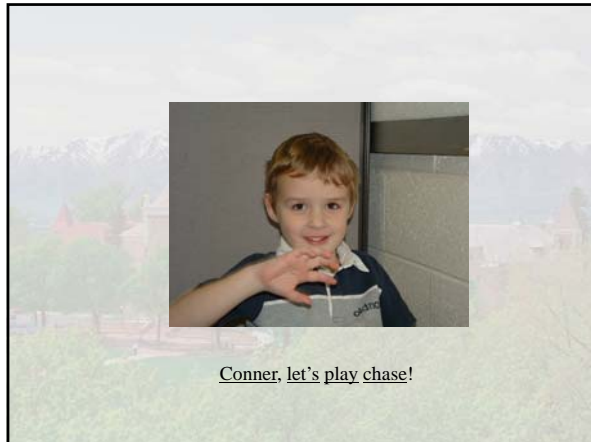
- List 5 activities
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.

Examples of Interactions About Activities

- At the beginning of an activity or at the completion of an activity
 - “May I look at a book?”
 - “Look what I did!”
 - “I’m hungry.”
 - “Bathroom.”

Scripts and Script-Fading

- “I like to eat chips.”
 - “I like to eat ____.”
 - “I like to ____.”
 - “I like ____.”
 - “I ____.”
 - _____
- Audio scripts
 - Written scripts
 - Video Models



How to interact with your child

- Sit next to your child and orient your face towards him
- Model interactions and elaborations
- Pause to see if the child initiates
- Respond naturally to your child's interactions using
 - words he understands
 - while making the mean length of your response similar to your child's verbal imitation abilities
 - use appropriate volume and intonation
 - use gestures and play actions when appropriate

Research at ASSERT on Script Fading

- Reagon and Higbee (in press), Journal of Applied Behavior Analysis
- The purpose of this study was to extend the use of script and script fading procedures to a home setting by training parents to help create, implement and systematically fade scripts to promote appropriate social interactions in young children with autism about play activities.

Participants and Setting

- 3 students with Autism Spectrum Disorders (ASD) (ages ranging from 3 – 6) and one parent of each participants
- Child participants were included in the study if they had verbal speech but did not initiate conversation or had minimal conversational exchanges (≤ 5) that were contextually appropriate during play with their parent and if the parent was willing to learn how to use scripts and script fading procedures
- The study was conducted in the child's home

Procedures

- *Response Definition and Measurement*
Number of interactions were measured using a continuous event-recording system, during which observers recorded the frequency of interactions that occurred during the activity session.
- Sessions were 5 minutes in duration.

Baseline

- During baseline, the parent was instructed to sit next to the child and orient their face towards the child. The parent was instructed not to initiate conversation to the child but to respond only if the child spoke.

Parent Training

- Didactic
- Script development
- Role play

Pre-teaching

- Non related audio scripts, manual guidance and verbal prompts were used to teach the child how to use the voice recorded buttons.
- The participant did not start intervention until he had successfully used the voice activated buttons 3 consecutive times with fading of the last word.

Intervention

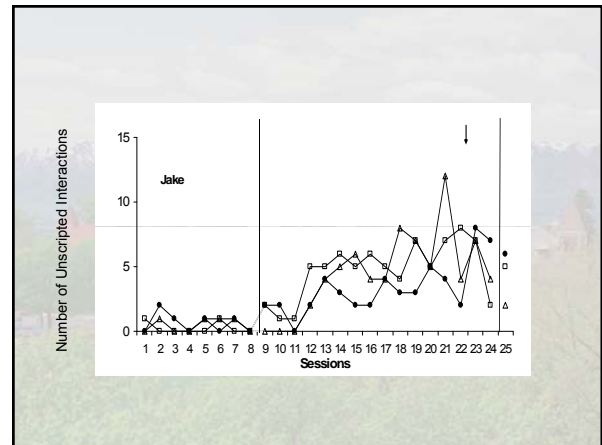
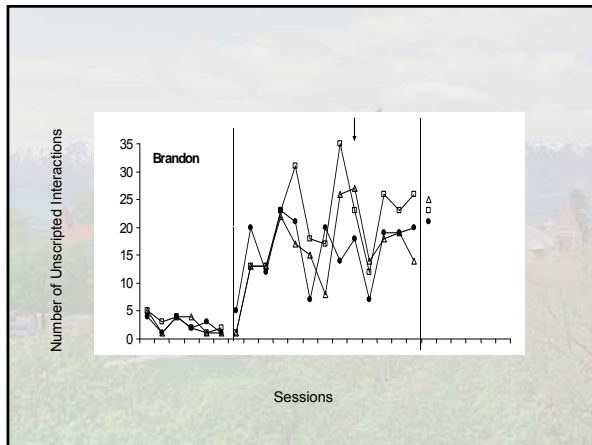
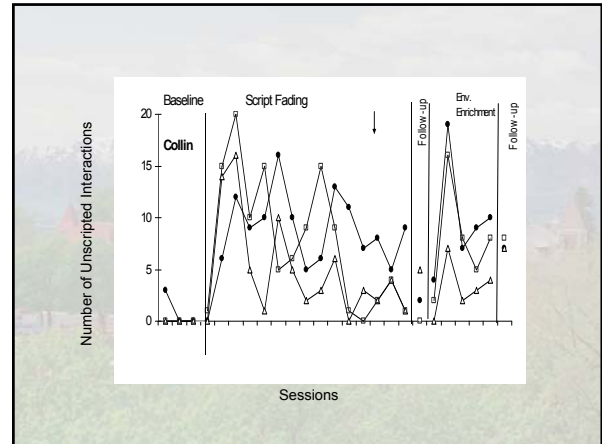
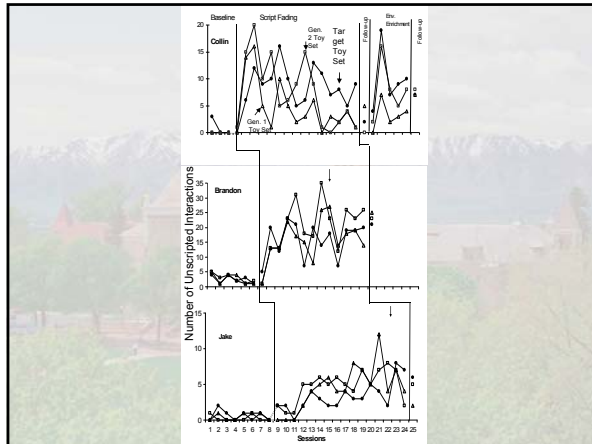
- Sessions were conducted once a day, in which the parents told the child "Let's play." The parents arranged the stimuli on the table or floor and minimized distractions.
- Parents collected data on scripted and unscripted responses.
- Sessions were run for 5 minutes with a 2-3 minute break in between activities/toys.
- The 3 activities were presented quasi randomly, not in the same sequence more than 2 times in a row.

