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"We Can Write, Too!" A Developmentally Appropriate Writing Curriculum for Grades K-1

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Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts Composition, Rhetoric, and Digital Media

Nova Southeastern University
Halmos College of Arts and Sciences

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“WE CAN WRITE, TOO!”

A DEVELOPMENTALLY APPROPRIATE WRITING CURRICULUM FOR GRADES K-1

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree

Master of Arts in Composition, Rhetoric, and Digital Media

Danielle Pierce

Halmos College of Arts and Sciences

Department of Communication, Media, and the Arts

Nova Southeastern University

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Abstract

The Common Core State Standards initiative was created to unify current learning standards and ensure that all students were prepared for graduation across the United States (Common Core State Standards Initiative, 2021). Despite this initiative, national assessment data has shown that most students do not perform to grade level expectations in writing (Costa et al., 2020; NAEP, 2011). Scholarship has demonstrated that there is a deficit of research in primary grade writing instruction, and a lack of universal direction in how to teach students to meet writing standards (Graham & Harris, 2005; Korth et al., 2017). While it has been argued that young children are unable to participate in the cognitive process model of writing (Flower & Hayes, 1981), other scholarship suggests that these students can execute writing tasks if they are given appropriate strategies and routines that support executive functioning abilities (Bereiter & Scardamalia, 1982; Graham & Harris, 2005). Through a synthesis of scholarship based in composition theory and primary education, this thesis proposes a nine-week, executive functioning-based curriculum for implementing Common Core writing standards in kindergarten and first-grade classrooms. This thesis provides a new perspective on teaching writing, advocates for building executive functioning skills through the composing process and demonstrates how a unified curriculum created through research in best practices can help prepare students for effectively meeting Common Core writing standards.

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“We Can Write, Too!”

A Developmentally Appropriate Writing Curriculum for Grades K-1

The subject of writing is a powerful method of both communication and learning. The unique, cyclic interaction between the hand, eye, and brain represents a symbolic manifestation of verbal language and creates a multi-representational mode of learning (Emig, 1977). This threefold interaction marks written composition as radically different from verbal conversation (Bereiter & Scardamalia, 1982). When young children begin to learn how to write, they encounter a demanding process that requires a great amount of cognitive processing and control. The cognitive actions of organizing information, switching tasks, and resisting impulses is collectively known as executive functioning (Center on the Developing Child at Harvard University, 2011). Executive functioning is essential to participating in the writing process and translating internal language onto external surfaces. However, the writing process can become difficult for students who have not fully developed their executive functioning abilities. Students are expected to overcome these difficulties and master the cyclical interaction of writing, as this method of learning is often used as an assessment staple and a primary method for demonstrating knowledge of subject areas (Graham & Harris, 2005a).

In 2009, the Common Core State Standards were launched in an attempt to unify separate state standards and ensure that all students were prepared for graduation, regardless of where they reside in the United States (Common Core State Standards Initiative, 2021a). The Common Core called for key shifts in standards based in English language arts, which included reformation of writing assignments (Common Core State Standards Initiative, 2021c). The initiative recognized that typical K-12 writing assignments drew heavily from student experience and opinion and worked to create standards that would also require students to participate in

argumentative and informative writing. The inclusion of evidence-based writing adds to the more traditional practice of implementing assignments that draw exclusively on student experience and opinion (Common Core State Standards Initiative, 2021c). In the primary grades, the new Common Core standards ensure that students have experience with composing informational texts in addition to narratives and opinion pieces.

The Common Core initiative attempted to provide goals for what each grade level should accomplish in the subject of writing across the United States. However, it does not provide any outline for teachers in how to instruct the composing process for each writing assignment, as the initiative does not identify itself as a curriculum. The Common Core writing standards provide benchmarks for a final product but do not provide a clear outline for how students should brainstorm, draft, and edit these compositions. This has left states and school districts free to choose from a multitude of curriculum options that target Common Core writing standards and is a reoccurring challenge when working with the initiative's other standards. Research has suggested that variability in instructional methods may not be detrimental to student writing growth across an academic year (Coker et al., 2016), which supports Common Core's initiative of only providing standards for final products. However, according to Coker et al. (2016), variability also suggests "a lack of a well-articulated approach to writing instruction" (p. 821). A universally adopted approach to writing instruction will provide more clarity in how to teach composing processes to young students while providing guidelines for how to achieve Common Core standards.

Over the years, national educational data reflects that even with the outline of achievement provided by the Common Core, the majority of students do not perform to expectations in writing assessments when they reach the testing grades. Prior to the Common

Core state standards initiative, national assessment data from both 1998 and 2002 show how the majority of 4th grade, 8th grade, and 12th grade students only demonstrate partial mastery of writing skills (Graham & Harris, 2005a). Most recently, the 2011 National Assessment of Education Progress (NAEP)¹ reported that only 27% of eighth and twelfth-grade students scored at or above the proficient level of writing (Costa et al., 2020), even after the adoption of Common Core standards.

Though there are no national standardized tests that measure student writing ability in the primary grades, data from late elementary, middle school, and high school suggests that we may not be appropriately addressing student writing development, even well before the standardized testing years. Students may not have the skills needed to effectively execute the writing process during national assessments and may need intervention prior to entering the testing grades. While it can be argued that our national writing assessment strategies are unable to accurately capture a complete picture of student writing abilities, the consistent data collected over the decades suggests that students are struggling to meet universal grade level writing standards. To close the achievement gap presented by assessment data, students should be exposed to effective writing instruction at the start of their education in the primary grades (Graham & Harris, 2005a).

While national education data provides a measure of how many students are not achieving grade level writing standards, there is little data about how the writing process is taught (Graham & Harris, 2005a). In the primary grades, the small pool of writing instruction data has demonstrated that teachers tend to emphasize handwriting and spelling instruction (Coker et al., 2016; Graham & Harris), and that interventions are not frequently implemented for struggling writers (Graham et al., 2003). The deficit of writing research in the primary grades,

¹ The 2011 NAEP report is the most recent statistical analysis of national writing assessment. Data from the 2017 NAEP report has yet to be released.

combined with a lack of universal direction in how to teach writing standards, provides a challenge for educators in following recommendations and implementing developmentally appropriate procedures that can help to enhance writing instruction inside their classrooms (Korth et al., 2017).

Though it has been argued that young children are unable to fully participate in the writing processes of planning, translating, and reviewing (Flower & Hayes, 1981), they may be able to execute writing tasks if given appropriate strategies and routines (Bereiter & Scardamalia, 1982; Graham & Harris, 2005b). Good writers possess the ability to implement strategies that help create, manage, and improve their compositions (Dean, 2010; Graham & Harris). These strategies also help children use and develop executive functioning, which is an essential component for participation in the cognitive process model of writing. The lack of control over executive functioning can be seen when children attempt to plan and execute a representation of their internal knowledge, as well as when they need to generate more information about a subject (Flower & Hayes). It has been suggested that students need adequate time and practice in utilizing strategic actions that embed executive functioning (Costa et al., 2020; Graham et al., 2003), and that the primary grades may be an ideal place to begin improving writing performance (Costa et al.). If children are taught the cognitive process model in the primary grades through strategies and routines that support executive functioning through this approach, they will be better equipped to meet writing standards that are assessed in the later grades.

