

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)?

Reutebuch, C. K., Vaughn, S. R., El Zein, F., Kim, M. K., & Weinberg, A. (under review). *Examining the effects of a comprehensive reading intervention for adolescents with autism spectrum disorders.*

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

| | HECTOR | BRIAN | SOFIA |
|--|--------|-------|-------|
| GRADE | 9 | 10 | 11 |
| AGE | 15 | 16 | 17 |
| DIAGNOSIS | ASD | ASD | ASD |
| INSTRUCTIONAL READING LEVEL (GRADE EQUIVALENT) | 3 | 2 | 5 |
| WJ-III PC PRETEST | 2.0 | K8 | 4.8 |

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

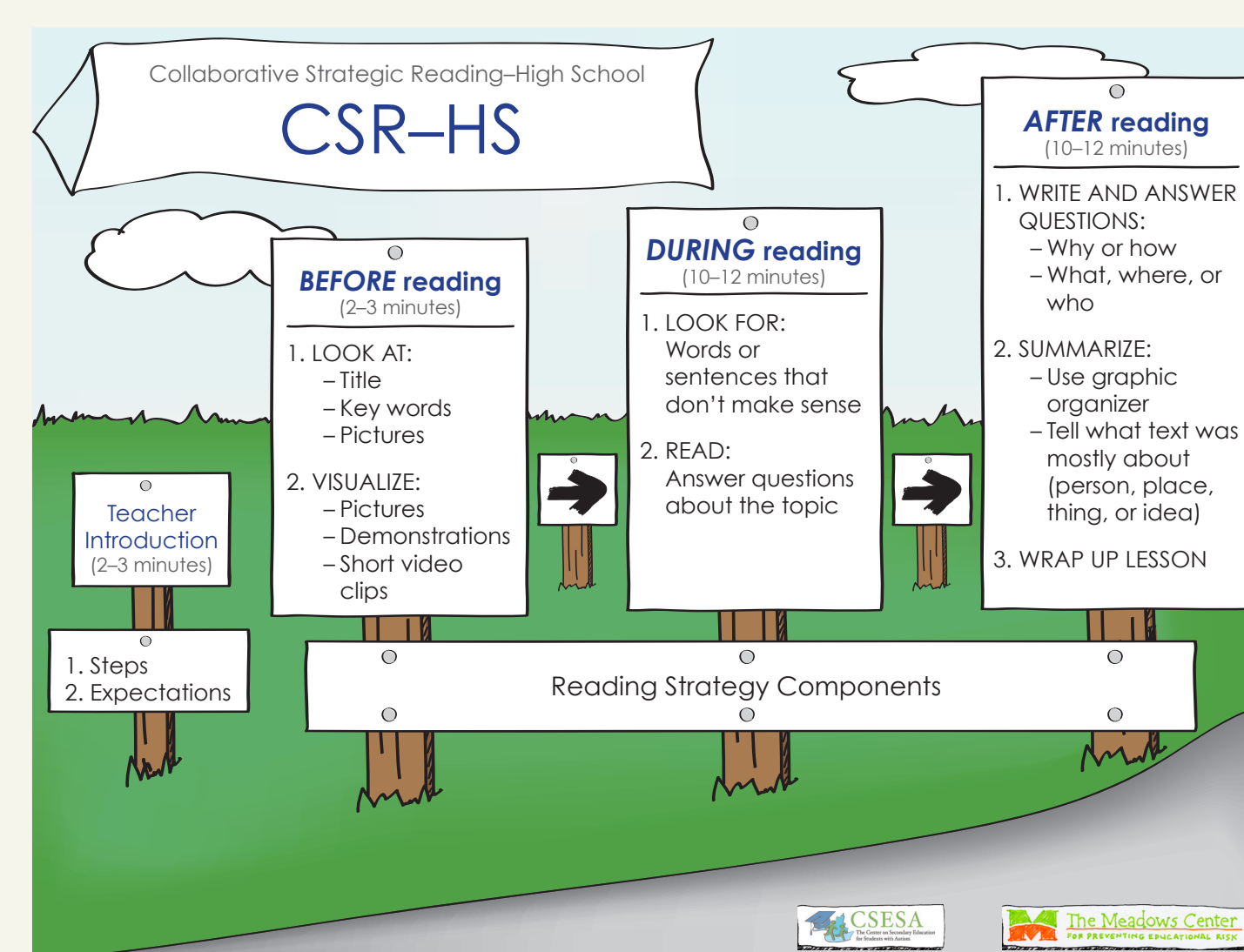
SETTING

- 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)

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)

Baseline Phase

- Teacher led 30-minute business-as-usual sessions.
- Participant read aloud or silently a randomly selected passage on his or her instructional reading level.
- Implementer provided directions to answer reading comprehension questions.
- Participant completed probes without receiving error correction or prompting.

