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Writing for Comprehension: How does Writing Influence Informational Reading Comprehension in the Elementary Classroom?

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Writing for Comprehension: How does Writing Influence Informational Reading Comprehension in the Elementary Classroom?

Cover Page Footnote

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Writing for Comprehension: How does Writing Influence Informational Reading Comprehension in the Elementary Classroom?

Today's elementary school teachers face the difficult task of teaching students how to comprehend complex informational texts, as reading and understanding these texts tend to be more difficult for students than typical story reading (McCormick & Zutell, 2015). Indeed, students are being asked to comprehend more and more informational texts, particularly in textbooks, online, and on standardized tests as they advance through school and into society (Schugar & Dreher, 2017). Further, the expectations outlined by the Common Core State Standards support the use of informational texts as the primary source of reading material used to present academic content across content areas (Roehling et al., 2017). Therefore, it is essential that students comprehend these texts. How can teachers help students use text features, identify important information, and understand informational text structures? The answer can likely be found by integrating reading and writing instruction.

Given the national focus on reading test scores (National Center for Education Statistics [NCES], n.d.), reading and writing may be taught as separate subjects, in isolation. However, when writing is integrated into explicit reading instruction, students begin to comprehend texts from the writer's perspective (Malloy et al., 2020). Literacy instruction that builds a strong relationship between the essential skills of writing and reading can help prepare students for future success as these tools support all learning (Fisher & Frey, 2013) According to Graham and Hebert, "the evidence is clear: writing can be a vehicle for improving reading" (2010, p. 6). Through an extensive informational writing unit, Tori provided third-grade students opportunities to research, read, plan, write, draft, collaborate, evaluate, reflect and produce

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tangible evidence of their learning to improve their reading comprehension skills. Tori planned and implemented this unit with Roya's support.

Reading and Writing: Considering Comprehension

With the addition of the Common Core State Standards and an emphasis on STEM in education, reading and writing about nonfiction texts has never been more important (Schugar & Dreher, 2017). Students may appear to read and comprehend informational text effortlessly; however, other students are frustrated by them, avoiding them probably because they lack skills and strategies to read and comprehend them effectively (Schugar & Dreher, 2017). Elementary school students in the United States performed statistically significantly lower on measures of informational reading than measures of literary reading on a recent international assessment (Schugar & Dreher, 2017). Before this study, 10 out of 18 students in Tori's third-grade class were considered proficient (on grade level) when reading and writing about an informational text. Students' proficiency levels were assessed by a district-mandated Benchmark reading assessment. The assessment was administered to individuals using leveled readers to determine students' instructional reading levels. During this assessment, students were asked to read both fiction and nonfiction texts and complete follow-up tasks, which included responding to oral comprehension questions, completing a retell, and writing responses to comprehension questions.

As a third-grade teacher, Tori wondered why most students struggled to comprehend informational texts. Tori wanted to provide students with opportunities to research an informational topic of their choice to demonstrate how reading and writing are connected as tools for learning. The goal was for the class average percent correct to be at least 80% on the district mandated benchmark reading assessment by the end of the study. This would indicate

proficiency when reading and writing about a grade level informational text after completing the unit.

Relevant Literature

Writing improves reading

When writing is integrated into explicit reading instruction, students begin to shift their thinking to comprehend expository texts from the writer's perspective (Graham & Hebert, 2010). Graham and Hebert (2010) suggest that writing in response to texts read improves comprehension. Their meta-analysis examined the effects of writing on reading. They included studies that compared treatment conditions in which students wrote about texts read using various writing activities such as summary writing, answering or generating written questions, note-taking, and extended writing activities to no-writing control conditions in which students read the same text and participated in non-writing activities such as rereading or oral discussion of text. Graham and Hebert (2010) concluded that writing about text was effective in improving reading comprehension, as measured by a variety of assessments. Therefore, when greater emphasis is placed on writing instruction and practices, the strength of the writing-to-reading connection is expected to increase (Graham & Hebert, 2010).

Reading improves writing

Reading and writing are extremely similar, but not identical (Graham et al., 2018). Reading and writing can be thought of as "two buckets drawing water from a common well" (Shanahan, 2016, p. 195). The two share several common knowledge sources such as domain knowledge, meta-knowledge about written language, procedural knowledge, and pragmatic knowledge of text attributes (Graham et al., 2018). Readers draw on domain knowledge to understand what they are reading, while writers draw on this same source for ideas as they write.

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Readers and writers draw on what they know about the functions and purposes of written language to help them interpret an author's message and to construct their own message for others to read. Additionally, readers use their procedural knowledge to question, predict, and summarize. Writers use this same knowledge to craft their messages. Pragmatic knowledge requires readers and writers to use text features, words, syntax, and usage to decode words and comprehend or construct sentences. When these knowledge sources are used to design reading instruction, students' understandings about functions and purposes of text may result in better writing, as it provides students with skills and strategies that they can use when writing and thinking with their audience in mind (Meyer et al., 2002).

Effective writing instruction

Effective writing instruction includes integrating reading skills and strategies, providing student choices in writing, the use of rubrics, and writer's workshop (Bradford et al., 2016; Duffy 2014; Kissel, 2017; Morabito, 2017; Wangsgard, 2010; Zumbrunn & Krause, 2012). We explore those topics in the following sections.