In this thesis, I aim to provide a solution for implementing Common Core writing standards in the primary grades and progressing student writing abilities through the proposal of an executive functioning-based writing curriculum. This project synthesizes scholarship based in both composition and primary education into a nine-week curriculum that can be implemented in

both kindergarten and first-grade classrooms. Through an analysis of this scholarship, I demonstrate how there is an understanding of the relationship between executive functioning and the writing process, but no clear outline for how to harness this relationship to improve student writing performance. The curriculum aims to teach the cognitive writing process through the incorporation of several research-based strategies that also help in building executive functioning abilities. Teachers following Common Core writing standards will be able to use this curriculum to teach students how to write different genres by engaging in the cognitive process model of writing. Ultimately, this thesis provides a new perspective on teaching writing, advocates for building executive functioning skills through the composing process and demonstrates how a unified curriculum created through research in best practices can help prepare students for effectively meeting Common Core writing standards.

Literature Review

The Cognitive Process Model of Writing

In an attempt to theorize how individuals execute thinking processes and make conscious choices while writing, Flower and Hayes (1981) introduced a new model of writing instruction in their publication “A Cognitive Process Theory of Writing.” Building off stage models that governed the growth of written products, Flower and Hayes aimed to highlight the importance of cognitive processes when producing compositions. According to the cognitive process model, writing can be best understood as a set of three distinct thinking stages that are executed by the writer in a linear fashion in response to the task environment (Flower & Hayes).

For an individual to participate in the cognitive writing process, there must first be a recognizable task environment in which a composition should be produced. Flower and Hayes credited the task environment as the creation of both the rhetorical problem and the text

produced so far. The rhetorical problem is a blend of the writing prompt, the target audience, and the writer's own goals for the composition. This combination interacts with the individual's growing composition to create a task environment that continuously makes demands on the writer. Flower and Hayes also identified long-term memory as a factor that impacts the cognitive process model of writing. Any piece of knowledge that is stored in one's memory, or that is found in outside resources, can be used to respond to the task environment and execute the linear sequence of composing. Unlike short-term memory, long-term memory requires cues to retrieve networks of knowledge that will help the writer respond to a prompt (Flower & Hayes). This process requires a more advanced internal monitor and working memory system through a person's executive functioning abilities, as long-term memory requires prompting for its retrieval.

When the task environment and the writer's long-term memory begin working together, the writer can begin to move through the cognitive process model of writing. First, the writer participates in the planning stage, where they create a representation of the knowledge they will use in their composition. This representation is created through the generation of ideas, the organization of information, and goals that the writer sets to respond to the task environment (Flower & Hayes, 1981). Once the representation of the composition is created, the writer then enacts the translating stage by moving their ideas into a visible language system. The final stage of the cognitive process model is reviewing, where the writer evaluates and revises their own composition. The reviewing stage frequently serves as a springboard for a new cycle of the cognitive process model, especially when the writer evaluates the already-written text, former plans, or larger goals. A person's internal monitor, which is governed by executive functioning

abilities, dictates when to move through the three stages of planning, translating, and reviewing, and will decide when to begin a new cycle of the composing process.

In their publication, Flower and Hayes (1981) argued that it is difficult for children to participate in the cognitive process model. The authors claim that children lack the monitor that encourages them to generate and sustain the development of more content that responds to the task environment. Citing previous research by Bereiter and Scardamalia, Flower and Hayes also stated that very little of the writing process is automatic for children, and that much more time is devoted to individual thinking tasks when compared to adults who have fully developed executive functioning skills. Flower and Hayes specified that the translating stage is difficult for young children to execute, as the demands of symbolizing formal language creates a specific thinking task for activating lexical and syntactic knowledge. This can overwhelm young writers who are also attempting to simultaneously translate ideas for their compositions that only live within short-term memory.

Though children have not mastered the executive functioning skills required to meet the demands of the cognitive process model of writing, Bereiter and Scardamalia (1982) claimed that children can advance their written compositions if we provide them procedures that help to execute parts of the composing process. This claim was echoed decades later by Graham and Harris (2005b), who stated in their publication of the Self-Regulated Strategy Development model that struggling writers simply lack the strategies needed to execute the writing process. Graham and Harris stressed that good writers are able to execute a variety of strategies to navigate the writing process, and that strategy-based instruction can help struggling writers succeed in the writing process. Strategies can help to specify a course of action for successfully completing a component of a writing assignment while providing a concrete illustration of the

complex mental operations that occur while composing (Graham & Harris, 2005b). These strategies can serve as procedures for both executive functioning activation and participation in the cognitive process model of writing.

Executive Functioning and Children’s Writing Performance

Executive functioning is the ability to focus and monitor multiple channels of information, make decisions, revise plans, and resist impulses when interacting with both internal and external stimuli (Center on the Developing Child at Harvard University, 2011). This internal process can be compared to a personal air traffic control system, which helps individuals navigate the “arrivals and departures” of multiple stimuli inside the brain. The functions behind monitoring this “air traffic control system” can be divided into three categories: attentional flexibility, working memory, and inhibitory control (Center on the Developing Child at Harvard University). Though these elements are distinct from one another, each component is used simultaneously to perform tasks and execute responses (McCelland & Tominey, 2014; Center on the Developing Child at Harvard University).

While executive functioning helps us to carry out our day-to-day tasks, the process of monitoring the consistent input and output of information is not innate. Individuals are not born with executive functioning skills—rather, they are born with the potential to develop these cognitive processes (Center on the Developing Child at Harvard University, 2011). Fostering the development of executive functioning is essential in early childhood, as these skills serve as building blocks for both social relationships and academic success (Center on the Developing Child at Harvard University; McCelland & Tominey, 2014). While attentional flexibility, working memory, and inhibitory control work together to facilitate an individual’s decisions and actions, they also work together when executing the writing process. The acts of planning,

translating, and reviewing are demanding on children's executive functioning skills, as it requires all three executive functioning components to work together in translating internal language into the external environment. Since neither executive functioning nor writing are natural processes, young children should be taught composing in a way that will simultaneously build these skills.

