Examining the Effects of the Collaborative Strategic Reading – High School Intervention on Adolescents With Autism Spectrum Disorders

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Research Question

What are the reading, behavioral, and social outcomes of implementing Collaborative Strategic Reading – High School (CSR–HS), an adapted version of CSR, for adolescents with autism spectrum disorders (ASD)?

Participants, Setting, and Materials

PARTICIPANTS

Three high school students with ASD
• Access primarily academic content across the school day
• Read on at least a second-grade instructional level
• Have an IQ in the low-average to above-average range (80 and above)
• Are willing to participate
• Possess skills and abilities to share their ideas, contribute to conversation, and work cooperatively with a student or tutor to complete a reading activity, using taught strategies

Three peer partners
• Identified by staff as a good match for target students with ASD
• Available to participate during target students’ CSR–HS sessions
• Have some experience in working with target students

TARGET PARTICIPANT CHARACTERISTICS

- GRADE
  - HECTOR: 9
  - BRIAN: 10
  - SOFIA: 11
- AGE
  - HECTOR: 15
  - BRIAN: 16
  - SOFIA: 17
- DIAGNOSIS
  - HECTOR: ASD
  - BRIAN: ASD
  - SOFIA: ASD
- INSTRUCTIONAL READING LEVEL (GRADE EQUIVALENT)
  - HECTOR: 2.0
  - BRIAN: K8
  - SOFIA: 4.8
- WJ IV PRIOR/TEST
  - HECTOR: 90
  - BRIAN: 80
  - SOFIA: 70

SETTING

• Rural central Texas high school
• Approximately 30 miles southeast of Austin
• 65% of students economically disadvantaged
• Pullout tutorial sessions in the special education setting

MATERIALS

• CSR–HS visual (see below)
• Lesson plan
• Text
• Visual cues for topic (see below)
• Learning log
• Self-monitoring checklist
• Question stems

CSR–HS Visual

Intervention Design

DELAYED MULTIPLE-BASELINE DESIGN

- Target participant only
- With peer partner

Baseline Phase
(Minimum of three data points)

Intervention Phase
(Minimum of three consistent data points)

Phase 1: CSR–HS
Phase 2: Possible

Maintenance Phase
(Minimum of three data points 1–2 weeks after Intervention Phase)

Independent Phase (Optional)
(At least two data points after Maintenance Phase)

DEPENDENT VARIABLES

- Accuracy of responding to reading comprehension probes
- Challenging behavior
- Hemisphere: Off task
- Brain: Task refusal
- Social interactions (imitation and responding)

DATA COLLECTION

- Percent correct from permanent product (reading comprehension probes)
- Event recording for task refusal (percent of opportunities) and social interactions (frequency)
- Partial interval recording for off-task behavior and skin picking
- Treatment fidelity measured for 100% of sessions
- Interobserver agreement measured for at least 40% of sessions

Results

DEPENDENT VARIABLES

- HECTOR AND SOFIA
  - Reading Comprehension: Improved accuracy of responding during CSR–HS implementation and maintenance and independent phases
  - Challenging Behavior: Reduced intervals with off-task behavior in all phases
  - Social Interactions: Increased social interactions in all phases

- BRIAN
  - Reading Comprehension: Decreased accuracy of responding during CSR–HS; increased accuracy during CSR–HS 2
  - Challenging Behavior: Reduced intervals with off-task behavior from CSR–HS implementation to independent phase
  - Social Interactions: Increased social interactions from CSR–HS implementation to independent phase

ACCURACY OF RESPONDING TO READING COMPREHENSION PROBES

MEAN SCORES (%)

<table>
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<th></th>
<th>HECTOR</th>
<th>BRIAN</th>
<th>SOFIA</th>
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Note: BL = Baseline Phase; INT = Intervention Phase; M = Maintenance Phase; E = Evaluation Phase

Discussion

IMPLICATIONS

• Findings confirm the need for individualizing instruction for students with ASD.
• Multicomponent interventions (e.g., strategy instruction, cooperative learning, behavioral techniques) may improve the reading comprehension performance of students with ASD.
• Modifying academic tasks is a promising antecedent intervention that may indirectly reduce challenging behaviors and increase social interactions.

LIMITATIONS

• Limited number of participants
• Self-contained setting
• Researcher-implemented intervention
• Lack of generalization data

DIRECTION FOR FUTURE RESEARCH

• Future research is warranted to examine the generality of CSR–HS strategies across settings and content areas.
• Future research is needed to examine the effects of each approach employed through component analysis.
• Further investigations are warranted to establish evidence-based practices particular to enhancing the reading comprehension performance of students with ASD.