Student choice

Zumbrunn and Krause (2012) recommend that effective writing instruction encourages student motivation and engagement. Indeed, teachers can design writing tasks that provide students with opportunities to be in charge of the products they create, as well as the processes they use when writing. That promotes student motivation and engagement, as those kinds of tasks allow students to make personal choices and to take control of their learning in ways that build their autonomy and confidence (Zumbrunn & Krause, 2012). Writing for real audiences and authentic purposes provides students with opportunities to experience reasons to write beyond school, which demonstrates that writing is not just to fulfill a requirement for an

assignment (e.g., Scales, 2021). In addition to the need for authentic writing tasks for students, the classroom writing climate can motivate students to want to write (Graham, 2010). Graham (2010) emphasized the importance of the classroom context “to increase the chances that students see writing as an enjoyable activity. This includes ensuring that there is a nonthreatening environment where students write. This also includes providing students with meaningful choices” (p. 349).

Rubrics

Rubrics benefit students because they clarify the learning target, guide design and delivery of instruction, add accuracy and fairness to the assessment process, provide students with a tool for self-assessment, and allow students with academic challenges to identify effective characteristics that other students automatically realize (Bradford et al., 2016). Additionally, rubrics provide students with clear expectations for a high level of performance and the criteria for meeting those expectations. Not only do rubrics help assess student learning, but they can also help teachers monitor student growth (Bradford et al., 2016).

Writer’s Workshop

Teachers can support literacy learning by implementing writer’s workshop in their daily routines. Writer’s workshop includes whole class instruction, time for writing, and time for structured response (Morabito, 2017). Whole class instruction includes mini-lessons to teach specific skills, time for writing that provides students with the opportunity to engage in the writing process, and time for students to share their writing with others. These mini-lessons are often structured around explicit teacher modeling wherein teachers think aloud as they compose a piece of writing in front of students, to make the writing process visible and concrete, or implement shared writing where the teacher models how to write a specific kind of text while

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collaborating with students (Hamby, 2004; Kissel 2017). Most of the writing workshop should be devoted to time for students to write. During workshop, students confer with one another and with the teacher, which provides opportunities for students to share their work with a broader audience, as well as time for the teacher to “coach students in how to give and receive responses to each other’s writing” (Morabito, 2017, p. 470). Further, writer’s workshop can provide teachers with ways to help students study mentor texts and to see themselves as writers (Kissel, 2017). Students’ perceptions of themselves as writers are often formed by their teachers’ or peers’ responses to their writing (Kissel, 2017). Studying authors’ moves in mentor texts can help students gain insights into the reading process, while also promoting growth in their writing (Kissel, 2017).

Theoretical Framework

This study was informed by constructivism, a theory of learning that emphasizes active construction of knowledge by individuals (Gunning, 2010). Many scholars term constructivism as an epistemological view of knowledge acquisition that focuses on the acquisition of knowledge through interpretation, or constructing meaning, from experiences (Applefield et al., 2000). Constructivism is often used to conduct research that focuses on teaching, learning, and knowing. For example, constructivism allows researchers to ask questions that examine how humans construct learning (Fosnot, 2005) and how teachers’ views of learning guide their instructional decisions (Applefield et al., 2000). It is important to note that constructivism is a theory of learning and is even, at times, called a theory of knowing, but is not a theory of teaching (Kretchmar, 2019). Consequently, constructivism does not provide teachers with step-by-step instructions on how to teach, but rather provides a general framework that teachers can apply when working with students, designing instruction, and creating authentic learning

environments. Constructivism can also support researchers in investigating how teaching and learning practices, policies, and resources promote constructivist claims, how constructivist teaching fosters critical thinking, and how constructivist approaches to education create active and motivated learners (Mogashoa, 2014).

To create active and motivated learning, teachers must provide instruction within the Zone of Proximal Development (ZPD), defined as the "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). To provide instruction within their students' ZPD, teachers must scaffold or adjust their level of support to fit the current level of students' performance and provide opportunities for intersubjectivity, where students begin a task with different understandings but arrive at shared understandings by the end of the task (Vygotsky, 1978).

Methodology

This quantitative study was conducted through a school and university partnership. Tori had taken graduate level reading courses taught by Roya and wanted to implement university course concepts in the third-grade classroom. Given the close proximity of the school to the university, Tori and Roya frequently met to generate ideas, gather resources, and interpret data. In this quantitative study, we collected and analyzed data from an instructional unit that lasted for five weeks. This approach allowed us to identify how explicit writing instruction influenced third graders' reading comprehension. At the time of this study, Tori was a third-grade teacher with two years of teaching experience. Participants (10 identified as males, 8 identified as females) were students in Tori's third-grade class in a public school in the rural mountains of the

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southeastern United States. Tori graduated twice from the university where Roya and David taught, with a B.S.Ed. in Elementary Education and then with the M.A.Ed. in Elementary Education with a specialty in Literacy. As a lifelong learner, Tori contacted Roya and David about pursuing a small internal grant to support this research project while strengthening the school-university partnership.