Attentional Flexibility

Attentional flexibility is the ability of the monitor to switch or focus on tasks, which plays a significant role in fluency, organization, structure, and word choice (McCelland & Tominey, 2014; Kent et al., 2014). This component of executive functioning allows us to determine what speech and actions are appropriate for different settings (Center on the Developing Child at Harvard University, 2011). A person with fully developed attentional flexibility would be able to evaluate a setting and adjust their behavior for this specific environment. When writing, attentional flexibility is required to make decisions pertaining to the prompt, the audience, and the task environment. The writer needs to determine how to organize and structure their compositions for an audience, as well as what words to use that best pertain to the topic at hand. Attentional flexibility is also needed when participating in the cognitive process method of writing, as a monitor is needed to switch between the actions of planning, translating, and reviewing.

Attentional flexibility plays an important part in the reviewing stage of the cognitive process model of writing. Revisions are demanding on executive functioning, as it requires the flexibility and internal feedback system that allows for the identification of improvements in writing (Bereiter & Scardamalia, 1982). Attentional flexibility enables an individual to catch and correct mistakes, revise their thoughts, and consider new perspectives to incorporate (Center on the Developing Child at Harvard University, 2011). This process can be seen when individuals

plan their compositions, translate their thoughts into writing, review their work, and adjust as needed. Additionally, since attentional flexibility is not fully developed in young writers, they are not able to decenter themselves from what is written to consider their compositions from the reader's viewpoint (Bereiter & Scardamalia). It takes a writer with fully developed attentional flexibility to independently consider possible questions and improvements from a reader's perspective.

Working Memory

Working memory constitutes the ability to store, retrieve, and internally process information (McCelland & Tominey, 2014). It provides a "mental surface" for both holding and manipulating information that can be ready to use in our everyday lives (Center on the Developing Child at Harvard University, 2011). Working memory helps young children remember, connect, and execute information. This component of executive functioning is notably responsible for the ability of children to perform multi-step instructions without reminders (Center on the Developing Child at Harvard University). When activating working memory, children will be able to follow the multi-step cognitive process model of writing without visual or verbal reminders.

The demand on working memory during the composing process can be seen when writers engage in metamemorial search processes. The metamemorial search is defined as the internal retrieval process when seeking the availability of knowledge about a subject (Bereiter & Scardamalia, 1982). In these metamemorial searches, an individual will not directly yield content to use in writing, but instead will yield awareness of what knowledge is available in memory (Bereiter & Scardamalia). When responding to the rhetorical problem presented in the task environment, a writer will conduct a metamemorial search by activating retrieval networks for

information, which in turn activates the cognitive process model's linear composing sequence (Flower & Hayes, 1981). Without proper activation of knowledge and awareness of how much they know about a particular subject, children struggle to find a topic or starting point for their writing (Bereiter & Scardamalia).

Teachers may unknowingly prevent students from building their working memory skills and activating retrieval methods. Many teacher-directed prewriting activities take over the job of activating long-term memory and do not provide adequate support for students to conduct independent metamemorial searches (Bereiter & Scardamalia, 1982). Activities that interfere with metamemorial searches include showing a video clip or sharing a text that is topic-specific, thus eliminating the need for long-term memory searches. The lack of metamemorial activation in the primary grades suggests a lack of executive functioning routine to trigger long-term memory retrieval for topic and composition development. Without a long-term memory trigger, children simply generate text through a "what's next?" approach in their short-term retrievals, instead of thinking about the composition as a whole (Bereiter & Scardamalia). A more streamlined approach to writing, such as the cognitive process model, provides a structure for activating long-term memory to respond to a rhetorical problem in the task environment. Additionally, promoting the composition as a whole is more likely to activate long-term memory, as it encourages the writer to think, plan, and organize around their knowledge. Using the "what's next?" approach through short-term memory retrieval demonstrates minimal planning and consideration for the rhetorical problem.

Inhibitory Control

Inhibitory control refers to self-regulation, such as stopping an unwanted action or verbal response and replacing it with a desired behavior (McCelland & Tominey, 2014). This

component of executive functioning allows us to resist temptations, pause our actions, and think before we act out (Center on the Developing Child at Harvard University, 2011). Children utilize inhibitory control when taking turns, ignoring distractions, staying on task, and following classroom rules and procedures. While writing, children need to implement inhibitory control to remain focused and produce a response for the task environment. This skill is needed to think about the topic before responding and to stay focused while translating thoughts from the internal to external environment. Both established classroom routines and explicit writing procedures can help young students remain on task and filter impulses that may distract during the composing process.

Limitations in Research

While previous research has claimed that writers naturally become more self-regulated with maturity (Graham & Harris, 2000), more recent research argues that students can participate in advanced writing processes if they demonstrate executive functioning through a monitor of attention (Kent et al., 2014) and participate in writing interventions that embed executive functioning training (Costa et al., 2020). The deficit and conflicting claims in current writing research in early childhood makes it challenging for primary-grade teachers to be effective in their pedagogical practices for writing instruction (Korth et al., 2017). Despite the lack of research regarding children's writing performance, Costa et al.'s (2020) study advocates for first grade as being an ideal place to begin improving writing performance. The authors found that high written language scores from first-grade participants positively correlated with high executive functioning scores, suggesting that primary grade students with more developed executive functioning abilities can produce stronger written compositions (Costa et al.).

Transcription Skills and Executive Functioning

There have been conflicting claims in research on whether transcription skills play a role in composition development. Developmental psychologist Lev Vygotsky claimed that the transition from oral to graphic expression demonstrates a major step in the development of symbolic thought (as cited by Bereiter & Scardamalia, 1982), as the written word is a symbol of internal thoughts in the external environment (Beringer & Winn, 2014). Flower and Hayes (1981) suggested that the lack of transcription skills in the childhood years of development may contribute to children's inability to move recursively between writing stages. Despite these claims, Graham et al. (2000) did not consider this an identifying factor of quality compositions. In their study, Graham et al. discovered the speed of transcription improved with supplemental handwriting instruction, but the quality of ideas and details did not. Similarly, Kent et al. (2014) discovered that transcription skills allowed for more efficient production of compositions but did not impact the overall quality of writing.

It has been proposed that transcription overwhelms the ability for young students to implement their executive functioning skills during the composing process (Flower & Hayes, 1981). One way to ease the burden of transcription on executive functioning ability is to eliminate the mechanical demands of writing and to teach young students who have not mastered handwriting how to compose verbally through dictation (Graham & Harris, 2000). Instructional support, such as modeling and the use of graphic organizers, can also aid in eliminating the demands of transcription during the writing process.

Additionally, teachers should resist the urge to rush and implement immediate transcription corrections through the critical development stage when children are learning how to represent and communicate their thoughts symbolically (Korth et al., 2017). Instead of

focusing on correcting mistakes, teachers should honor all developmentally appropriate attempts at composing, including drawing and incorrect spelling. By honoring all attempts and taking precautions in illustrating writing approaches, teachers can avoid discouraging young students from participating in writing activities and promote early literacy skills (Korth et al.). Adapting instruction to honor all age-appropriate writing attempts will also aid in executive functioning development, as this will take precedence over the demand of building transcription skills.

