Helping Students With Moderate and Severe Intellectual Disability Access Grade-Level Text

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Teaching students with moderate and severe intellectual disability who are early readers or nonreaders to engage with grade-level text is challenging. How can teachers promote text accessibility and teach text comprehension? This article describes research-based strategies educators can use to adapt grade-level text and teach text comprehension for students with moderate and severe intellectual disability who are early readers or nonreaders. These approaches can support teachers in developing materials and instruction to promote student interaction with grade-level text.

One of the challenges in teaching language arts to students who are just beginning to read or who are nonreaders is creating access to grade-level text. Even when text is read aloud with the assistance of technology or a reading partner, the text may be too complex for the student’s level of receptive communication. To help address this challenge, Erickson and Koppenhaver (1995) suggested making literacy an interactive process by reading a book aloud with frequent opportunities for the student to interact with the text (i.e., shared story reading). In a recent comprehensive review of experimental research, Hudson and Test (2011) found shared story reading—when a partner reads the text aloud and provides opportunities for the listener to interact with the text and demonstrate comprehension—to be an effective way to make text accessible.

There is also research evidence for using text adapted from the grade level for these interactive read-alouds. Browder, Trela, and Jimenez (2007) adapted literature from the upper grades as part of a treatment package in which teachers followed a task analysis to conduct an age-appropriate read-aloud. Adaptations included summarizing novels in brief passages, pairing keywords with picture symbols, and adding a repeated story line that emphasized the main idea of the story. Students increased both their engagement with the text and comprehension responses. Mims, Hudson, and Browder (2012) also found that middle school students with moderate intellectual disability learned to answer comprehension questions about biographies adapted from grade-level literature (i.e., summary of original text and some picture symbol support). The intervention also incorporated a prompt hierarchy to help students locate the correct answer, beginning with re-reading smaller portions of the text that contained the answer. Mims, Browder, Baker, Lee, and Spooner (2009) demonstrated how students with severe intellectual disability who were legally blind could learn to answer comprehension questions by using objects affixed to each page of the book. Their intervention also used a system of least intrusive prompting to help students locate the correct object to answer literal recall questions. Hudson, Browder, and Jimenez (in press) continued to build on this adapted text methodology by having typically developing peers read text summaries and use the system of least intrusive prompting in a general education class. All of the participants with moderate intellectual disability increased their comprehension responses.

All of these studies (a) used adapted versions of the text (e.g., shortened,
augmented with pictures and repeated story lines), (b) gave students response options (i.e., pictures or objects), and (c) used a system of least intrusive prompting that included re-reading key portions of the text. Teachers can apply these findings to support their own adaptation of grade-level text, increasing access to the curriculum for students with moderate and severe intellectual disability.

**Strategies for Adapting the Text**

**Shorten the Text**

The simplest adaptation is to shorten the text and divide it into segments for oral reading. In selecting a shorter passage, consider the student’s attention span for a read-aloud which may be as short as a few minutes or as long as most of a class period. For some printed material, abbreviating the content is the only adaptation needed. For instance, a long narrative poem (e.g., Longfellow’s *Paul Revere’s Ride*) might be taught using selected stanzas, or a children’s picture book might be shortened by omitting pages or paragraphs. When deciding what text to omit, teachers should consult with a content expert (e.g., literacy consultant).

**Augment the Text**

Some books will not require any changes to the text itself, but may need augmentations to increase accessibility. Text augmentations can include adding pictures, repetitions of the main idea (e.g., repeated story lines), and including objects to build comprehension. Pictures can be used to augment text by adding simple illustrations at the beginning of chapter summaries or by adding picture symbols paired with keywords in the text. Be cautious when adding pictures or picture symbols to text for students learning to read independently, however, as they may focus on the pictures instead of the words.

For students relying on a partner to read the text aloud, pictures or picture symbols added to the text may help students track the text and build comprehension.

Adding a repeated story line is another way to augment text. Repeated story lines are often used in preschool picture books to help young students build understanding. The same method can be made age-appropriate by using the main idea of the story or chapter as the repeated story line. For example, in the first chapter of *Charlotte’s Web* (White, 1952), the repeated line might be “Wilbur was special.” Reading this line at the end of each page can help students build understanding. See Figure 1 for another example.

Another augmentation that can benefit some students who are just learning to interact with text or students with visual impairments is to affix actual objects to the pages of the book. For example, in a story about a baseball team, a small ball might be affixed to the page where the topic is first introduced. When the story describes getting to first base, a small sandbag base might be used. Augmentations may also include adding other sensory experiences to prime or support understanding—such as an attention getter at the beginning of the story (e.g., touching sand for a story about the beach) or a surprise during the read-aloud (e.g., the lights go off in the classroom when it gets dark in the story).