An explanation of the unit of study follows, which is then followed by the detailed procedures for the quantitative data analysis.

Unit of Study

Tori's unit of study began with a pre-assessment where students responded to a baseline prompt: "Think of a topic that you are interested in or know a lot about. You will have thirty minutes to write an informational, or an "all about," text that teaches others interesting and important information about your topic. Write in a way that shows all that you know about informational writing." Next, Tori modeled the writing process and how to use a rubric through writer's workshop that used mentor texts to teach components of informational texts, such as how authors use various text features and text structures to help readers construct meaning. Students began to research topics of interest, identify text features and text structures while reading, and use text features and text structures in their own writing. A mid-point check-in was conducted on day 11 of the unit where students responded to the same baseline prompt from the beginning of the unit. After the mid-point check-in, Tori modeled how to identify author's purpose through informational text examples and mentor texts. Student began to identify author's purpose while reading and consider their purpose as authors when writing their own informative text. During this time, Tori held writing conferences with students. On day 22 of the unit, students created an informational writing piece such as a poster, article, or brochure using

supplied materials. Students presented their final writing pieces to first-grade students. During this time, Tori provided support and feedback to students using a rubric. The unit concluded with a post-assessment where students responded to the same baseline prompt that was used for the pre-assessment and mid-point check-in. See Appendix A for details about the Unit of Study.

To identify how explicit writing instruction can improve reading comprehension skills in the elementary classroom, teachers must begin their informational writing units with clear learning objectives (Roehling et al., 2017). The key concepts and learning objectives outline the skills Tori wanted students to demonstrate by the end of the unit. See Table 1 for key concepts and learning objectives. These key concepts are frequently taught as components of informational reading and writing (Fisher et al., 2008; Fisher & Frey, 2013; Morabito, 2017; Roehling et al., 2017). When reading informational texts, students need to use text features to locate information, identify text structures to make meaning, and consider author's point of view to distinguish their own (Common Core State Standards Initiative [CCSS], n.d.). When writing informational texts, students need to incorporate their understandings of text features, text structures, and author's purpose in their own writing as they introduce and develop their topic, use linking words to connect ideas, and provide a conclusion (Common Core State Standards Initiative [CCSS], n.d.).

Table 1

Student-friendly Descriptions of Key Concepts and Learning Objectives

Key Concept	Learning Objective
Text Features	Students will be able to use text features to locate information relevant to a given topic efficiently.
Text structures: Description, Compare and Contrast	<ul style="list-style-type: none">Students will be able to identify the structure of an informational text.

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Problem and Solution Cause and Effect Sequence	<ul style="list-style-type: none"> • Students will be able to identify the most important information in an informational text. • Students will be able to write their own informational text using a text structure.
Author's Purpose	Students will be able to distinguish their own point of view from that of the author of the text.
Writing Process	Students will be able to write routinely over extended time frames (time for research, reflection, and revision) for a range of discipline-specific tasks, purposes, and audiences.
Informational Writing	<p>Students will be able to write informative texts to examine a topic and convey ideas and information clearly by:</p> <ul style="list-style-type: none"> • Introducing a topic and grouping related information together; including illustrations when useful to aiding comprehension. • Developing the topic with facts, definitions, and details. • Using linking words to connect ideas within categories of information. • Providing a concluding statement or section.

Note. Standards were retrieved from Common Core State Standards Initiative (n.d.). *English Language Arts Standards.*

Tori began planning the writing unit by gathering resources for students, by considering how students would implement research-based comprehension strategies within the unit, and how those strategies might be reinforced through writing. The informational writing unit required students to write their own informative text that examined a topic and conveyed ideas and information clearly. The informational writing unit allowed third-graders to research their topics of interest to investigate facts, definitions, and details in relation to their topic that could later be used in their own writing. Students were required to ask and answer questions orally to

demonstrate understanding of a text, use text features to locate information, and use information gained from illustrations to demonstrate understanding of the text. Students also explored various text structures used in informational writing, as well as the different purposes authors might have for writing. Further, this translated to students writing as they considered questions their audience might have regarding their topic, which text features might best communicate information to their audience, and which text structures might be best suited for their topic and purpose for their own writing.

Instructional Strategies

After identifying the learning objectives and key concepts for the informational writing unit, Tori considered several research-based instructional strategies to help students improve their reading comprehension and meet the unit's learning objectives. The following instructional strategies were implemented applying a gradual release of responsibility.

Explicit modeling. The gradual release of responsibility begins with explicit instruction and releases responsibility to the students throughout the lesson for assuming ownership of the skill or strategy (Duffy, 2014; Stahl, 2013). This valuable learning was achieved by implementing writer's workshop, which included whole-class instruction, time for writing, and time for students to share their writing (Morabito, 2017). During whole class instruction, Tori used shared writing and several mentor texts to explicitly model how authors develop topics through the use of text structures, text features, and vocabulary for varied audiences and purposes. Modeling writing with students as they observe and participate provides an example of the thought processes a writer might experience (Hamby, 2004). For example, the mentor text *Flash, Crash, Rumble, and Roll* (Branley, 1999) was used during whole group instruction to help students understand how the author used the cause-and-effect text structure to develop the topic

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and relationship between lightning and thunderstorms. This mentor text was also used to explain how authors use diagrams to visually illustrate relationships and how vocabulary such as temperature and water vapor are included because they are essential understanding the relationship. After reading and discussing the mentor text, Tori collaborated with students in a shared writing activity that focused on using the cause-and-effect text structure to write a paragraph about thunderstorms. The paragraph also included text features and vocabulary to help develop the topic. See Appendix B for the anchor chart created by Tori for this lesson.