The Value of Community in the Task Environment

Berninger and Winn (2014) highlighted the complexity of the writing process, stating that “the writing process is supported by a single-system—the writer’s internal brain-mind interacting with the external environment” (p. 108). The internal and external environments can be seen at work in the larger task environment, where the rhetorical problems of topic, audience, and exigency interact with the processes of planning, translating, and reviewing (Flower & Hayes, 1981). Children can be seen struggling to foster this relationship in the task environment, such as when attempting long-term memory retrieval and considering the reader’s viewpoints (Bereiter & Scardamalia, 1982).

Primary grade classrooms can be viewed as a place where students learn that writing takes place within a community. Students can share their ideas with their peers, receive constructive feedback on their writing, and effectively solve problems using strategies they are introduced to in the classroom community. However, strategies risk becoming just “things to do,” and not ways to solve problems when taught in isolation and removed from a social setting (Dean, 2010). In order to identify students as problem solvers participating in the cognitive process model of writing, we must see them as problem-solvers who are also members of communities (Bizzell, 1982). One notable criticism of the cognitive process theory is that it

neglects the role of community knowledge in the composing process (Bizzell). If the cognitive process method of writing was reframed to incorporate participation from the classroom community, these community-based strategies can help to advance written compositions.

Classroom communities can be considered an essential component of the task environment, where students can verbally and nonverbally interact with their peers to build upon their inner-directed thoughts (Bizzell, 1982). When students talk about their writing to their peers in both whole-group and small-group settings, they are active participants in a classroom community that will help them engage in the composing process. Additionally, the nonverbal cues given by peers when interacting inside the community can assist students in understanding and further developing their compositions. Nonverbal cues are a major difference between oral communication and written discourse, as they can guide knowledge of when to stop in conversation, when to elaborate further, and when to shift topics during discussion (Bereiter & Scardamalia, 1982). These conversational cues vanish when young students are asked to produce a text autonomously but can be harnessed when reading and discussing drafts of student work.

Written composition is a radically different task for students starting to write, as all supports of conversation are removed when moving thoughts between inner and outer speech (Bereiter & Scardamalia, 1982). For young students, including verbal support is essential as they learn how to move internal thoughts onto external surfaces. Though Flower and Hayes (1981) proposed that the cognitive process model is executed through inner-directed speech, Bizzell (1982) advocated for the inclusion of outer-directed thinking, which suggests that our thinking and language originates from outside of the individual. Through this fusion of inner and outer-directed theories, young students will be able to lean on the verbal support provided by the classroom community to execute the writing processes of planning, translating, and reviewing.

One example for engaging students in their roles within the classroom community is using a cooperative learning model. Bruffee stated that cooperative learning is an appropriate method for teaching primary grades that guarantees accountability from its members (as cited in Dean, 2010). This strategy promotes working together within the learning community and includes structured groups and assigned roles. Though the cooperative learning model requires students to use attentional flexibility, working memory, and inhibitory control, the structure provided within the model aids younger students in activating executive functioning skills. This is not to be confused with collaborative learning, which grants total autonomy to groups of students and demands a high level of executive functioning. Collaborative learning models should be avoided in elementary school classrooms, as the demands placed on executive functioning during these routines are more appropriate for secondary and college-level students (Dean).

Strategies for Incorporating Executive Functioning Routines

Incorporating routines and practicing smooth transitions between activities will help young students regulate their responses to different task environments (McCelland & Tominey, 2014), including those that demand a written composition. A commonly used activity to activate and support executive functioning is modeling. Bierman and Erath identified that an essential component of learning a new skill is seeing the skill demonstrated by someone with strong self-regulation abilities (as cited in McCelland & Tominey). In addition to modeling, procedural facilitation techniques can be implemented in writing curriculum as skills and routines that help to “ease the executive burden of writing” without providing substantive suggestions for the content and form of compositions (Bereiter & Scardamalia, 1982). Teachers should remember

that the focus of writing curriculum should not solely be on teaching strategies; rather, it should focus on helping students use and adapt strategies for different needs and purposes (Dean, 2010).

The Self-Regulated Strategy Development Model

In their publication of the Self-Regulated Strategy Development model (SRSD), Graham and Harris (2005b) argued for the explicit teaching of strategies to provide writers the tools they need to plan, monitor, evaluate, and revise a text. Since strategies help to organize and sequence behavior (Graham & Harris), they also activate executive functioning routines. Because of this, the use of effective strategies differentiates novice writers from “excellent writers” who demonstrate mastery of grade-level writing expectations (Dean, 2010; Graham & Harris). With the SRSD approach, students are explicitly taught strategies for planning and revising that also combine procedures for self-regulation, the writing task, and inhibitory control (Graham & Harris). Additionally, the SRSD approach uses instruction based on criteria rather than time to allow students to move at their own pace (Graham & Harris). Instead of spending frequent time writing, students need to be exposed to concrete strategies and given the freedom to experiment with them in their own writing (Dean, 2010; Graham & Harris).

Though Costa et al. (2020) cited Graham and Harris’s SRSD model as an example of a curriculum that combines executive functioning and writing routines, the original design of this model may not be appropriate for primary classrooms. In a five-year research study, Graham and Harris (2005a) discovered both second and third grade students showed positive benefits from the SRSD model, including more time writing, longer compositions, and more complete and thought-out writing pieces. However, Graham and Harris noticed that the second-grade students did not perform as well on the posttest as their third-grade peers, even when students in both grades received the same instruction using the SRSD model. The authors concluded that the

younger students needed more practice in applying basic writing strategies (e.g., selecting topics, organization) and self-regulatory writing procedures (e.g., self-monitoring, goal-setting).

Strategies for Teaching the Cognitive Process Model in the Primary Grades

The Writer's Workshop Model

In the late 1990s and early 2000s, the writer's workshop movement gained popularity in elementary school classrooms. Similar to the cooperative learning model, the writer's workshop requires accountability from students in order to participate in group activities and independent writing time. This method of teaching is centered around student choice, which in turn activates long-term memory. Through the writer's workshop, teachers can heed Bereiter and Scardamalia's (1982) warning of depriving students of essential skill development in writing, as students are executing the work independently. In the writer's workshop, students produce "significant" writing in this environment, as they are committing to their own ideas over those that may be given or presented to them (Atwell, 1998). Through the facilitation of a more independent workshop structure, it is important to remember to let the child's voice and ideas shine through. As Harwayne (2001) stated, "we want children to sound like children. We are not interested in helping nine-year-olds write like nineteen-year-olds" (4). By respecting the child's voice and ideas, teachers will be allowing students to participate in the cognitive writing process in a way that is developmentally appropriate and promotes grade-appropriate expectations and achievement.

