Co-Constructing Meaning: Tools to Help Adolescent Readers Make Sense of Informational Texts

Gwen Pauloski, M.Ed.
East Early College High School

Abstract

In a recent classroom-based action research study, the author’s adolescent students deepened their informational text comprehension skills over the course of several interactive, strategic shared text studies. As suggested by research and theory, her students appeared to observe and appropriate cognitive, executive, and discourse strategies as they worked together with their teacher and the text. Though teachers may find it challenging to lead explicit strategy instruction while facilitating the shared study of a mentor text, the benefits to adolescent readers can be substantial. The teacher plays a central role in leading strategic text studies (Garas-York & Almasi, 2017), from choosing the right text and strategic focuses to facilitating whole-class, team, and independent text-centered experiences. The author makes suggestions for leading shared text studies that can be adapted to each teacher’s context.

Keywords: Adolescent Literacy, Secondary Literacy, Informational Texts, Struggling Readers, Comprehension

I have served in secondary public education for 27 years as a classroom teacher, professional developer, and administrator. In these roles, I have worked to build my understanding of adolescent reading comprehension and my ability to support secondary students’ development of comprehension skills. Over the past two years, I conducted action research in my seventh-grade English Language Arts (ELA) classroom to gain insight into my evolving practice as a reading teacher and my middle school students’ development as readers.

My first action research study—focused on a whole-class exploration of a complex short story—confirmed that frequent text-centered interactions were a driving force of our shared text study. I came to understand that in a co-constructive reading experience, the teacher plays an essential role as a knowledgeable other—a lead meaning-maker who can model how to approach constructing meaning of a text in collaboration with others (Garas-York & Almasi, 2017). The importance of the teacher’s role does not negate the value of students engaging together in purposeful text-centered conversations (Anderson et al., 2001; Baye, Inns, Lake, & Slavin, 2018). Finally, students can gain a great deal from their private “conversations” with the author by reading the text multiple times, using different lenses, and engaging in well-constructed reader response activities.

Having gained confidence in leading strategic literary studies, I next turned my attention to facilitating the strategic shared study of informational texts. In spring 2019, I used mixed methods to investigate teaching and learning in my classroom during 14 sessions devoted to three shared informational text studies. The research suggests that my adolescent students...
deepened their comprehension skills as they engaged routinely in interactive, strategic studies of informational texts as members of a meaning-making community (Reninger & Rehark, 2009). Even my struggling readers appeared to appropriate multiple strategies as they worked together with their teacher and the author to build a deeper understanding of each informational text (Langer, 2009). Even students with strong comprehension skills adapted and expanded those skills to fit more challenging texts and new reading purposes (International Reading Association [ILA], 2012; Moore, Bean, Birdyshaw, & Rycik, 1999).

Facilitating these studies is challenging (Croninger, Li, Cameron, & Murphy, 2017; Shulman, 1986). Luckily, I have found that pedagogical perfection is not required for students to make substantial progress, especially those who struggle most with informational text comprehension. I hope that teachers of adolescent readers will be inspired to take up or refine this practice as appropriate for their particular contexts.

### What’s at Stake

Adolescent students’ difficulty with comprehending informational texts is well-documented in the annual publication of standardized reading test results. In spring 2019, nearly 470,000 Texas high school students completed the state-administered English I examination, one of the State of Texas Assessments of Academic Readiness (STAAR). Fewer than half of the test takers met the state’s grade-level literacy standards. Among the 94,197 test-takers who had already failed the English I exam one or more times, a staggering 94 percent failed to meet grade-level literacy standards. On average, test-takers correctly answered 70 percent of questions testing their comprehension of informational passages. Among re-testers and vulnerable student populations, however, the average percent correct was significantly lower (Texas Education Agency, 2019). See Table 1 for more information.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Spring 2019 STAAR English I – Informational Reading Results for At-Risk Student Groups</th>
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<tr>
<td>Percent Questions Correct</td>
<td>Total</td>
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<tr>
<td>Reporting Category 3: Understanding/Analysis of Informational Texts</td>
<td>70%</td>
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Many college courses demand that students make sense of complex informational texts. Yet, one-third of Texas high school graduates who qualified for a free lunch in the National School Lunch Program failed to meet the “college-ready” threshold on the Texas Success Initiative (TSI) reading assessment (Texas Higher Education Coordinating Board, 2018). Mid-skill and high-skill professions demand competence in informational text comprehension as well. Finally, as Thomas Jefferson argued, a well-functioning democracy requires informational literacy (Jefferson, 1789, Jan. 8).