Intervention Phase

- **Overview sessions:** Priming technique in which students access CSR–HS strategy steps prior to beginning lessons
- **CSR–HS sessions:**
 - Students paired with trained, typically developing peer
 - Before-, during-, and after-reading model
 - Strategy instruction
 - Cooperative learning
- **Adaptations for ASD:**
 - Priming (tutorials)
 - Task analysis
 - Self-monitoring (checklist)
 - Least-to-most prompting
 - Visual cues (pictures, video clips)
- **CSR–HS 2:** Further adaptations if needed

DEPENDENT VARIABLES

- Accuracy of responding to reading comprehension probes
- Challenging behavior
 - Hector: Off task
 - Brian: Task refusal
 - Sofia: Skin picking
- 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

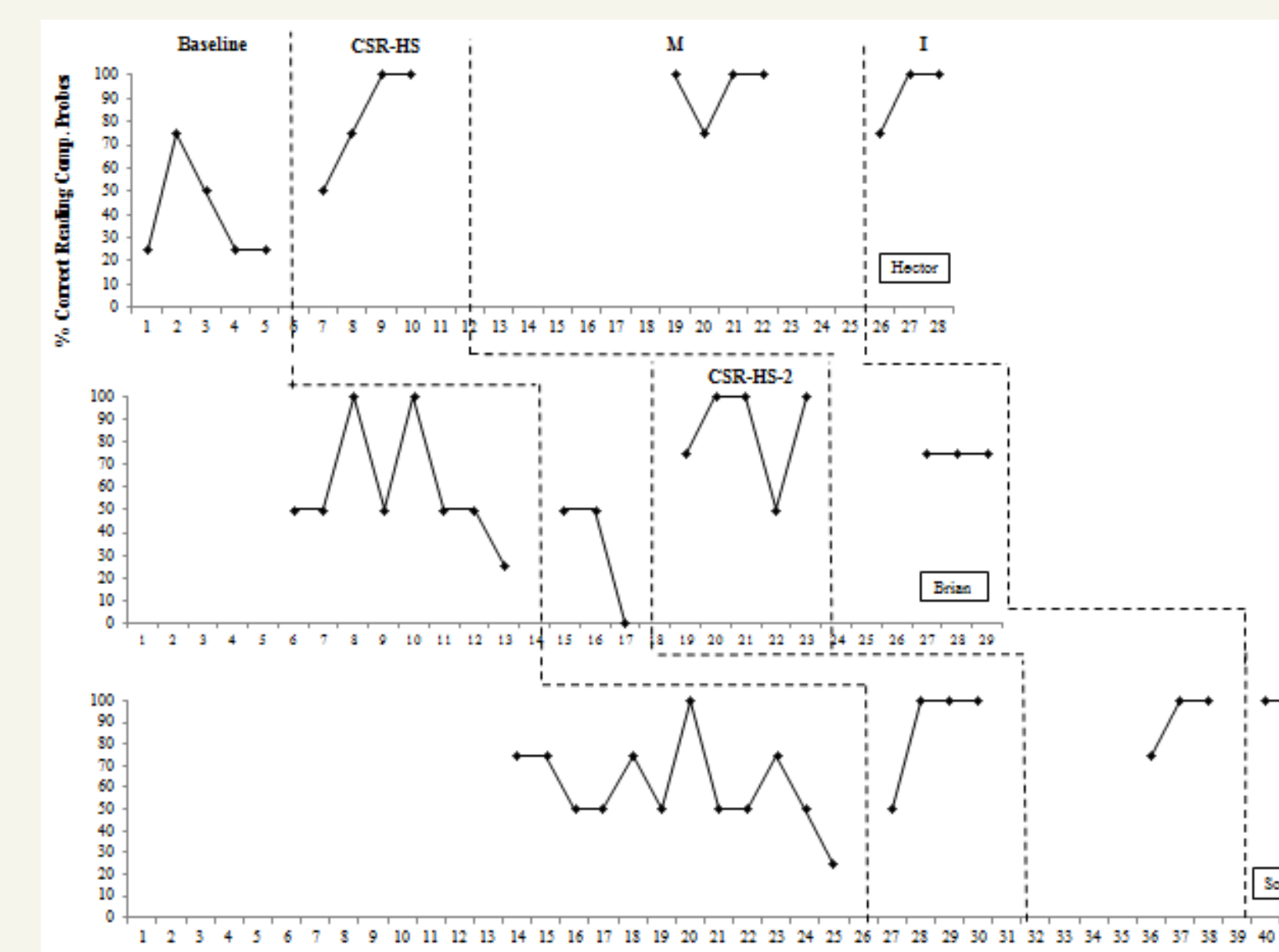
DEPENDENT VARIABLES

| | HECTOR AND SOFIA | BRIAN |
|-----------------------|--|--|
| READING COMPREHENSION | Improved accuracy of responding during CSR–HS implementation and during maintenance and independent phases | Decreased accuracy of responding during CSR–HS; increased accuracy during CSR–HS 2 |
| 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

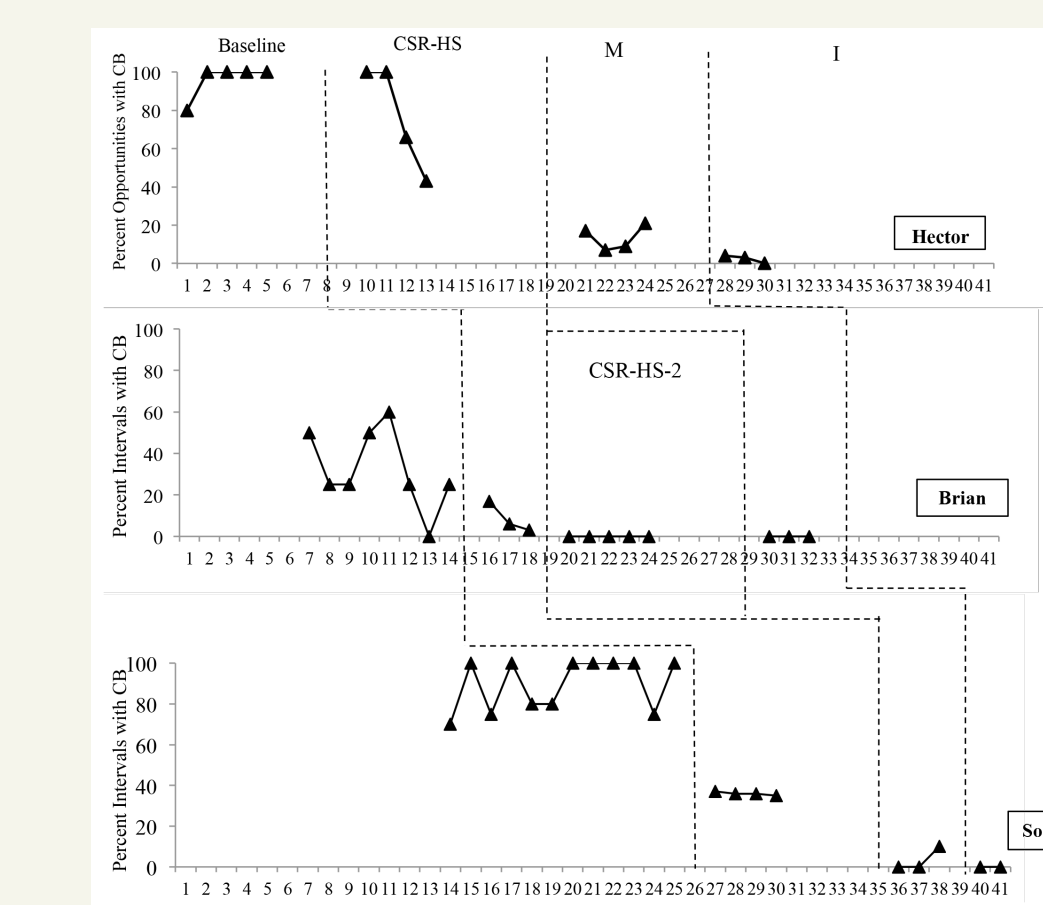
| | MEAN SCORES (%) | | | |
|--------|-----------------|----------------------------|----|-----|
| | BL | INT | M | I |
| HECTOR | 40 | 81 | 94 | 92 |
| BRIAN | 61 | Phase 1: 33 Phase 2: 85 | 75 | NA |
| SOFIA | 60 | 88 | 92 | 100 |