Providing explicit instruction and then using a gradual release of responsibility helps students develop conceptual knowledge and comprehend what they are reading (Duffy, 2014). Indeed, Duffy's (2014) mini-lesson format follows a sequence in which teachers state the objective, introduce lesson, state the secret to doing it, model thinking, and provide scaffolding to build students' understanding of the concept. See Table 2 for an example lesson from the unit using Duffy's (2014) mini-lesson format. This structure supported students, because the objective was clearly stated at the beginning of each reading lesson along with the purpose for every lesson. Tori provided explicit instruction while modeling the specific skill or strategy and provided students with time to practice the skill or strategy with assistance. The goal was to gradually release responsibility to help progress students from requiring explicit teaching and modeling of a skill or strategy to applying the skill or strategy with assistance to implementing the skill or strategy independently. Throughout the unit, Tori modeled thinking by reading and writing aloud, because it is important that students see teachers read and write to hear their inner voice (Zumbrunn & Krause, 2012).

Table 2

Example lesson using mini-lesson format

Lesson Example #1: Text Features:

Standard: RI.3.5: Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.

State objective/I can statement: I can use text features and search tools to locate information.

Lesson Introduction: Teacher will explain the importance of understanding the universe in which we inhabit. The teacher will connect learning to the real world by explaining the next several lessons will be focused on creating a publication persuading NASA to reconsider classifying Pluto as a dwarf planet. This statement will establish a purpose for reading. Next, the teacher will introduce the activity by saying something like, “Let’s see if we can find out more about the planet Pluto.” The teacher will explain that students will be reading a nonfiction text about Pluto.

Stating the secret to doing it: Teacher will explain that text features such as pictures, captions, titles, headings, and diagrams can help readers understand the text and find information.

Model thinking: The teacher will indicate each text feature (picture, caption, title, heading, diagram, and map) included in the Pluto text and explain how these features help readers gain information quickly about the topic.

Scaffolded assistance:

Level 1: The teacher will ask, “Why is Pluto considered a dwarf planet?”. Next, the teacher will model searching the text for a text feature that indicates why Pluto is considered a dwarf planet. The teacher will point out the heading “Dwarf Planet” and explain that this section of the text will mostly likely answer the question.

Level 2: The teacher will pose another question and say something like, “Now let’s look for another piece of information and see if any of the text features can help us locate the information.” The teacher will ask, “Is there life on Pluto?”. The teacher will model how to skim/scan the text for text features that may indicate life on Pluto. The teacher will explain that there was not a text feature that indicated information about life on Pluto, so further reading is needed.

Level 3: The teacher will have students work together in small groups to sort and identify text features using pre-made text feature cards. The teacher will have students tape their text feature card to the correlating text feature on the article. For example, the card labeled “caption” should be taped to a caption in the Pluto text. After completing the text feature sort, the teacher will have students answer the following question on an exit ticket: How does the map of the solar system help you understand Pluto’s location in space?

Assessment: The teacher will know this strategy was effective if students are able to identify how text features can help readers understand information within a text.

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Note. Adapted from: Duffy, G. (2014). *Explaining reading: A resource for explicit teaching of the common core standards*. Guilford Press.

Before, during, and after reading strategies. Before, during, and after (BDA) reading strategies allow students to read challenging informational texts more closely and with a purpose other than to answer questions (Wangsgard, 2010). Tori wanted students to make inferences, connections, and visualizations by using various reading strategies. Throughout the unit of study, BDA strategies were taught and applied in guided reading groups. Further, Tori wanted students to move beyond answering surface level questions to answering higher order thinking questions to assist students in applying information to real-life situations. Specific to writing, Tori wanted students to be more conscious of readers' monitoring, questioning, and re-predicting cycle so they could maximize understanding when writing their own informative texts. Throughout the unit of study, BDA strategies were taught and applied in guided reading groups. See Appendix C for an example small group lesson on BDA strategies adapted from Stahl's (2013) gradual release of responsibility planning form.

Before reading. Comprehension is an active mental cycle that begins when readers anticipate what they will read in a text (Duffy, 2014). Learning to make predictions before reading a text helps students build meaning and actively engage with the text rather than sitting back and waiting for meaning to come to them. Tori explicitly modeled how to make predictions prior to reading an informational text, while providing students with a clear purpose for reading the text. Prior research (e.g., Duffy, 2014; Spires et al., 2018; Wangsgard, 2010) posits students are more motivated to read challenging informational texts when they have been given a clear purpose for reading. After setting a purpose for reading and making predictions about the content of the text, Tori activated students' prior knowledge about the topic. Comprehension is a skill

that is based primarily on a student's prior knowledge (Duffy, 2014). When teachers activate prior knowledge about a topic, students can more easily make predictions and informational topics seems less daunting to students when connected to prior knowledge (Coppola & Woodard, 2018; Duffy, 2014).