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**Rewrite the Text as a Summary**

Text can also be adapted by rewriting the original text as a summary. Writing text summaries involves three steps.

1. **Reduce the number of words in the text** by prioritizing information. This can be done in collaboration with the general education teacher or other content expert (e.g., curriculum specialist) so that the text summary contains the most important information to be learned and that the information is accurate.

2. **Add definitions and explanations** for important unfamiliar words. As text grows more complex across the grade bands (e.g., increased use of dialect, dialogue, technical words), more words in the text may be unfamiliar to students. Adding definitions and explanations helps students make meaning of the most important unfamiliar words. For example, in adapting the novel *A Wrinkle in Time* (L’Engle, 1962), a description of an ant crawling across a wrinkle on a skirt was added to explain tessering, an unfamiliar but important word in the story.

3. **Write summaries at a reduced Lexile level.** A Lexile measure indicates a text’s complexity and includes sentence length and word frequency. Summaries can vary in complexity depending on the grade band, original text, and purpose of the text (e.g., read-aloud or independent reading; see Figures 2, 3, and 4). Browder et al., 2007 used a Lexile level between 400L and 600L (which span Grades 2–4; see http://lexile.com) for read-alouds. In contrast, when adapting text for independent readers, a lower Lexile level may be needed (e.g., 200L–300L). The Lexile Framework for Reading website (http://lexile.com) has a free tool to help teachers determine the Lexile measure of adapted text.

**Use Predictable Structure**

Using predictable structure in adapted text helps students find the information they need to answer questions about the text. At early grades, this may include placing the author and illustrator’s names in the same location on the front page and the repeated story line in the same place in the text (e.g., at the bottom of the page). For older students, predictable text structure can include stating the main idea in the first sentence of the first paragraph and adding signal words (e.g., first, next, last) to help students complete a
graphic organizer about the main facts or story elements (see Figures 3 and 5 for examples).

The amount of text presented on a page can also be changed to promote accessibility. For example, when adapting text for Grades K to 2, limit print to one or two sentences on a page. In contrast, for Grades 3 to 5 (see Figure 3), text may be limited to one or two paragraphs on a page. This can be expanded to two or more paragraphs on a page for students in middle grades and high school.

**Provide Options for Students to Demonstrate Comprehension**

Response options can be individualized to meet the student’s understanding of symbols. For example, response options for students just beginning to understand symbols may be objects from the story. For students who have some understanding of symbols, response options may be pictures of objects or picture symbols paired with words. For students who have a good understanding of symbols, response options may be printed words. For students with intellectual disability who use some form of augmentative communication system, teachers may want to develop response options for

**Comprehension Questions**

1. When did Owl go down to the seashore? (One night)
2. Where did Owl sit? (On a rock)
3. What did Owl see? (The moon)
4. Why did Owl think the moon could see him? (Because Owl could see the moon)
5. Do you think Owl and moon are friends? Why?

**Augmentations**

Poems such as *Owl at Home* (Lobel, 1975) often need no changes to the text. Augmentations to the text, however, can help beginning readers and nonreaders. This poem is augmented in two ways. First, key words are paired with picture symbols to help students text-point as the teacher reads the poem. Second, a repeated storyline emphasizing the main idea of the poem is added after each stanza. Both beginning readers and nonreaders can anticipate the repeated story line. Nonverbal students can read the repeated story line by activating a prerecorded repeated story line on an augmentative communication device (e.g., big Mac switch) when it is their turn to read.
Figure 2. Grades 2 to 3 Example (Narrative)

Charlotte’s Web (White, 1952)
From Chapter 1.

Teacher reads the story

Student reads the repeated story line

Adapted Text and Augmentations
In this example, text is summarized and a definition for an unfamiliar word (e.g., runt) is added. Vocabulary words are paired with picture symbols to help students follow along as the teacher reads the story aloud. Vocabulary words can also be introduced at the beginning of the read-aloud to help build comprehension.

Predictable structure
One paragraph of adapted text is placed on a page and a repeated storyline is added in a predictable place at the end of the page.

Comprehension Questions
1. Where was Papa going? (Barn)
2. What was born in the barn? (A runt; a little pig; Wilbur)
3. Why was Fern happy? (Got to keep the pig; pig lived; papa didn’t kill the pig)
4. Why was Papa going to kill the pig? (It was small; it was trouble)
5. How did Fern feel about saving the pig? (Happy)

Another way to increase complexity is to include response options that are plausible but not correct.