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

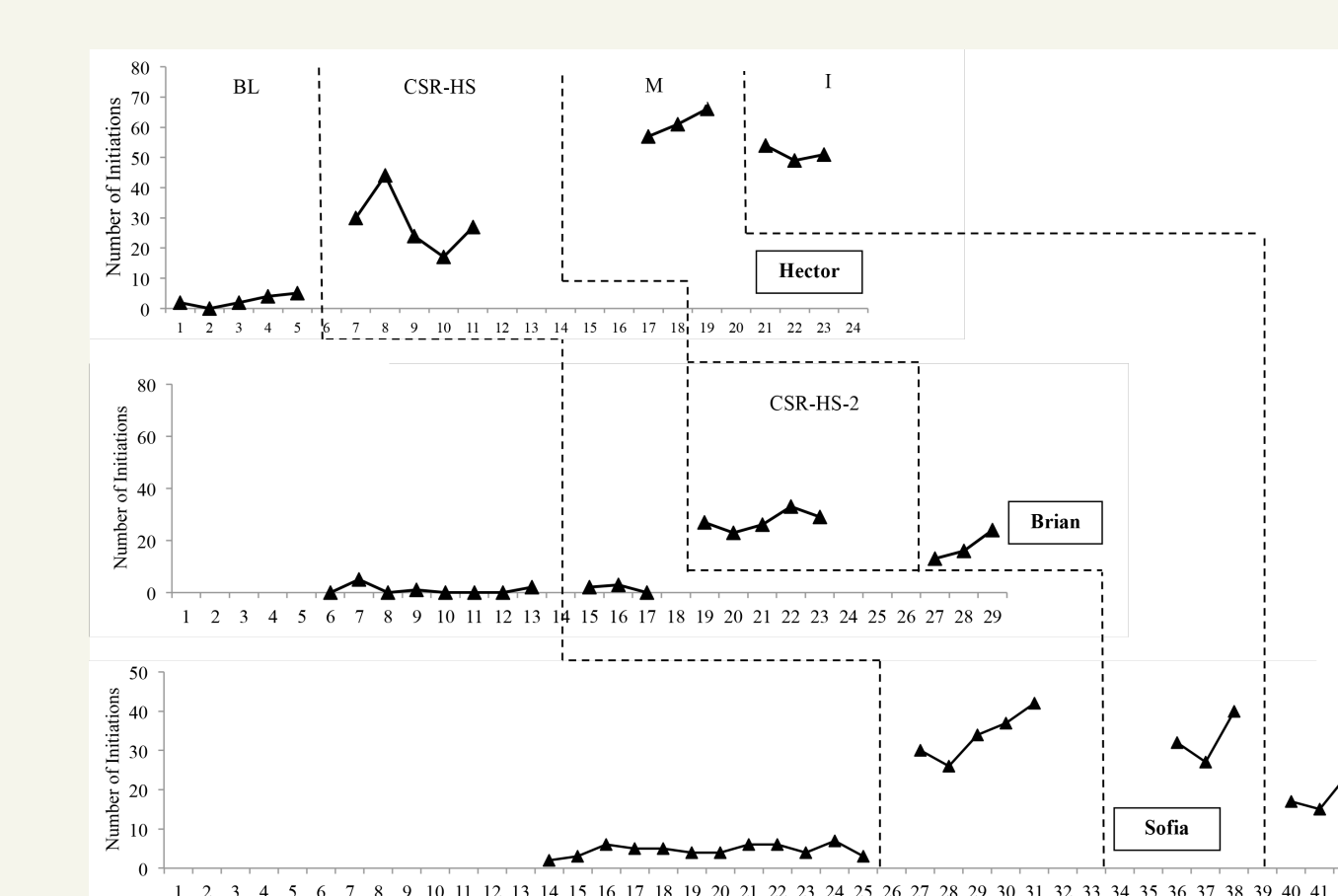


Results (cont.)