During reading. The primary strategy used by readers as they read is a combination of three active reading skills: monitoring, questioning, and re-predicting (Duffy, 2014). When reading informational texts, readers must pay close attention to detail and anticipate that they may have to adjust or change their previously made prediction for the text to make sense. This process was explicitly modeled for students throughout the unit. Pre-planning thoughtful during reading questions to ask in whole class instruction allowed Tori to facilitate meaningful discussions and in-depth explanations. Duffy (2014) advocates for teachers to do this thoughtful planning because teachers may forget to provide explicit explanations of reading strategies in real-time.

After reading. Comprehension does not stop on the last page of a text. Tori explained to students that readers reflect on their reading. After reading an informational text, students need to reflect on their reading by asking themselves questions such as: What did I learn? What was the author's purpose for writing this text? What can I do with this information? Did I learn what I wanted to? After reading strategies provide students a way to summarize, reflect, and question what they have just read (Duffy, 2014). When students finish reading an informational text, this is the time to revisit their previously made predictions and modify them as needed. This process was also explicitly modeled in Tori's small group and whole group instruction.

Synthesizing. To combine information from various sources and draw conclusions, students must synthesize their learning. When reading several informational texts, students may

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feel overwhelmed with information; therefore, explicit modeling is needed to explain how to organize information clearly (Duffy, 2014). Students also need opportunities to apply this strategy with scaffolded assistance before applying the strategy on their own (Duffy, 2014).

When writing their final informational piece, Tori wanted students to apply synthesizing skills to combine information gathered from their research using various sources. The more experience students have with synthesizing information in their writing, the better they will be at synthesizing information they read (Duffy, 2014; Zumbrunn & Krause, 2012). See Table 3 for an example lesson on synthesizing using Duffy's (2014) mini-lesson format that was used within the unit of study.

Table 3*Example lesson of synthesizing strategies*

<p>Lesson Example #2: Synthesizing: RI.3.9 Standard RI.3.9: Compare and contrast the most important points and key details presented in two texts on the same topic. (Synthesizing)</p> <p>State objective/I can statement: I can compare and contrast the most important points and key details from two texts on the same topic to synthesize information.</p>
<p>Lesson Introduction:</p> <p>The teacher will explain to students that in order to persuade the scientists and astronauts at NASA to reconsider classifying Pluto as a dwarf Planet, they will need to be able to compare and contrast important details from two different texts and combine the information gathered to create a Comprehension Window Strategy (CWS) prop, a tent-like structure, is a modified file folder with labeled flaps for categorizing small bits of information on sticky notes (Bass & Woo, 2008). A CWS prop will help students gather, comprehend, and present information about a topic. Students can label each CWS prop flap with a potential heading, which will be a great way to reinforce the importance of using text features in informational writing. Sticky notes are an important component of the CWS prop, because they allow students to make ongoing decisions about gathered information. Students can add, adjust, or reject any of their sticky notes. In addition, the headings on sticky notes can easily be changed, modified, or deleted. As students gather information, they write a complete reference for each source on the back section of the prop.</p>

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The teacher will go on to explain that today's lesson will provide more information to support the argument to submit to NASA. The teacher could say something like: Today, we will analyze our Venn Diagram from last week's center to combine information to present on our CWS props. The teacher will remind students that we created Venn Diagrams to compare and contrast an author's point of view on the classification of Pluto as a Dwarf Planet (See Appendix C for lesson). Next, the teacher will explain that after analyzing the Venn Diagrams, students will be given the opportunity to combine or synthesize information on their CWS prop that will later be presented to the class.

Stating the secret to doing it:

The teacher will first need to define the term, synthesizing, for students. The teacher will explain that synthesizing means to combine information. The teacher will begin by saying something like, "We must use our predicting-monitoring-repredicting skills to the synthesize information from our Venn Diagram and other research to create an informative CWS prop." The teacher will go on to explain that self-questioning skills must also be used. The teacher could say something like, "As we analyze our materials, we will need to keep the following questions in mind: How can I combine information from multiple sources into one piece of information?" At this point in the learning unit, students are familiar with using a Venn Diagram and before, during, and after reading questioning skills.

Model thinking:

The teacher will explain that students will need to practice self-questioning skills to synthesize the most important points and key details from previously read articles and previously made Venn Diagrams to create a CWS prop. The teacher will explain that students need to keep the following question in mind while reading: how can I combine information from multiple sources into one piece of information? The teacher might say something like "the article "Pluto: Dwarf Planet" states that "Pluto is a dwarf planet because it is very small and has not cleared the area around itself of space rock and debris" and the information from our Venn Diagram states "But as small as it is, as cold as it is, as far from the sun as it is, for all those years it was considered the ninth planet of the solar system...until Eris came around." So now we must combine the two statements! It will look like this: "Pluto is a very small, cold, dwarf planet whose atmosphere is filled with rocky debris that was once considered a planet until the discovery of Eris." The teacher will write this sentence on the board and explain that this is a single sentence that captures the meaning from both sources.