Some of the skills needed for the deep comprehension of informational texts are genre-specific (Duke & Martin, 2019; Fisher & Frey, 2019; Hebert, Bohaty, & Nelson, 2016). Thus, a literacy education that privileges literary fiction and non-fiction at the expense of expository texts may leave substantial gaps in students’ meaning-making skillset. Though it is important for students to deeply comprehend informational
texts as independent readers, it is also essential for them to consider and be shaped by other readers’ perspectives. Adults collaborate daily to make sense of informational text—in their workplaces, their places of worship, and online discussions (Duke & Martin, 2019).

**How Adolescent Readers Make Sense of Informational Texts**

My classroom research rests on a conceptual framework informed by Vygotsky’s theory of social constructivism, Barbara Rogoff’s theory of cognitive apprenticeship, and Walter Kintsch’s construction-integration model of text comprehension (Duke, Pearson, Strachan, & Billman, 2011; Kintsch, 2009; Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009; Rogoff, 1990). Because cognitive and metacognitive processes are invisible and often unconscious (Greenleaf, Schoenbach, Cziko, & Mueller, 2015), no one can claim with absolute certainty how a reader makes sense of texts. The metaphors of apprenticeship and mental model construction described below are consistent with theory, empirical research, and my practical experience as a classroom educator.

**Apprenticeship**

As members of reading communities, young children appear to observe, appropriate, and practice comprehension strategies in collaboration with knowledgeable others (their parents and teachers, their peers, and the authors of the texts they read) (Greenleaf et al., 2015; Rogoff, 1990). When students are supported in applying strategies successfully to make sense of a variety of texts, those strategies can evolve into skills that students draw upon without conscious effort or awareness (Almasi & Fullerton, 2012). Adolescent readers continue to need instruction to improve their comprehension skills (Boardman et al., 2008), just as a pianist who last played a Haydn minuet in her fourth-grade recital will be ill-equipped to tackle a Shostakovich sonata without substantial help and preparation.

**Mental Model Construction**

As they make sense of an informational text, skilled readers construct a mental model—a “strategic simplification of the full text”—that recodes the text for long-term storage (O’Reilly, Deane, & Sabatini, 2015, p. 6). Skilled readers appear to formulate the outlines of a mental text model as they familiarize themselves with the text. As they read, they seem to continually check new ideas and information against their “draft” model, elaborating and correcting the model to reflect their evolving understanding of the text (Kintsch, 2009; O’Reilly et al., 2015). As they work through a complex informational piece, skilled readers appear to formulate a cohesive, elaborated mental model of the whole text. On the other hand, a reader less successful at comprehension may treat each new segment or concept separately, formulating mini-models but never integrating them (Almasi & Fullerton, 2012).

In a sense, the reader and the author collaborate to co-construct a mental model. Skilled readers may try to discern the author’s intended meaning and purpose at the sentence-by-sentence and whole-text level. Simultaneously, they may unearth relevant background knowledge and personal connections to help them solidify and contextualize their mental model (Kintsch, 2009).

**A Mismatch between Student Needs and Instructional Practices**

In their academic careers, students (especially those attending higher-income schools) may be invited to participate in classroom discussions of literary works from *The Dot* to *Brave New World* (Applebee, Langer, Nystrand, & Gamoran, 2003; Madda, Griffin, Pearson, & Raphael, 2019). Even students who have had the luxury of engaging in fruitful literary discussions, however, typically have had fewer sustained meaning-making conversations about informational texts. Secondary teachers often ask their students to extract information from a textbook or the Internet to prepare for issues discussions and project presentations. Still, those students may not have regular opportunities to practice collaborative sense-making of the informational texts themselves.
Though most adolescent students can comprehend grade-level informational texts to some degree, their mental models might be thin, fleeting, or inaccurate. Secondary students may assume their informational text comprehension skills are sufficient, especially if they regularly “pass” state reading exams. Students may not have developed the executive skills required to monitor and repair their comprehension of a text or even to monitor and manage their attention during meaning construction. When our comprehension assessments stop at students’ word- and sentence-level understandings, teachers may not detect the weaknesses in our students’ textual models. Because the informational texts assigned in school often address unfamiliar topics outside students’ interest areas, adolescent readers and their teachers often attribute their poor comprehension to a lack of interest rather than insufficient skills (Ortlieb & Cheek, 2013).