These students that can be used with their augmentative and alternative communication (AAC) devices (e.g., Go-Talk 9).

The number of response options presented to students can be individualized, too. For students who are just beginning to answer comprehension questions, perhaps first provide two response options for the student to select from—one correct option and one not plausible—and build from there. As students gain skills in answering comprehension questions, add more response options. In addition to increasing the number of response options for students to select from, another way to increase complexity is to include response options that are plausible but not correct. For example, if teaching The Watsons Go to Birmingham—1963 (Curtis, 1995), two response options for the question “What did Byron kiss?” are the mirror and his mother. Both are plausible and could be correct, but only one is correct according to the text (i.e., mirror). This example also highlights the importance of creating comprehension questions that are textually dependent. Text-dependent questions require the student to read or hear the text read to be able to select the correct response.
Before creating response options, consider the types of comprehension questions to be asked. Questions might focus on specific standards in the Common Core State Standards (http://www.corestandards.org); students may identify story elements, use supporting details in answering questions, or identify theme or author’s purpose.

A question template can be useful for generating comprehension questions:

- Who [verbed] the noun?
- Where do/did [main character] [verb]?
- When do/did [event] take place?
- What did [character] [verb]?
- Why did [action from the story]?

Adapted Text and Augmentations
The original text is summarized at a 280 Lexile level for independent reading. A repeated story line at the bottom of the page emphasizes the main idea of the chapter. Key words can be paired with picture symbols or the text can be read aloud as needed.

Predictable Structure
Two paragraphs appear on each page and a repeated story line is placed at the bottom of the page.

Graphic Organizer
A graphic organizer can help both beginning readers and nonreaders organize information from the story. Pictures or words paired with picture symbols can be used to complete the graphic organizer when students do not write independently. The author’s use of the water cycle to describe change is a good opportunity to incorporate a water cycle graphic organizer from science to illustrate the idea.

Use A Prompt Hierarchy to Teach Comprehension
System of Least Prompts
The system of least prompts is a response-prompting procedure commonly used to teach students with disabilities (see Wolery, Ault, & Doyle, 1992). Rather than relying on a single
Figure 4. Grade 4 Example (Nonfiction Text)

Harcourt Horizons North Carolina
(Henson & Berson, 2003)
“From a Colony to a State” (Chapter 3)

Page 1 - Important battles were fought in North Carolina. One was the battle at Moores Creek Bridge. The battle was between the Patriots and the British. (Who fought at Moores Creek Bridge? Patriots and British)

Page 2 - The Patriots were smart. Before the battle, they took some wooden boards out of the bridge. Then they greased it with soap and animal fat. When the British crossed the bridge, they fell into the water. (Why did soldiers fall off the bridge? The bridge was slippery)

Page 3 - After the war, they built a new capital. They named the new capital Raleigh for Sir Walter Raleigh. Sir Walter Raleigh was the founder of the first colony on Roanoke Island. (Where was the new capital built? Raleigh)

Page 4 - North Carolina grew slowly. Farmers only grew the crops they needed to live. Few farmers raised crops to sell for cash. Selling crops was dangerous and expensive because the roads were bad. (What happened after the war? North Carolina grew slowly)

Page 5 - Two things helped North Carolina grow. One was new roads. The state built plank roads out of wood because wood was cheap. To travel on the roads, people had to pay money, called a toll. (What kind of roads were built? plank, toll)

Page 6 - The railroad also helped North Carolina grow. The railroad connected the towns of Charlotte, Salisbury, and Greensboro with Raleigh and Goldsboro. The railroad made traveling easier. Many people moved to these towns. The towns grew into big cities. (Why was the railroad important? Made traveling easier; helped cities grow)

Adaptations and Augmentations

This chapter from a Grade 4 social studies text is shortened to 196 words and rewritten at a 550 Lexile level. Captions added to pictures, illustrations, and maps support comprehension of text.

Graphic Organizers

Graphic organizers can help students organize information from the text. Students can fill in the information during reading or after reading.

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prompt, the system uses a hierarchy of prompts that differ in the amount of support or information provided to the learner and gives the interventionist the opportunity to use each prompt of the hierarchy during each instructional trial. Typically the system of least prompts has been used to provide increasing levels of assistance for a student to make a motor response (e.g., completing the steps for making a sandwich, selecting the correct response card from an array); however, it is also useful for teaching comprehension during read-alouds. Prompts can include opportunities to hear selected text again (Mims et al., 2009) and rules for answering wh-word questions (Mims et al., 2012).