Scaffold assistance:

Level 1: "Okay, let's try one together," The teacher will have one student read the second paragraph of the "Pluto: The Planet That Wasn't" text. The teacher will ask students to point out the next detail or piece of information that supports why Pluto should be considered a planet instead of a dwarf planet. The teacher will ask "what information or details support classifying Pluto as a planet?" Hopefully students will indicate details such as Pluto's position in space or Pluto's characteristics. Next, the teacher will have students analyze information from the previously made Venn Diagram. The teacher will ask "what information or details support

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classifying Pluto as a dwarf planet?” Hopefully students will indicate details such as how Pluto compares to other planets or Pluto’s unique orbit. Next, the teacher will have students work in groups or partners to synthesize information to create one meaningful sentence.

Level 2: Next, the teacher will have my case study student identify another piece of information or detail that supports why Pluto should be considered a planet. The teacher will ask other group members to identify details from the articles and Venn Diagram that support why Pluto should NOT be considered a planet. The teacher will have students work in partners to synthesize information from both sources to create one meaningful sentence. The teacher will prompt students by asking how details or pieces of information can be combined to create a meaningful message or sentence.

Level 3: The teacher will ask students to synthesize the most important points and key details from two texts to create the CWS prop. The teacher will present students with materials such as a folder, and sticky notes to use to create their CWS prop. Students will be asked to work independently.

Assessment:

The teacher will know if this strategy was effective if students are able to synthesize the most important points and key details from two texts and present them on their CWS prop.

Note. Adapted from: Duffy, G. (2014). *Explaining reading: A resource for explicit teaching of the common core standards*. Guilford Press.

Data Analysis and Assessments

To analyze data, track growth, and gather results, a series of repeated-measures analyses of variance (ANOVAs) were conducted on the rubric data focusing on nine variables of interest gathered from student writing samples from the pre-assessment conducted on day 1, the mid-point check-in conducted on day 11, and the post-assessment conducted on day 25 of the informational writing unit. The nine variables of interest included overall structure, lead structure, transition structure, ending structure, organization structure, elaboration development, craft development, spelling, and punctuation. The rubric for informational writing for third grade was from Calkins (2008). We used this rubric because, it was mandated by the school district and included each of the nine variables of interest. When scoring students’ writing, Tori and Roya

analyzed the writing piece and gave 1 to 2 points if the skill was developing and 3 points when a skill was demonstrated, and 4 points if the skill was exceeded for each of the nine variables of interest. Each student's total score was used to further investigate change over time for the sample size of 18 students and for the nine variables of interest. See Table 4 for ANOVA results.

In addition, student scores on district mandated benchmark reading assessments were analyzed based on student performance. Students who scored 76% correct or higher were considered proficient. Students who did not score 76% or higher were considered nonproficient. This information is displayed in a bar graph that illustrates the percentage of students who scored 76% correct or higher. See Figure 1 for reading comprehension scores.

Results

The ANOVA analysis indicated significant growth in writing skills from the pre-assessment to the post-assessment in which Eta squared (η^2 ; Cohen, 1966) was calculated as the appropriate measure of effect size. In cases where Mauchly's (1940) test of sphericity was violated, the Greenhouse-Geisser (1959) adjustment was applied. The full results of the analyses are presented in Table 4. Of the constructs of interest, only Structure Ending, Structure Organization, and Language Conventions (Spelling) were statistically significant. The scores for Structure Ending showed a significant increase over the three points in time ($F_{2,34} = 7.578, p = .002$) and a moderate-to-large practical effect ($\eta^2 = .308$). The scores for Structure Organization also showed a significant increase over the three points in time ($F_{2,34} = 10.396, p < .001$) and a large degree of practical effect ($\eta^2 = .379$). The scores for Language Conventions (Spelling) showed a significant increase over the three points in time as well ($F_{2,34} = 5.81, p = .007$), but with only a moderate practical effect ($\eta^2 = .255$). Power for all three significant results was sufficient to detect significant differences (.925, .980, and .839, respectively).

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Table 4*Results of Repeated-Measures ANOVAs for Subscales and Total Score*