Minilessons in the writer's workshop are designed to incorporate modeling strategies for students, which is an essential component in learning a new skill (McCelland and Tominey, 2014). By utilizing a minilesson format within writing curriculums, students receive both exposure to concrete strategies and adequate time to practice implementing these strategies

within their own work. Atwell (1998) credited minilessons as being a space to introduce and highlight concepts, techniques, and information that will help young writers to advance their compositions. These minilessons can also be a space for teachers to share their authority and model the skills students need to move forward (Atwell).

For young students, Harwayne (2001) suggested incorporating more executive functioning routines into minilessons. During the first few weeks of school, teachers should demonstrate how to use writing materials, how to be respectful of peers, what to do when students finish their compositions, and how to properly share work with the class. By addressing these procedural issues during the first minilessons, writing workshops will be more successful to implement in the primary grades (Harwayne). The consistent review of routines and transitions will also help young students to regulate their responses in the task environment, building both attentional flexibility and inhibitory control. By establishing these routines, the writer's workshop can create a rigorous comfort zone where children feel good about themselves as writers, know that it is a safe space to take risks, and engage in newly introduced strategies (Harwayne).

Following the minilesson, students conduct check-ins with the teacher through quick, one-on-one conferences. Atwell (1998) emphasized the importance of meeting with students while writing is occurring, stating "my job is to help kids develop as writers, not assign sink-or-swim tests of writing performance" (p. 220). During conferences, teachers should initiate discussion with open-ended questions. The goal is not to have students revise their ideas on the spot, but to encourage them to think through what is working in their compositions, what may need more detail, and what can be done next to meet their goals (Atwell). These conferences are an example of scaffolding, or a pedagogical strategy that can help build the three components of

executive functioning. Jerome Bruner identified the scaffolding strategy as a phenomenon called the “handover phase,” where an adult figure will initially intervene and provide less and less assistance to a learner (as cited in Atwell). The handover phase should not be considered a “hand-out” of information and material, as the child is actively engaged with the task that the teacher is briefly overseeing (Atwell).

The Author’s Chair Strategy

Though there is a lack of curriculum that combines specific executive functioning routines with the cognitive process model of writing, there have been several grade-specific strategies developed to assist students with singular steps of writing. One such strategy that demonstrates the combination of composition and executive functioning routine is the author’s chair strategy. This strategy serves as a routine where children share their working composition drafts to the class and receive feedback from their peers. In a case study presented by Cahill and Gregory (2016), a kindergarten class was seen providing positive feedback in the form of compliments and constructive feedback in the form of “wishes.” Though Bereiter and Scardamalia (1982) argued that young children have difficulty recognizing the reader’s viewpoint, the routine observed by Cahill and Gregory demonstrates how young students can perform this de-centering with prompting and support from a classroom discourse community. Young students can also build their executive functioning skills through the author’s chair routine, as participation requires attentional flexibility, working memory, and inhibitory control.

Limitations of Current Writing Practices

Despite the advocacy for writing-based strategy implementations by researchers, there are still limitations that are reflected in the current practices of primary-grade teachers. Korth et al. (2017) recognized that teachers may be “unprepared to engage in instructional practices that

align with how early writing skills develop in young children” (p. 237). Additionally, the elementary school developmental period expects an enormous amount of growth in a short time frame. While kindergarten students are expected to generate simple sentences, fifth-grade students may be asked to write reports and make arguments (Costa et al., 2020). The lack of developmental understanding, combined with the rapidly progressing expectations of the elementary school environment, may contribute to limitations in appropriate writing practices.

In their interviews with five primary-grade teachers, Korth et al. (2017) found that each teacher genuinely expressed a desire for teaching students to understand the importance of writing and take pleasure in the composing process. However, Korth et al. also discovered several obstacles for writing instruction, including time and knowledge of student abilities. Though Graham et al. (2003) claimed that younger students need more practice applying both basic strategic actions (e.g. selecting topics) and self-regulatory procedures (e.g. goal setting, self-monitoring), both Graham et al.’s and Korth et al.’s research demonstrates the difficulty of attaining these goals in day-to-day classroom routines. To prevent writing curriculum from slipping under the other pressures of the educational environment, it is important to create time and space in the classroom for writing routines, while honoring all attempts students make in the composing process (Cahill & Gregory, 2016).

While Graham and Harris (2005b) and Dean (2010) advocated for the importance of teaching strategies for struggling writers, teachers may not be appropriately utilizing strategies in their pedagogical practices and adaptations. Adaptations can be described as any additional strategy, routine, or tool that is implemented for students struggling to meet lesson objectives and/or learning standards. Through a large-scale survey study, Graham et al. (2003) discovered that one in four participating teachers only applied one or two adaptations for struggling writers,

while almost one in every five teachers surveyed made no instructional writing adaptations. Additionally, Graham et al. recognized in their survey study that one-sixth of participants limited the decision-making of struggling writers in some way. Bereiter and Scardamalia (1982) warned teachers of this adaptation decades ago, as limiting thinking procedures prevents students from developing the executive functioning routines of memory retrieval. The lack of strategy integration and writing freedom could be seen more recently in Coker et al.'s (2016) longitudinal study of writing activities in first-grade classrooms. While the researchers discovered that first-grade students spent approximately 125 minutes a day on average interacting with writing-based activities, students mostly spent their time copying texts or responding to open-ended questions with a singular-word answer (Coker et al.).

Considering the limitations and obstacles primary-grade teachers face in implementing writing curriculums, several researchers have made calls for enacting further research and curriculum development. After conducting interviews with primary-grade teachers, Korth et al. (2017) concluded that more curriculum support and understanding of developmentally appropriate instructional practices is needed to appropriate foster writing development in the primary grades. While variability in instruction may not be detrimental to student writing growth, it can suggest a lack of “well-articulated” approach to writing instruction that is universally adopted by primary-grade teachers (Coker et al., 2016). Most recently, Costa et al. (2020) suggested developing new writing interventions that embed executive functioning training, and that further research is needed to advance our understanding of how executive functioning and composing processes interact and change over developmental periods.

Curriculum Overview

To begin designing this writing curriculum, I first sought input from teachers currently working with Common Core standards. After consulting with a current kindergarten and first-grade teacher on the targeted Common Core writing standards for the Fall 2020 marking period in Orlando, FL, the author discovered that they were both working with the Common Core standards that were categorized under “text types and purposes.” The author decided to organize the curriculum in a way that would equally target each standard during a nine-week marking period. The curriculum devotes three weeks to each of the three “text types and purposes” standards and provides opportunities for students to write opinion pieces, informational texts, and narratives. Additionally, since the “text types and purposes” standards are very similar for kindergarten and first grade, the same curriculum can be taught to both grade levels.

