Teaching Facial Expression Recognition to Children with Autism Spectrum Disorder

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Background

• Difficulty interpreting facial expressions is a typical characteristic of individuals with Autism Spectrum Disorder (ASD).
• The Empathizing-Systemizing Theory suggests that children with ASD have difficulty empathizing, but have a compulsive need to classify, analyze, and construct nonhuman systems (Golan, et al., 2009). This could explain why social interactions are often difficult for children with ASD.
• According to the Hyper-Systemizing Theory, individuals with ASD prefer motion determined by physical patterns (Golan, et al., 2009).
• Research has shown that both video modeling and Social Stories have been successful in teaching social skills to children with ASD; however, data regarding which of the interventions is more effective and efficient in teaching facial expression recognition is lacking.
• This pilot study was designed to test whether a modified Social Stories intervention or a variation of a video modeling intervention (The Transporters) is more effective in teaching children with ASD to recognize facial expressions.

Methods

• A language assessment was conducted during the baseline phase to determine whether participants had sufficient language development to benefit from the interventions.
• An initial baseline task identified facial expressions that the children were not able to label. Participants were shown one photograph at a time in a full-screen power point presentation and were asked “How is this person feeling?”
• Several facial expressions were targeted with each participant during the study.
• A Social Story was created for each of the facial expressions that the children were not able to label. The stories followed specific predictable tracks, but model human facial expressions and emotions.
• The number of different words used to label facial expressions increased over the course of the study (even though the words were not always correct), suggesting that this participant was acquiring new vocabulary.
• The participant’s eye contact with the examiner during the Social Stories increased steadily throughout the study.

Participant 1 Results

• Comparison of Two Interventions
• Facial expression recognition improved in the generalization task but an increase in the percentage correct for some of the quizzes associated with each intervention was observed.
• The participant’s eye contact increased steadily throughout the study.
• Factors Affecting Results
• The participant may have experienced some confusion because we targeted more stimuli.

Participant 2 Results

• Comparison of Two Interventions
• Results for this participant were variable. There was a notable change in the participant’s facial expression recognition during the generalization task for Social Stories, although quiz scores did not reflect this change. More intervention sessions might facilitate learning.
• In the final two sessions, participant 2’s performance increased on the quizzes for both interventions, also indicating that more intervention sessions for each target emotion might facilitate learning.
• Factors Affecting Results
• Participant 2 experienced significant routine changes while this study was being conducted.
• It was noted that he experienced irregular sleeping patterns throughout the study.
• He received two Wisconsin Early Autism Project (WEAP) sessions on the same day he attended each of our sessions; he was brought to sessions by various caregivers.
• His Speech-Language Pathologist indicated that “why” questions were one of his IEP goals, which might have influenced his ability to comprehend the quiz questions for both interventions. He did show improvement on the baseline generalization task, which only required comprehension of ‘How is he/she feeling?’

Discussion/Future Research

• This study illustrates the uniqueness of each child with ASD. It also indicates a need for further research in order to determine which interventions are more effective and efficient for children with ASD. There are many factors in teaching/learning the complex task of facial expression recognition, so there are many directions for future studies to take.
• This study demonstrated the need to utilize a slower pace and include scaffolding while reading Social Stories in order to improve quiz scores.

Future Directions:
• Larger-scale study with children who have a range of severities of ASD, that also includes a control group.
• Increase the number of intervention sessions for each intervention and emotion.
• Include a condition where emotion vocabulary is used in multiple contexts, to facilitate generalization.
• Experiment with the types of illustrations used in Social Stories.
• More closely evaluate the effect of gaze-direction (eye contact) on facial expression recognition.
• More closely evaluate the types of photographs used for the baseline measure.

Selected References:


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