Think-Alouds

Think-alouds can be used in the system of least prompts to help students answer inferential questions. In a study using read-alouds of adapted science chapters, Hudson et al. (in press) included think-alouds as the prompt hierarchy. Students were first asked to relate to their personal experience (e.g., “How do you feel when [event]...
The Grapes of Wrath (Steinbeck, 1939)

The man stood at the door. “Can we buy some bread?”
Mae said, “We sell sandwiches, not bread.”
The man said, “We are hungry and only have money for bread.”
Al yelled, “Give them the bread.”
Mae did not want to but she opened the door.
The man and two boys came in. The boys looked alike. They were dirty.
Their clothes were thin.
Mae got a loaf of bread. “This is 15 cents.”
“How can you cut off 10-cents’ worth?” said the man. “We have to make our money last to California.”
Al yelled again, “Give them the bread.”
Mae gave the bread to the man.
The man saw the boys staring at the peppermint candy. “Is they penny candy?” he asked.
Mae said, “No. Them’s two for a penny.”
The man laid the money on the counter. Mae gave each boy a candy stick.

Comprehension Questions
1. What did the man want to buy? (Bread)
2. Why was this a problem for Mae? (She sold sandwiches; they might run out of bread)
3. Why did the man only want to buy 10 cents worth of bread? (They were poor)
4. What were the boys looking at? (Peppermint candy)
5. Why did the man buy the candy? (Loved the boys; to surprise them; to make them happy)
6. Why are the boys dirty? (Worked in the field; traveling; no place to wash)

Grapes of Wrath (Steinbeck, 1939; Figure 6), perhaps ask a question about why the boys are dirty. The answer is not directly stated in the text; however, the picture at the beginning of the chapter provides students important information. Teachers could ask students what they see in the picture (e.g., boys working in the field) and how this information might help explain why the boys were dirty (e.g., you get dirty working in the field; the boys have no place to get clean clothes or wash). Figures 5 and 6 present examples of think-alouds to assist students in answering inferential ques-
Adapting Text for Jacob and Carol

Mr. Bryce, a fifth-grade general education teacher, is planning to teach the novel The Watsons Go to Birmingham—1963 (Curtis, 1995). Mrs. Leigh, the special education teacher, noted that the book was 15 chapters long, written at a 5.5 grade reading level, and had a 1000 Lexile level. One of her students, Jacob, was a nonreader but could participate in read-alouds for about 10 minutes; for him, she created chapter summaries that were an average of 240 words long and between 500L and 600L (see Figure 5). She used a question template to create comprehension questions for each chapter. To support Jacob’s receptive responding, she created response option cards pairing words or phrases with a picture symbol. She decided to give him three response cards to select from when answering comprehension questions. In the array, one response would be correct, one plausible but incorrect, and one not plausible. She also implemented the system of least intrusive prompts: (a) stating a rule for answering wh- word questions (e.g., When you hear who, listen for a person) and reading the text again, (b) reading the sentence with the correct answer again, (c) telling the correct answer, and (d) telling and showing the correct answer. After the first week, she planned to teach a peer in Jacob’s fifth-grade class to do the read-aloud and follow the prompts to help him answer the comprehension questions.

Another student of Mrs. Leigh’s, Carol, had severe intellectual disability and was legally blind. Carol could participate in a 5-minute read-aloud if given objects as referents. For Carol, Mrs. Leigh split the adapted chapters in half and added everyday objects that went with the story and could be used to answer comprehension questions about the story. For example, when reading aloud about Kenny’s brother Byron getting his lips stuck on the car mirror when he kissed it, a mirror was the object. When asking Carol what Byron kissed, she would give Carol two objects to select from: the mirror and a glove (a distractor object). She also planned to use least intrusive prompts for Carol, and when reading the text again, she would help Carol read with her by touching the objects being used as referents for the story.

Final Thoughts

Students with moderate and severe intellectual disability who are early readers or nonreaders need to have access to grade-level text. When necessary, text augmentations (e.g., adding a repeated story line for the main idea) and adaptations (e.g., text summaries) can help students gain meaning from the text they read independently or hear read aloud. The examples provided here are intended to assist teachers in applying current research through a practical approach. Adapting grade-level text, creating response options to match the text, and using the system of least prompts to teach comprehension of text during read-alouds can support students with intellectual disability in learning to read and comprehending text.

References


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