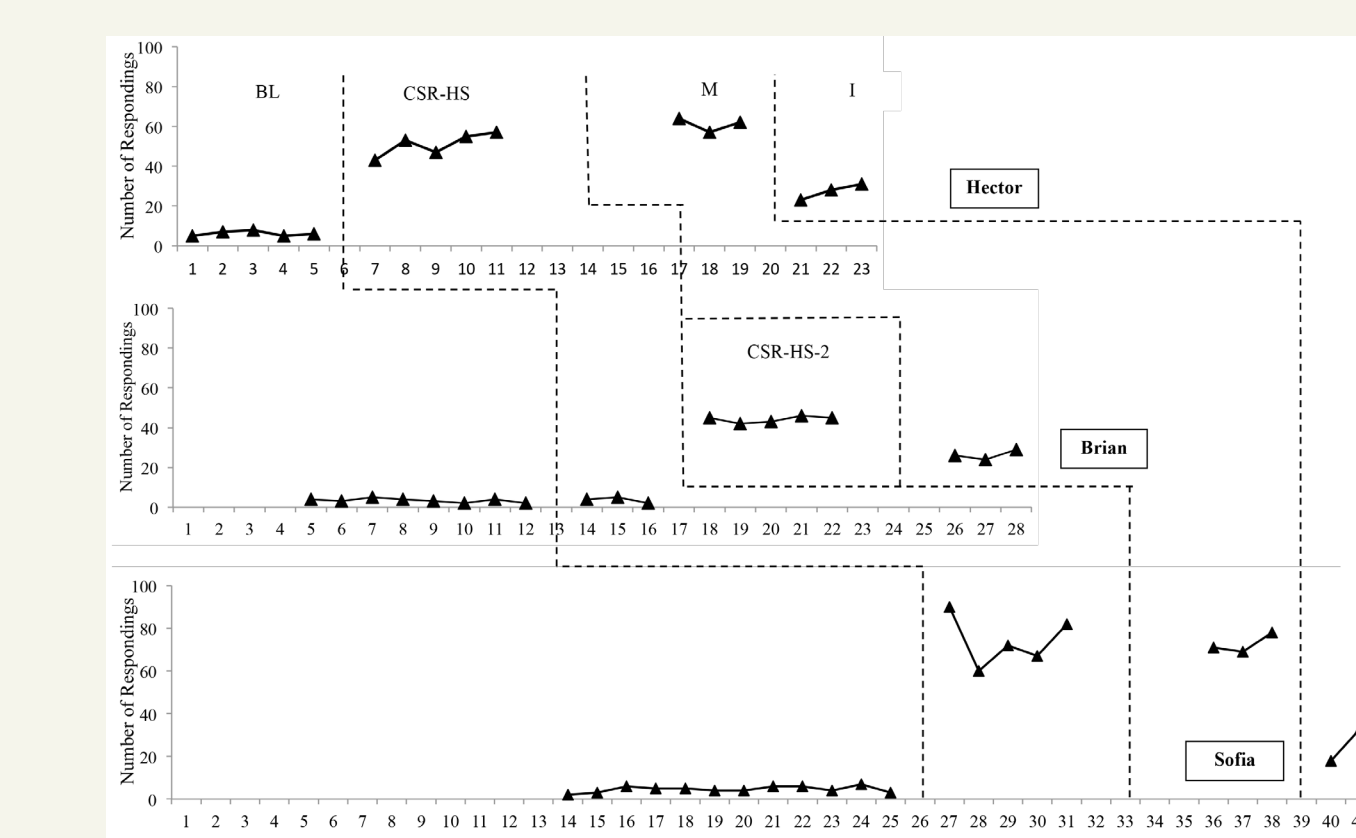
OCCURRENCES OF CHALLENGING BEHAVIOR



FREQUENCY OF SOCIAL INTERACTIONS



FREQUENCY OF RESPONDING



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.