The Skills Students Need to Make Sense of Informational Text

Active meaning constructors call upon cognitive, meta-cognitive, and discourse skills to make sense of informational texts (O’Reilly et al., 2015). When facing a particularly challenging text outside their prior knowledge base, skilled readers can become strategic, consciously choosing strategies that will facilitate their meaning-making (Almasi & Fullerton, 2012).

As I planned each of the three shared text studies in my most recent action research study, I identified the comprehension strategies that I intended to teach explicitly. During each text study, I re-assessed and adapted my strategic focus frequently in response to students’ needs. I de-emphasized several cognitive strategies I had planned to teach explicitly, including predicting and connecting, as I found my students relied too heavily on these generic skills. I spent more time than I had planned supporting students as they learned to annotate, infer exposition structure, and discern key ideas. Though I had intended to teach summarization explicitly, I focused instead on prerequisite strategies with which my students struggled. I dropped back further to scaffold foundational discourse and executive strategies that my students were not successfully activating, including focusing attention, noticing confusion, attending to others’ meanings, and taking up others’ ideas.

Cognitive Skills

In 2015, Educational Testing Service (ETS) researchers codified the complex “Build and Convey Knowledge” literacy practice. According to the researchers, readers engage in this meaning-making practice in iterative phases, first laying the foundation for understanding a text and then constructing, repairing, refining, consolidating, elaborating, and finally communicating their understanding of that text (O’Reilly et al., 2015). Some of the cognitive strategies readers activate in this literacy practice, such as visualizing and predicting, are emphasized year after year in instruction in multiple genres. Other strategies are specific to informational texts, such as inferring exposition structure and discerning key ideas and information (Duke & Martin, 2019). While some of these cognitive skills receive a great deal of attention in earlier grades, others receive much less explicit instruction.

Discourse Skills

Though discourse skills are often not taught explicitly in secondary classrooms, the intentional nurturing of these skills is essential for a safe, multivocal, meaning-making community (Reninger & Rehark, 2009). Researchers have found that when teachers ask open-ended questions and value students’ voices, skill-building discussions occur (Applebee et al., 2003). In whole-class and team discussions with facilitated discourse, students can begin to take up the strategies they see and hear others using and take their place as “knowledgeable other” in the class. The teacher’s leadership as a member of the classroom discourse is essential if students are to develop the discursive skills needed to truly consider others’ ideas (Reninger & Rehark, 2009). With practice, the discourse students have practiced with their peers and teacher can be appropriated for their private use as they
attend to the author’s voice and even ask questions of the author in their independent readings of the text (Rogoff, 1990)

**Executive Skills**

Cartwright (2015) described the executive skills that skilled readers activate to support their meaning construction. These skills include attentional control, inhibition of irrelevant information, self-monitoring, and the ability to discern a text’s organizational patterns.

In my work with secondary students, I have found that being able to assess and focus one’s attention on textual meaning-making is fundamental, but this executive skill is often not explicitly addressed. My students’ enjoyment and comprehension of texts tend to increase when I teach them to monitor and redirect their attention strategically.

During the study, as I attempted to help students take up their colleagues’ ideas during our discussions, I found that many had difficulty focusing on their peers’ meaning-making. In whole-class discussions and debriefs of team discussions, I realized students were not hearing their peers. I came to realize students were disengaging while waiting for their turn to speak. If they were not “on deck,” they were not tuned in. I began to teach students explicitly how they could become strategic (i.e., conscious and intentional) about this critical facility.

**Leading Shared Studies of Informational Texts**

Teachers seeking to implement strategic shared studies of informational texts may find guidance hard to come by. The suggestions outlined below arise from my classroom research and practice. They are also informed by my study of empirical research and my observations of other teachers’ instructional practices in my roles as a coach and administrator. I have used tentative language throughout to indicate that these recommendations arise from my context and must be adapted to fit each educator’s instructional situation and pedagogical perspective.

