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 target students with ASD
- Available to participate during target students’ CSR–HS sessions
- Have some experience in working with target students

TARGET PARTICIPANT CHARACTERISTICS

<table>
<thead>
<tr>
<th>HECTOR</th>
<th>BRIAN</th>
<th>SOFIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRADE</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>AGE</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>DIAGNOSIS</td>
<td>ASD</td>
<td>ASD</td>
</tr>
</tbody>
</table>

INSTRUCTIONAL READING LEVEL (GRADE EQUIVALENT)

|            | 2.0 | 3     | 2.5   | 4.8   |

MULTICLASS TEST

Note. WJ-III PC PRETEST = Woodcock Johnson III Tests of Achievement/Passage Comprehension subtest.

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
- 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

Phase 1: CSR–HS
- Phase 2: Possible

Dependent Variables
- Accuracy of responding to reading comprehension probes
- Challenge behavior
- Social interactions (imitation and responding)

DATA COLLECTION
- Percent correct from permanent product (reading comprehension probes)
- Event 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

HECTOR AND SOFIA

<table>
<thead>
<tr>
<th>READING COMPREHENSION</th>
<th>HECTOR</th>
<th>BRIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved accuracy of responding during CSR–HS implementation and maintenance and independent phases</td>
<td>61</td>
<td>75</td>
</tr>
</tbody>
</table>
| Decreased accuracy of responding during CSR–HS | Phase 1: 61
| Phase 2: 75 |

CHALLENGING BEHAVIOR
- Reduced intervals with off-task behavior in all phases
- Reduced intervals with off-task behavior from CSR–HS implementation to independent phase

SOCIAL INTERACTIONS
- Increased social interactions in all phases
- Increased social interactions from CSR–HS implementation to independent phase

ACCURACY OF RESPONDING TO READING COMPREHENSION PROBES

<table>
<thead>
<tr>
<th>BL</th>
<th>INT</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>HECTOR</td>
<td>40</td>
<td>81</td>
</tr>
<tr>
<td>BRIAN</td>
<td>61</td>
<td>75</td>
</tr>
<tr>
<td>SOFIA</td>
<td>88</td>
<td>92</td>
</tr>
</tbody>
</table>

Note. BL = Baseline Phase; INT = Intervention Phase; M = Maintenance Phase; Phase 1 = Independent Phase.

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

Future research is warranted to examine the generality of CSR–HS strategies across settings and content areas.
- Further 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.

FREQUENCY OF SOCIAL INTERACTIONS

<table>
<thead>
<tr>
<th>BL</th>
<th>INT</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>HECTOR</td>
<td>6</td>
<td>95</td>
</tr>
<tr>
<td>BRIAN</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>SOFIA</td>
<td>5</td>
<td>74</td>
</tr>
</tbody>
</table>

Note. BL = Baseline Phase; INT = Intervention Phase; M = Maintenance Phase; I = Independent Phase.