Intervention

- The parent was instructed to sit next to the child and orient her face towards the child. The parent was instructed not to initiate conversation to the child but to respond only if the child spoke.
- If the child initiated interaction, the parent was to respond with a statement or question that was contextually related.
- Parents were instructed to respond naturally to child interactions using words the child understands, while making the mean length of their response similar to the child's verbal imitation abilities, using appropriate volume and intonation, and to use gestures and play actions when appropriate.

Intervention

- The parent was instructed not to provide praise or other additional reinforcement for child interactions.
- If the child used unintelligible speech or used low volume the parent was instructed to respond with a clarifying statement.



- ### Results
- Collin
 - Baseline: Mean = .33, Range (0 - 3)
 - Intervention: Mean = 6.9, Range (0 - 20)
 - Trains: Mean = 8.4
 - Blocks: Mean = 4.8
 - Books: Mean = 7.5
 - Follow-up
 - Trains: 2 Blocks: 5 Books: 0
 - Intervention with environmental enrichment: Mean = 6.9, Range (0 - 19)
 - Trains: Mean = 9.8
 - Blocks: Mean = 3.2
 - Books: Mean = 7.8
 - Follow-up
 - Trains: 7 Blocks: 7 Books: 8

- ### Results Continued
- Brandon
 - Baseline: Mean = 2.9, Range (1-5)
 - Intervention: Mean = 16.1, Range (1-35)
 - Rescue Heroes: Mean = 14.7
 - Toy Story: Mean = 14.9
 - Trains: Mean = 18.9
 - Follow-up
 - Rescue Heroes: 21
 - Toy Story: 25
 - Trains: 23

Results Continued

- Jake
 - Baseline: Mean = 0.45, Range (0-2)
 - Intervention: Mean = 4, Range (0-12)
 - Garage: Mean = 6
 - Unscripted Mean = 3.3
 - Scripted Mean = 2.85
 - Fire Station: Mean = 4.5
 - Trains: Mean = 4.75
 - Follow-up
 - Garage: 6
 - Fire Station: 2
 - Trains: 5

Results Continued

- Social Validity
- Parents reported that they were satisfied with the parent training and their child's use of scripts.
- Parents reported that they believed the quality of their child's interactions improved and the number of interactions increased during the play sessions.

Conclusions

- The results indicate that parents of children with autism can successfully implement scripts and script fading procedures in the home.
- Scripts and script fading procedures are effective methods to increase interactions during play.
- Only 3 scripted interactions were taught to each participant.
- The current study extends the body of research on scripts and script fading procedures and parent training.
- A major difference between the current study and previous research is that the procedures did not include the use of an activity schedule to facilitate the use of scripts.

Limitations

- Presence of voice recorded buttons except during follow-up
- Parental responses to interactions were not evaluated
- For one of the participants environmental enrichment was necessary to maintain interactions

Future Research

- More data is required to clarify the effects of parents use of scripts and script fading procedures on children with autisms' interactions during play
- How to systematically fade the presence of the voice recorded button
- Evaluate the effects parental responses may have on unscripted interactions

Conclusions

- Contriving motivation is an additional way to evoke language in young children with autism
- Scripts and script fading procedures can help facilitate spontaneous language in young children with autism
- Parents can easily be trained to implement both procedures in the home

Scripts and Script-Fading

- Increase social initiations of children with autism
- Promote generalization
 - Using several versions of a script
 - Teaching multiple scripts
 - Adding new scripts after fading
- Promote adaptations of the scripts
- Increase in social responding
- Decreases adult prompts

For more information...

Visit the ASSERT website at:

<http://sped.usu.edu/ASSERT>