The following standards were selected from the Common Core state standards initiative for kindergarten (2021b):

1. CCSS.ELA-LITERACY.W.K.1: Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is...*).
2. CCSS.ELA-LITERACY.W.K.2: Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
3. CCSS.ELA-LITERACY.W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.

The following standards were selected from the Common Core state standards initiative for first grade (2021b):

1. CCSS.ELA-LITERACY.W.1.1: Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.
2. CCSS.ELA-LITERACY.W.1.2: Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.
3. CCSS.ELA-LITERACY.W.1.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

The outline of each unit was designed under Bereiter and Scardamalia's (1982) recommendation of successful writing instruction capitalizing on highly patterned routines and use of concrete materials. Each unit is similarly structured to help students execute the cognitive process method of writing by establishing and reenforcing executive functioning routines that are supported by hands-on activities and materials. As students become more familiar with writing routines, the curriculum advances to include more independent writing time and additional routines that require a higher level of executive functioning. One such example of a routine that requires more executive functioning is the "writing buddies" activity that appears in Unit 3, which is inspired by Graham and Harris's (2005b) SRSD approach to writing instruction.

Atwell's (1998) trend of minilessons is heavily incorporated into the curriculum, with instruction focusing on new procedures and writing strategies. Minilessons are designed to help foster a classroom discourse community, where students can practice problem-solving and verbalizing their inner speech (Bizzell, 1982) while executing the three components of executive

functioning. The minilesson also serves as a site for scaffolding instruction to prepare students to execute tasks independently during the writing workshop. As Graham and Harris (2005a) identified, explicitly demonstrating and scaffolding procedures eases the processing demands of new strategies and routines. Scaffolding allows students to practice self-regulation procedures while obtaining concrete, visual representation of their thinking processes and internal dialog (Graham & Harris).

Another essential component of this curriculum is the author's chair strategy, derived from Cahill and Gregory (2016). The author's chair serves as a vehicle and executive functioning support system for participating in the reviewing stage of the cognitive process model of writing. During the author's chair routine, students actively engage in attentional flexibility, working memory retrieval, and inhibitory control. The routine encourages students to shift their focus between peers, recall information to provide compliments and wishes, and execute impulse control to participate in the discourse community. The author's chair is first introduced to students during the second week of the curriculum and remains a routine procedure for each of the three major writing projects.

This writing curriculum honors Atwell's (1998) and Cahill and Gregory's (2016) claims for creating time and space in the classroom for writing routines by providing adequate time for students to participate in the writer's workshop. Following Harwayne's (2001) suggestion for incorporating executive functioning routines into early writing instruction, the first three weeks of the curriculum devotes time to organizing the class for success. Topics for these early minilessons include what a writer is, the writing process, and how to execute writing workshop routines. Additionally, the curriculum incorporates the writer's workshop as a follow-up from the

daily minilesson. This allows students time to engage in strategies and practice self-regulation procedures with scaffolding provided by the teacher during quick one-on-one conferences.

Though the curriculum spans across the nine-week marking period to target each writing standard, it was also designed to leave room for day-to-day adjustments. Since the findings of Coker et al. (2016) and Korth et al. (2017) echo a struggle to find time for implementing writing instruction, the curriculum was designed to utilize four days out of the five-day school week. A four-day instructional week will provide time for accommodating shortened teacher planning days, holidays, substitute teaching, or any other activities that may interrupt the normal school day and classroom writing routines.

Unit 1: Writing Opinion Pieces

The first three weeks of this curriculum is devoted to standards W.K.1 and W.1.1, which specifically targets writing opinion pieces (Common Core State Standards Initiative, 2021b):

1. CCSS.ELA-LITERACY.W.K.1: Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., *My favorite book is...*).
2. CCSS.ELA-LITERACY.W.1.1: Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

The expectations from these standards require that students state and support their opinions about a specified topic or book they are writing about. This curriculum honors this expectation by asking students to write about their favorite book, while providing a framework for how to execute the cognitive writing process. In this unit, students are asked to write about

their favorite book to honor the expectations of the Common Core state standards in which students state the name of the book they are writing about and supply an opinion. Additionally, the use of a favorite book was chosen for this unit to encourage the activation of memory retrieval and create variance in compositions.

At the planning stage, students are introduced to a brainstorm activity that will help to execute long-term memory. Once students have identified their favorite book, they will begin translating their ideas to paper by using a graphic organizer. By the second week, students will be introduced to the author's chair strategy, where they will share their work and provide both positive and constructive feedback in the form of compliments and wishes.

Before beginning minilessons and engaging in the writer's workshop, students will begin learning routines that will help to build the attentional flexibility, working memory, and inhibitory control needed to successfully participate in this curriculum. On day one, students will begin to build their identity as writers through a minilesson that targets who writers are and what writers participate in (e.g., thinking, planning, writing, sharing). On day two, students will be introduced to writing workshop routines and begin placing basic rules and expectations into practice. As students begin to work on their opinion pieces through the cognitive process method of writing, they will also be given ample time to review and practice the concepts introduced during the first two days of the writing curriculum.

	Day 1	Day 2	Day 3	Day 4
Week 1	<p>Objective: Students will develop an understanding of the writing process.</p> <p>Minilesson: Students will participate in a whole-group discussion and create an anchor chart about who a writer is and what they do ²</p> <p>Activity: Students will work in pairs and discuss what a writer's job is.</p> <p>Cognitive process target: planning</p> <p>EF targets: attentional flexibility, working memory</p>	<p>Objective: Students will learn procedures for classroom writing workshops.</p> <p>Minilesson: Introduce basic rules, expectations, and procedures to operate a successful writing workshop inside the classroom³</p> <p>Activity: Students will practice writing workshop routines and procedures during a free write activity.</p> <p>Cognitive process target: planning</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Objective: Students will begin brainstorming for their opinion piece project.</p> <p>Minilesson: Introduce the project. As a class, create a think map of the books read so far in class.⁴</p> <p>Activity: Students will practice completing a think map of their own of all their favorite books by practicing writing workshop routines.</p> <p>Cognitive process target: planning</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>	<p>Objective: Students will begin to organize their ideas by using a graphic organizer.</p> <p>Minilesson: Tell students that you want to write about your favorite book, but you don't know where to start! Using a graphic organizer, demonstrate how to organize ideas through writing and drawing.</p> <p>Activity: Students will start planning their opinion piece by completing their own graphic organizer.</p> <p>Cognitive process target: translating</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>
Week 2	<p>Objective: Students will begin drafting</p>	<p>Objective: Students will begin revising their ideas</p>	<p>Objective: Students will continue drafting</p>	<p>Objective: Students will continue to revise their ideas</p>

² Atwell (1998) stresses the importance of the first minilesson outlining a writer's activities to a group of inexperienced writers. This is to help students understand the processes that go behind writing and shifts the focus away from the final product.

³ Atwell (1998) discusses introducing and practicing workshop rules and expectations. This procedure is meant to implement a routine that will help develop writing habits and provide the executive functioning support needed for students to experiment and grow during the composing process.