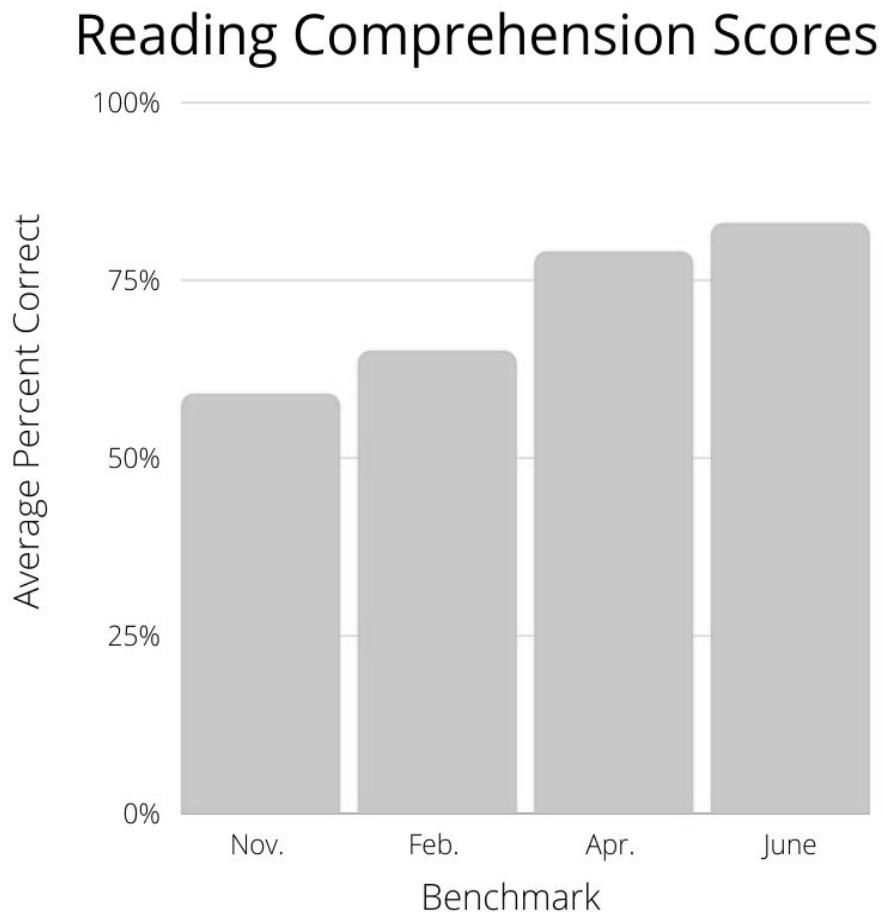
	F	p	η^2	1- β
Structure Overall*	2.508	NS		
Structure Lead*	2.245	NS		
Structure Transitions	2.985	NS		
Structure Ending	7.578	.002	.308	.925
Structure Organization	10.396	<.001	.379	.980
Development Elaboration	.907	NS		
Development Craft*	3.629	NS		
Language Conventions, Spelling	5.810	.007	.255	.839
Language Conventions, Punctuation	.063	NS		
TOTAL*	2.721	NS		

Note. Items marked * were subject to the Greenhouse-Geisser (1959) adjustment.

The school district in which this study was conducted required students to take benchmark reading assessments throughout the school year during the months of November, February, April, and June. These benchmark readings assessments included six to eight reading passages. The benchmark assessment included both fiction and nonfiction reading passages and 46 multiple choice questions designed to assess students' reading comprehension skills. The class average percent correct increased on each benchmark assessment. The class average percent correct was 59% on the November benchmark reading assessment. The class average percent correct increased to 65% on the February benchmark reading assessment. The class average percent correct increased to 79% on the April benchmark reading assessment. The class average percent correct increased to 83% on the June benchmark reading assessment. The total percent of change was an increase of 40.67% correct from the first benchmark assessment in November to the last benchmark assessment in June indicating growth in reading comprehension.

Figure 1

Reading Comprehension Scores



Note. Average percent correct scored on Benchmark Reading Test.

Conclusions and Implications

When reading and writing are taught simultaneously rather than separately, students can unpack meaning and supply evidence to support their interpretations (Spires et al., 2018; Wallace et. al, 2007). If students are to meet the literacy demands stated in the ELA CCSS, then they need to have various opportunities throughout the school day to engage in tasks that integrate both reading and writing (Graham & Hebert, 2011). Reading and writing can be taught simultaneously, and these opportunities can occur through mini-lessons that teachers use to

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explicitly model before, during, and after reading strategies that are reinforced through writing to help students synthesize their learning (Duffy, 2014; Spires et al., 2018; Wangsgard, 2010; Zumbrunn & Krause, 2012).

Implementing writer's workshop can also provide students with opportunities to engage in tasks that integrate both reading and writing. Through writer's workshop, teachers can use mentor texts to teach reading and writing skills during mini-lessons that students will later incorporate into their own reading and writing. Through writer's workshop students can also read self-selected texts to research topics of interest, write to demonstrate their learning, and share their writing to receive feedback (Bradford et al., 2016; Kissel, 2017; Morabito, 2017). Further, teachers can use rubrics to share criteria with students and they can use them to evaluate students' writing (Morabito, 2017).

Results from this quantitative research study indicated that explicit instruction that integrated reading and writing improved third-graders' reading comprehension. As a classroom teacher, Tori confirmed the positive correlation between writing and reading instruction. This positive correlation was confirmed by integrating writing into explicit reading instruction through research-based writing and reading comprehension strategies without restricting literacy instruction to either reading or writing, but a balance of both.

In addition to the implications already shared regarding how teachers should strive to explicitly teach reading and writing, this study also has implications for teacher educators. Teacher educators who work in schools as instructional coaches, mentors, and in other professional development capacities could use the results of this study to promote explicit literacy teaching with a focus on integrating reading and writing instruction rather than teaching the two in isolation. Teacher educators could adapt the models provided throughout this

manuscript for use with classroom teachers, as well as with teacher candidates in methods coursework and in field placement settings at the university level. Stakeholders involved in school-university partnerships could benefit from replicating this study because of the symbiotic nature of working alongside one another. For example, Tori benefitted from planning with Roya because of the shared resources, expertise, and exchanged ideas. Roya benefitted from planning for the same reasons. Roya appreciated the opportunity to work directly with third graders for several weeks while also consulting with Tori throughout the study. The students in Tori's classroom also benefitted as they received instruction designed by both Tori and Roya to support their learning needs.

