COMPREHENSION LITERACY INTERVENTION FOR ELEMENTARY STUDENTS
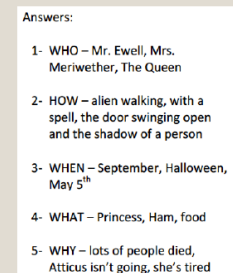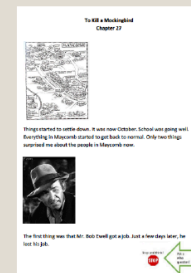
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Background

- More likely to have access to the general education curriculum when in a general education classroom (e.g., Wehmeyer, Lattin Lapp-Rincker & Agran 2003; Bowder et al., 2008 Browder et al. 2006;)
- About half of students with Intellectual Disability (ID) and multiple disabilities have access to a general education classroom more than 40% of the day (Office of Special Education Programs [OSEP], 2016)
- Students with significant disabilities who have access to the general curriculum display:
  - Greater academic and socioemotional outcomes (Ryndak et al., 2010)
  - Less challenging behavior (Lee, Wehmeyer, Soukup, & Palmer, 2010)
- Less than 25% of students with an ID will acquire "minimal literacy" skills (Katims, 2001)

Previous work

- *Ask Yourself* strategy (Ruppar, Knight, McQueston & Jeglum underreview)
- Positive academic and social impact
- 4 high school students with significant disabilities

Literacy Strategies

Adapted Texts (Apitz et al., 2017; Hudson & Browder, 2014; Hudson et al., 2013; Spooner et al., 2009)
- Texts at adjusted levels
- Summaries of book chapters
- Texts with eliminated pages
- Key words paired with pictures
- Repeated lines to emphasize main points
- Texts with embedded pictures or objects

○ **Shared Reading**
- Interactive reading experience that occurs when students share the reading of a text while guided and supported by a teacher
- May utilize adapted texts
- Improves text comprehension of students with significant disabilities (Hudson & Test, 2011)
- Increase comprehension scores (Mims et al., 2009; Mucchetti, 2013)

Literacy

◦ Answering comprehension questions is **not** a reading strategy
◦ Proficient readers stop and ask questions while they are reading
◦ Self-questioning
  ◦ Increased comprehension of text for all students (Rouse, Aber-Morgan, Cullen, & Sawyer, 2014), students with learning disabilities (Mastropieri & Scruggs, 1997), and students with significant disabilities (Wood et. al., 2005)
  ◦ Wood et al. (2005) was the only study with elementary students
    ◦ Social studies texts
    ◦ Special education classroom

Research Questions

◦ 1: Is there a functional relationship between the use of the *Ask Yourself* strategy and correctly asking *wh-* questions?

◦ 2: Is there a functional relationship between the use of the *Ask Yourself* strategy and correctly answering *wh-* questions?

Research Design

◦ Multiple baseline across behaviors

◦ Inclusion criterion:
  ◦ Diagnosis of autism, intellectual disability, or developmental disability
  ◦ Literacy instruction in an elementary school general education class
  ◦ Eligibility for the alternate assessment
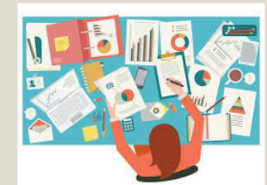
Jared

- 2nd grader
- Diagnosis of autism
- Hindi and English at home
- Included with general education peers for more than 80% of his day
- Communication
  - One-to-two word phrases
  - Proloquo2go
  - PECS
  - Limited amount of basic sign language

- Behavior
  - Needed redirection every few seconds during an academic task
  - Utilized sensory breaks after 2-3 tasks
  - 1:1 paraprofessional
  - Tore materials (especially books)

- Academics
  - Engaged in parallel tasks
  - Read level B texts (beginning-to-middle kindergarten level) for one week
  - Answered who and what questions
  - 1;1 instruction from the special education teacher
 - Able to answer questions with two choices

Setting

- General education classroom (18 sessions)
  - 19 students
  - Special education teacher in the classroom
  - Literacy intervention block
    - Other students were engaged with literacy tasks
    - Some times not literacy tasks (e.g., War) or very loud
- Special education classroom (6 sessions)

Materials

- Texts – Level D (end-of-kindergarten to beginning-first-grade reading level)
  - 20 of 24 from Reading A to Z

- Flags
  - Color coded
  - Embedded within the text

- Worksheets (Questions and Answers)
  - Color coded
  - Used pictures from the text, but not the same page
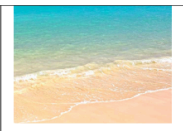 - Who, what, and where questions
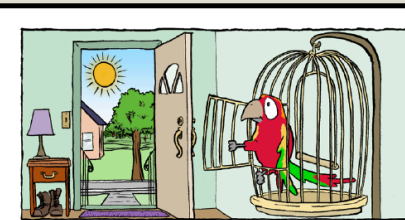
Polly got out of her cage.
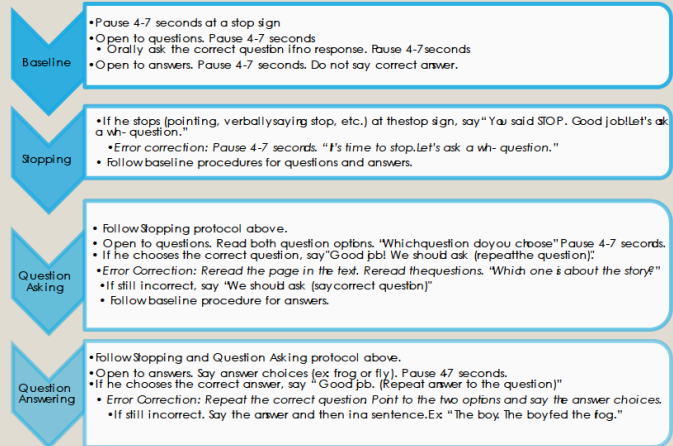She flew out the door.