⁴ This activity is based on Bereiter and Scardamalia's (1982) metamemorial search activity. The metamemorial search activity is not meant to produce direct content that can be used in writing. Instead, it is used to activate knowledge and make content more accessible in working memory.

	<p>their opinion pieces.</p> <p>Minilesson: Demonstrate how to move ideas from graphic organizer to paper by modeling how to write complete sentences.</p> <p>Activity: Students will continue to work on their graphic organizer OR start their first draft during the writer's workshop</p> <p>Cognitive process target: translating</p> <p>EF target: Attentional flexibility, inhibitory control</p>	<p>and learn to generate more content through the author's chair activity.</p> <p>Minilesson: Using the composition from a "pretend peer,"⁵ invite students to think about the compliments and wishes they had for the author.⁶ Encourage students to point out what they like, ask questions, and make suggestions for the author.</p> <p>Activity: Invite one student to share their draft in the author's chair and receive feedback from their peers.</p> <p>Cognitive process target: reviewing</p> <p>EF target: attentional flexibility</p>	<p>their ideas and work to spell words by using phonetic spelling.</p> <p>Minilesson: Demonstrate to students how to write words using phonetic spelling.</p> <p>Activity: Students will continue to work on their first draft through the following activities: author's chair, writer's workshop, conferences.</p> <p>Cognitive process target: reviewing</p> <p>EF target: attentional flexibility, working memory</p>	<p>and learn to generate more content through the author's chair activity.</p> <p>Minilesson: Implement the author's chair with student compositions. Prompt students to share and provide compliments and wishes.</p> <p>Activity: writer's workshop; conferences.</p> <p>Cognitive process target: reviewing</p> <p>EF target: attentional flexibility, inhibitory control</p>
Week 3	<p>Objective: Students will develop a checklist for their final product.</p>	<p>Objective: Students will continue editing based on feedback provided by their peers and a</p>	<p>Objective: Students will continue editing based on feedback provided by their peers and a</p>	<p>Objective: Students will complete a final draft of their opinion piece.</p>

⁵ Harwayne (2001) suggests introducing students to revisions using a "pretend peer." As students grow more comfortable with the routine, they can begin to critique one another's work.

⁶ This activity is derived from Cahill & Gregory (2016)'s analysis of the author's chair strategy. In this study, students would showcase their compositions by reading out loud to their peers in the "author's chair." Students would then share positive feedback in the form of "compliments," and critiques in the form of "wishes."

	<p>Minilesson: As a class, create a visual checklist⁷ about what student compositions should have (e.g., capital letters, punctuation, spacing).</p> <p>Activity: Students will work on editing their pieces according to the checklist created as a class.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>checklist for their final product.</p> <p>Activity: author's chair; writer's workshop; conferences. During the author's chair activity, encourage students to reflect on whether the author has met the requirements of the checklist.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>checklist for their final product.</p> <p>Activity: author's chair; writer's workshop; conferences. During the author's chair activity, encourage students to reflect on whether the author has met the requirements of the checklist.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Activity: writer's workshop; mini-conferences</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>
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⁷ This strategy is derived from Graham and Harris's (2005b) SRSD approach. Graham and Harris suggest providing a checklist for students to aid in self-monitoring processes. For students in the primary grades, a visual checklist will help with inhibitory control during revisions. Visuals also provide symbolic prompts for primary students who are just learning to read and phonetically write.

Unit 2: Writing Informational Text

The next set of standards, W.K.2 and W.1.2, requires students to write an informational text in which they present facts on a specified topic (Common Core State Standards Initiative, 2021b):

1. CCSS.ELA-LITERACY.W.K.2: Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
2. CCSS.ELA-LITERACY.W.1.2: Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

A key component of these standards is for students to supply factual information in addition to the topic they are writing about. To encourage incorporation of this information, this unit implements a metamemorial search activity originally proposed by Bereiter and Scardamalia (1982). This activity will help to activate working memory, support students in retrieving information about their topic, and provide a framework for students to use during the translating stage. While this curriculum specifies the topic of animals as a familiar entry point for this genre, this can easily be substituted for other nonfiction topics that students may be learning about.

This unit will continue to reinforce writing workshop rules and executive functioning routines. Though the structure is very similar to the previous three weeks, students are expected to become more independent while working with the now familiar minilessons, writer's workshops, and author's chair routine. Additionally, the curriculum for this standard includes more writing workshop days as students grow more familiar with the skills and concepts modeled within minilessons.

	Day 1	Day 2	Day 3	Day 4
Week 1	<p>Objective: Students will understand the purpose of informational texts.</p> <p>Minilesson: Share two book covers with the class (these can be books you already read) of one fiction book and nonfiction book. As a class, discuss the differences between the two. Draw attention to how an informational text includes facts and realistic drawings or photographs.</p> <p>Activity: Create a class anchor chart of informational text vs. fiction text.</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>	<p>Objective: Students will be introduced to the project and begin brainstorming ideas for an informational text.</p> <p>Minilesson: As a teacher, share your favorite animal with the class. On chart paper, brainstorm by listing isolated words and drawings related to this animal.⁸ Have students assist with adding facts to the chart paper and encourage phonetic spelling.</p> <p>Activity: With a partner, have students discuss facts and features of their favorite animal. Then, have students independently complete the same brainstorming exercise.</p> <p>Cognitive process target: planning</p> <p>EF targets: attentional flexibility, working memory</p>	<p>Objective: Students will begin organizing ideas for their informational text.</p> <p>Minilesson: Tell students that you want to write about their favorite animal, but don't know where to start! Using a graphic organizer, model how to begin the composing process by first introducing the animal (e.g., my favorite animal is...), then providing one detail based on the from yesterday's brainstorming activity.</p> <p>Activity: Students will begin working on their own graphic organizer.</p> <p>Cognitive process target: translating</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>	<p>Objective: Students will organize ideas for their informational text.</p> <p>Minilesson: Demonstrate how to move ideas from graphic organizer to paper by modeling writing complete sentences.</p> <p>Activity: Students will continue to work on their graphic organizer OR start their first draft during the writer's workshop and conferences.</p> <p>Cognitive process target: translating</p> <p>EF targets: attentional flexibility, inhibitory control.</p>

⁸ This activity is based on Bereiter and Scardamalia's (1982) metamemorial search activity.