The **Teacher’s Central Role**

When scaffolding students’ orchestration of multiple strategies, the teacher will need to monitor students’ strategy application and drop back to shore up their declarative, procedural, and conditional understanding of the strategy. Explicitly providing the “what,” “why,” “how,” and “when” of a strategy is especially helpful for English Learners (Booth, Land, & Olson, 2007; Mayville, 2015). During class discussions, the teacher may discover spots in the text that were more problematic than expected. She will need to provide just-right support, inviting students to return to the text, modeling her thinking, and formulating questions that help students come to their own “Aha!” moments. The teacher must also help students to re-activate strategies that have atrophied and to become consciously aware of those skills that have long ago become unconscious and automatic.

**Choosing Mentor Texts**

When secondary students are fed a steady diet of controlled texts with prominent text features, simple sentences, defined vocabulary, and well-marked key ideas, they can lose the willingness and skill to power through complex meaning-making challenges. Adolescent readers grow from wrestling with challenging texts, but they need support to avoid frustration and surrender.

I have found that an ideal mentor text for a shared study is engaging, well written, and somewhat complex. I look for texts that are accessible with scaffolding for my most struggling readers while offering challenge and interest for my most agile meaning-makers. Ideally, the text’s syntax and diction will support discussion and imitation of the author’s craft. Mentor texts ideally will be relevant to students’ interests and will connect with other texts, themes, or topics they have been exploring. Assessment of text complexity should include the length of the piece, sentence length and structure, the amount of unfamiliar vocabulary, the presence of text features, and how explicitly or well ideas are organized throughout.
The teacher needs to read through the text carefully to formulate a robust, accurate mental model. This process includes discerning how the text’s exposition is structured. If text features are lacking, they can be added by the teacher or composed by students.

Because we work together as a meaning-making community, serving as knowledgeable others for each other, I do not provide multiple texts or versions of texts during a shared study. I do, however, plan carefully for supporting readers who will flounder without substantial help. For example, I often provide audio support for our first reading, either through a read-aloud or an audio recording that students can return to later. I chunk the text and create opportunities for multiple strategic readings for varied purposes.

Choosing a Strategic Focus

To best prepare students to read challenging informational texts, we help them to orchestrate a manageable number of interrelated strategies during a shared text study (Kamil et al., 2008). Each teacher must decide which cognitive, executive, and discourse strategies to teach explicitly during the study of a particular text. The teacher must also assess the current state of her students’ meaning-making skills and strategic knowledge so that she can make wise decisions about which strategies to teach explicitly and in what combinations. The texts chosen will lend themselves to different strategic focuses.

Planning and Adjusting

I found it useful to develop a plan for the four- to five-day shared text study, which became an advance organizer for students and a guide for my instruction. I adjusted my lesson plans daily based on my activity-by-activity, or even minute-by-minute, assessment of students’ success in taking up strategies and making sense of the text. I planned for pre-reading and post-reading experiences that I hoped would engage students and reinforce strategy development, but I did not implement all of them. I prepared for multiple readings of the text, with different purposes and different types of interaction.

Throughout these iterative text engagements, I planned to introduce and facilitate the practice of multiple comprehension strategies. As we engaged with the text, I kept close tabs on how students were making sense of the text and taking up strategies and added or removed scaffolding improvisationally. After releasing students to practicing in teams or independently, I would sometimes find it necessary to drop back for more explicit instruction of a strategy or discussion of a confusing point in the text.

Leading Whole-Class Instruction

Whole-class instruction is an essential ingredient in a shared text study. In this setting, the teacher can explain and model strategies while she informally assesses students’ strategic knowledge and textual understanding. Students can hear their colleagues’ thinking and practice dialogic discourse. To help build a meaning-making community, teachers must work to avoid traditional patterns taking hold, in which “target” students and the teacher dominate the discussion, and most others fall silent. Many teachers (including myself) are conditioned to this pattern by our own educational experiences, as are our students, so avoiding this habit requires practice, reflection, and feedback.