Polly Gets Out • Level D   STOP   3

Where is the watermelon?

Where did Polly fly?

| Out the door | Into the ocean |

Slide 1 (top-left)

Baseline
- Pause 4-7 seconds at a stop sign
- Open to questions. Pause 4-7 seconds
- Orally ask the correct question if no response. Pause 4-7 seconds
- Open to answers. Pause 4-7 seconds. Do not say correct answer.

Stopping
- If he stops (pointing, verbally saying stop, etc.) at the stop sign, say "You said STOP. Good job! Let's ask a wh- question."
  - *Error correction: Pause 4-7 seconds. "It's time to stop. Let's ask a wh- question."*
- Follow baseline procedures for questions and answers.

Question Asking
- Follow Stopping protocol above.
- Open to questions. Read both question options. "Which question do you choose?" Pause 4-7 seconds.
- If he chooses the correct question, say "Good job! We should ask (repeat the question)."
- *Error Correction: Reread the page in the text. Reread the questions. "Which one is about the story?"*
- If still incorrect, say "We should ask (say correct question)"
- Follow baseline procedure for answers.

Question Answering
- Follow Stopping and Question Asking protocol above.
- Open to answers. Say answer choices (ex frog or fly). Pause 4-7 seconds.
- If he chooses the correct answer, say "Good job. (Repeat answer to the question)"
- *Error Correction: Repeat the correct question. Point to the two options and say the answer choices.*
- If still incorrect. Say the answer and then in a sentence. Ex "The boy. The boy fed the fog."
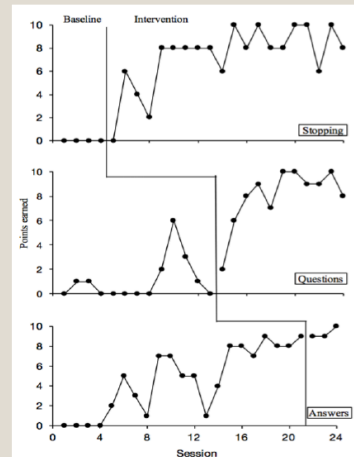
Slide 2 (top-right)

Results

Procedural fidelity
- Collected for 37.5% of sessions (9 of the 24 sessions)
- 99.4%

IOA
- Collected for 37.5% of sessions (9 of the 24 sessions)
- 100% agreement

Slide 3 (bottom-left)

Social Validity

- Special education teacher
  - "Blown away" with Jared's success with the increased academic demands.
  - Try different question stems, such as when and why
  - Continue the intervention (decrease to new text twice per week)
  - Increased difficulty of annual IEP goal
  - Developed a plan to have Jared walk in the hall independently
- Parents
  - Nervous with the increased demands, but agreed to continue
  - Could not believe teacher report
  - Watched video of Jared reading

- Jared
  - Increased engagement
    - Fewer signs of aggression towards texts (i.e., attempting to tear pages)
    - Less redirections
  - Read higher level texts
    - Show his true comprehension abilities
  - Communication
    - Verbally said "stop" on several occasions
    - Answered the question before being presented the answer pictures at times
  - Increased level of independence
    - Turning the pages, following the text with his finger, and maintaining focus on the task
  - Generalized to other settings and tasks

Slide 4 (bottom-right)

Questions	Pre	Post	
	Participant 1	Participant 1	Participant 2
I think that increasing engagement in reading is/was an important goal for my child/student.	5	4	5
I think that asking wh- questions during reading is/was an important goal for my child/student.	4	4	5
I think that answering wh- questions during reading is/was an important goal for my child/student.	5	5	4
I think that adapting grade-level text is/was an appropriate way to include my child/student in the general education curriculum.	4	4	4
I think the shared reading strategy is/was an appropriate way for my child/student to engage in literacy.	4	4	4
I think that the comprehension teaching strategy will help/has helped my child/student increase his engagement in reading.	4	4	4
I think that the comprehension teaching strategy will help/has helped this student learn to ask and answer wh- questions.	4	4	4

Next steps

- Multiple probe design
- 4 Students
  ◦ Inclusive Setting
  ◦ Students with extensive support needs/significant disabilities
  ◦ Culturally and linguistally diverse backgrounds
- Adding probes to measure participation during discussion groups
- Reading groups versus 1:1

Discussion

How do you measure and/or define participation in discussion groups for students who use AAC?

Discussion

How do you find and recruit participants who are in inclusive settings?

Discussion

If time: How do you balance pre-determined messages, answers, and comments versus independent responses in a discussion group where the topic can be unpredictable?