Further, promoting this kind of literacy instruction requires a focus on thinking beyond reading programs, scripts, and the test preparation craze. By providing students with choices in their learning, teachers recognize how reading and writing are tools that prepare students for lifelong learning beyond the school walls. When that powerful message is conveyed to students, we have a better chance for a more literate society.

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Appendix A

Unit of Study

<p>Day 1 (pre-assessment)</p>	<p>Students respond to baseline prompt:</p> <p>Think of a topic that you are interested in or know a lot about. You will have thirty minutes to write an informational, or all about, text that teaches others interesting and important information about your topic. Write in a way that shows all that you know about informational writing.</p>
<p>Day 2-10</p>	<p>Students: research chosen topics, learn how to use text features to better understand nonfiction texts Instructor: teach how to use text features, model writing process through shared writing and writer’s workshop</p>
<p>Day 11 (mid-point check)</p>	<p>Students: respond to prompt given on day 1 Instructor: compare pre-assessment and mid-point responses to track growth</p>
<p>Day 12-21</p>	<p>Students: learn how to identify author’s purpose through informational text examples and mentor texts Instructor: conduct writing conferences with students</p>
<p>Day 22-24</p>	<p>Students: create a research product using supplied materials and present their research to 1st grade students Instructor: provide support and feedback to students</p>

Day 25 (post-assessment)	Students: respond to prompt given on days 1 and 11 Instructor: compare all 3 assessments to track growth
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Appendix B

Example of anchor chart for shared writing activity



Cause and Effect Shared Writing

Have you ever noticed black clouds, heavy rain, and loud rumbles across the sky? If so, you may have experienced a thunderstorm. A **thunderstorm** is **caused** by hot and cold air mixing in the clouds. These clouds are known as **thunderclouds** that contain billions of water droplets and ice crystals that carry electricity. **As a result**, the electricity forms a giant spark that flashes across the sky, called **lightning**. **If** lightning strikes a tree or building, **then** a fire can occur. Lightning is very hot. It **causes** hot air to expand very quickly that forms sound waves known as thunder that **cause** loud rumbles across the sky.



Appendix C

Example small group lesson of before, during, and after reading strategies

Text(s)	<ol style="list-style-type: none"> 1. “Pluto: Dwarf Planet” by ReadWorks 2. “Pluto: The Planet That Wasn’t” by ReadWorks
Grouping configuration	Small group
Explicit strategy instruction	<ul style="list-style-type: none"> • Predicting-monitoring-re-predicting • Self-questioning • Before, During, and After reading think alouds
Modeling	<p>Teacher will explain that we need to keep the following questions in mind while we read:</p> <ul style="list-style-type: none"> • How are the point of views the same? • How are the point of views different? • Which point of view do I agree with? <p>Teacher will model activating prior knowledge: “My schema is telling me that the article “Pluto: Dwarf Planet” is mostly about why Pluto is a “dwarf” planet.</p> <p>Teacher will model how to make a prediction: I predict that the author’s point of view is that Pluto should be considered a “dwarf” planet”.</p> <p>As students read along with the teacher, the teacher will stop and ask “Is my prediction correct or incorrect? How do you know?”</p> <p>Teacher will have students record this information on their Venn Diagram.</p> <p>We will go through the same process for the other article, “Pluto: The Planet That Wasn’t”. The teacher will say “by putting information from the text into the Venn Diagram, I can easily see that each author’s point of view was different!”</p>

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Collaborative use	The teacher will have students go back and whisper read each of the texts. Students will work together as a group to add to their Venn Diagrams. The teacher will prompt them along the way asking where details or pieces of information about each author's point of view fit on the Venn Diagram.
Guided practice	<p>The teacher will ask "what information or detail tells you that this author feels as if Pluto should be considered a planet?"</p> <p>Hopefully students will point out this detail: "But as small as it is, as cold as it is, as far from the sun as it is, for all those years it was considered the ninth planet of the solar system... until Eris came around."</p> <p>The teacher will ask, "does this piece of information help us better understand how the author feels about or thinks about the topic? If so, where can I add it to the Venn Diagram?"</p> <p>Hopefully students will understand that the author's point of view is that Pluto should be classified as a planet, rather than a "dwarf" planet. The teacher will point this out, if students do not.</p>
Independent application	The teacher will ask students to distinguish their own point of view from the authors. The teacher will present the group with a large sentence strip that says, "My point of view is _____, because _____." Students will be asked to work independently to distinguish their own point of view and provide support for it using evidence from the articles.

Note. Adapted from: Stahl, K. A. D. (2013). Today's comprehension strategy instruction: "Not your father's oldsmobile". In B. M. Taylor & N. K. Duke (Eds.) *Handbook of Effective Literacy Instruction: Research-Based Practice K-8* (pp. 223-245). Guilford Press.