Strategy Explanation. To explain a comprehension strategy, the teacher activates or provides declarative (“what” and “why”), procedural (the “how”), and conditional (“when”) knowledge (Almasi & Fullerton, 2012). The teacher must decide how to assess, build, and reinforce students’ strategic knowledge. As is true for direct instruction of other concepts, one mode or incidence of explanation will not be enough. Anchor charts, guided notes, slide decks, and “cheat sheets” can help keep the information fresh and accessible for students (Almasi & Fullerton, 2012) and increase comprehensible input for English learners. Though students need procedural knowledge to take up sophisticated strategies successfully, the teacher should be careful not to emphasize form at the expense of function. Cognitive engagement should always be the principal test of how well students are using a strategy (Kamil et al., 2008).
Strategy Modeling. The teacher can model a cognitive strategy by conducting a think-aloud/do-aloud, examining an exemplar, or co-composing alongside students. This modeling is especially important for English Learners (Walqui, 2006). During the study, I took all these approaches to model the cognitive strategies that proved most challenging for our learning community (annotating, discerning key ideas, and recognizing exposition structure). Executive skills can also be modeled through the think-aloud/do-aloud approach. The teacher can demonstrate a discourse strategy with a willing student or team and in the careful facilitation of whole-class and team discussions.

Team Discussions

Students can benefit significantly from conversing with peers as they work to make sense of a text together (Duke, Pearson, Strachan, & Billman, 2011; Zhang, Anderson, & Nguyen-Jahiel, 2013). The teacher must scaffold these discussions, however, if they are to be productive. Otherwise, students can slide easily into arguments or frivolous conversations (Mercer, Wegerif, & Dawes, 1999). Heterogeneous, long-term teams have been integral to my teaching practice since the beginning. I strategically group students so that all students can experience “mutual scaffolding,” exploring their own and their peers’ thinking (Walqui, 2006). In the study, I found that students needed a great deal of facilitated practice, debriefing, and feedback before they routinely attended to and took up their peers’ ideas.

During the study, four team discussion tasks seem to have worked particularly well to keep students focused on the strategic co-construction of textual meaning. When I asked teams to discuss carefully crafted, open-ended, text-centered questions, they tended to stay focused on negotiating meaning. Posting the questions ahead of time, discussing each question and modeling potential responses, and making room for private thinking time are simple ways to provide extra support. Questions that called for students to evaluate or make personal connections seemed to invite the most enthusiastic discussions, but I had to monitor and sometimes redirect to ensure their conversation stayed anchored in the text. Teams also remained focused on meaning-making when I asked them to compare their individual process writing (such as annotations or graphic organizers). These comparisons allowed students to co-construct meaning, self-assess, and learn from each other’s strategy use. When asked to co-compose gist statements, whether in pairs or teams, students wrestled with wording together and returned to the text (sometimes after prompting) to check their thinking. Finally, when I called on team members to report out key discussion points, they were able to check their understanding of each other’s ideas.

Individual Text Engagement

Of course, students also need time to wrestle with texts alone. When we interweave these independent text-centered experiences with peer and whole-class discussion, students have a chance to take stock of their current mental models and try out ideas and approaches they have learned from others. I have found annotation, graphic organizers, and summary writing to be effective text-centered meaning-making tasks ideally suited for independent practice.

Through explanation, exemplar study, modeling, and feedback, I teach my students to annotate. The physicality of annotation helps readers to monitor and sustain their attention. Because annotation leaves a cognitive breadcrumb trail, it also helps the student and the teacher trace the student’s thinking later to assess strategy use and depth of understanding. The visual nature of the practice helps the student ask questions of the text, identify text evidence, and re-read strategically.

During the study, I asked students to complete teacher-designed graphic organizers independently to give them further practice with identifying key ideas and supporting evidence. They shared their completed graphic organizers the next day with a shoulder partner and compared their process writing. Finally, students composed summaries independently toward the
end of each shared text study. The act of summarizing allowed them to consolidate their understanding of the text and allowed me to assess their mental text models.

Final Thoughts

Strategic shared text studies will look different in each classroom, depending on the teacher’s pedagogical bent and the needs of his or her students. Certain principles, however, will serve teachers in many contexts.

- Choose a strong mentor text and a manageable suite of supportive cognitive, executive, and discourse strategies.
- Plan for pre-reading, multiple readings, and post-reading experiences.
- Build in frequent interactions among the teacher, students, and text.
- Adapt your approach as dictated by your ongoing assessment of students’ needs.
- Keep experimenting, reflecting, and planning, folding in lessons learned in subsequent studies.

Though it is undoubtedly challenging to orchestrate strategic instruction and a mentor text study simultaneously, students will surely appreciate the teacher’s effort to create an interactive community where students contribute actively to the co-construction of textual meaning.

References