Week 2	<p>Objective: Students will continue drafting their informational text.</p> <p>Minilesson: Review the graphic organizer that was presented to students last week. Model how to move ideas from the graphic organizer to the first draft.</p> <p>Activity: Students will continue working on their first drafts in the writer's workshop and during conferences.</p> <p>Cognitive process target: translating</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>	<p>Objective: Students will understand how informational texts are written for an audience.</p> <p>Minilesson: Why do we want to share facts about our favorite animals? Facilitate a class discussion and create an anchor chart for who the potential audience may be for students.</p> <p>Activity: Create a class anchor chart of potential audiences for informational text.</p> <p>Cognitive process target: planning</p> <p>EF target: attentional flexibility</p>	<p>Objective: Students will understand what revising is and implement revision strategies using the author's chair.</p> <p>Minilesson: As a class, discuss how good writers revise and edit their work⁹ and create a think map of their responses. Demonstrate to students how they can help their peers revise their work by reviewing and implementing the author's chair routine.</p> <p>Activities: author's chair</p> <p>Cognitive process target: reviewing</p> <p>EF target: attentional flexibility, inhibitory control</p>	<p>Objective: Students will continue revisions by using the author's chair activity.</p> <p>Activities: Author's chair; writer's workshop; mini-conferences</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>
Week 3	<p>Objective: Students will develop a checklist for their final product.</p> <p>Minilesson:</p>	<p>Objective: Students will continue editing based on feedback provided by their peers and a checklist for their final product.</p>	<p>Objective: Students will continue editing based on feedback provided by their peers and a checklist for their final product.</p>	<p>Objective: Students will complete a final draft of their informational text.</p>

⁹ When teaching the composing process to her students, Atwell (1998) incorporates a minilesson that focuses on why writers conduct revisions. It is important for students to understand why writers review and edit their work. This lesson will also help students build connections as to why they continually revise their compositions before it is "published" as a final product.

	<p>As a class, create a visual checklist about what student compositions should have (e.g., capital letters, punctuation, spacing)</p> <p>Activity: writer's workshop/mini-conferences. Students should be working on editing their pieces according to the checklist created as a class.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Activity: author's chair; writer's workshop; conferences. During the author's chair activity, encourage students to reflect on whether the author has met the requirements of the checklist.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Activity: author's chair; writer's workshop; conferences. During the author's chair activity, encourage students to reflect on whether the author has met the requirements of the checklist.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Activity: writer's workshop; mini-conferences</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>
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Unit 3: Writing Narratives

The final three weeks of this nine-week writing curriculum focuses on the Common Core standards for writing narratives (Common Core State Standards Initiative, 2021b):

1. CCSS.ELA-LITERACY.W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
2. CCSS.ELA-LITERACY.W.1.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

During the revision process, students will participate in a new routine called “writing buddies,” which was inspired by Graham and Harris’s (2005b) peer revising strategy in the SRSD approach. Similar to the author’s chair routine, students will provide their “writing buddies” constructive criticism through compliments and wishes. This strategy is specifically implemented in the final unit after students become familiar with whole-group peer review procedures. Students should be able to take their experiences with listening and providing feedback in this setting and apply it to the new “writing buddies” routine. This routine was also incorporated into the final unit because it requires a greater amount of executive functioning. Outside of whole-group instruction, students must rely on their attentional flexibility, working memory, and inhibitory control to stay on task with their partner and execute the “writing buddies” routine with little monitoring from the teacher.

Since standard W.1.3 requires first-grade students to use temporal words, this unit will implement sentence frames, a strategy derived from Bereiter and Scardamalia’s (1987) suggestions for activating working memory. These sentences frames are meant to help students organize the sequence of events in their narrative by using words such as first, next, then, and last. These sentence frames also assist students in the planning and translating stages of composing, as it provides an outline for transferring internal ideas into external thoughts. Kindergarteners are not required to use temporal words in their writing to meet this unit’s Common Core standard; however, it is recommended to begin exposing these students to temporal sequencing as a strategy they can use when engaging in the cognitive process model of writing.

	Day 1	Day 2	Day 3	Day 4
Week 1	<p>Objective: Students will begin brainstorming for their narrative project.</p> <p>Minilesson: Model how to create a think map by brainstorming recent trips that you took.</p> <p>Activity: Students will begin drafting their own think map using drawing and phonetic spelling.</p> <p>Cognitive process target: planning</p> <p>EF target: attentional flexibility, working memory</p>	<p>Objective: Students will begin organizing and sequencing their ideas.</p> <p>Minilesson: Demonstrate how to use a graphic organizer to sequence events¹⁰ and use temporal words to signal event order.</p> <p>Activity: Students will independently work on their graphic organizer during the writer’s workshop and conferences.</p> <p>Cognitive process target: planning</p> <p>EF target: attentional flexibility, working memory, inhibitory control</p>	<p>Objective: Students will begin a first draft of their narrative text.</p> <p>Minilesson: Demonstrate how to use the graphic organizer to create full sentences in a first draft.</p> <p>Activity: writer’s workshop; mini-conferences</p> <p>Cognitive process target: translating</p> <p>EF targets: attentional flexibility, inhibitory control.</p>	<p>Objective: Students will continue drafting their narrative text.</p> <p>Activity: writer's workshop; mini conferences</p> <p>Cognitive process target: translating</p> <p>EF targets: attentional flexibility, inhibitory control.</p>
Week 2	<p>Objective: Students will continue drafting and begin revisions by using the author’s chair activity.</p>	<p>Objective: Students will participate in peer review using the “writing buddies” strategy.¹¹</p>	<p>Objective: Students will work independently to apply peer revisions.</p>	<p>Objective: Students will continue to apply peer revisions to their narratives.</p>

¹⁰ Since first-grade students will be required to use temporal words to signal event order, this lesson incorporates Bereiter and Scardamalia’s (1982) suggestion of using sentence frames to prompt idea generation.

¹¹ This strategy was inspired by Graham and Harris’s (2005b) peer revising strategy. Graham and Harris identify peer revisions as an essential component of revision, as the peer acts as a representative of a greater audience. Including peer revision is essential for making the audience an integral part of the composing process.

	<p>Activities: Author’s chair; writer’s workshop; mini-conferences</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Minilesson: Choose one student volunteer to model with you how to conduct peer revisions. While the student shares their work, you will model how to provide compliments and wishes.</p> <p>Activity: Students will divide into their new “writing buddy” pairs and provide feedback to one another. Call on groups to share what they discussed with their partners and how they will be making revisions.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>Activity: writer’s workshop; mini-conferences</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>	<p>Activity: Students will return to work with their “writing buddies” and discuss the changes they made to their narratives with their partner. Have student volunteers share with the class the changes they have made to their narratives.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, working memory, inhibitory control</p>
Week 3	<p>Objective: Students will develop a checklist for their final product.</p> <p>Minilesson: As a class, create a visual checklist about what student compositions should have (e.g. capital letters,</p>	<p>Objective: Students will continue editing based on feedback provided by their peers and a checklist for their final product.</p> <p>Activity: author’s chair; writer’s workshop; conferences. During the author’s chair</p>	<p>Objective: Students will continue editing based on feedback provided by their peers and a checklist for their final product.</p> <p>Activity: author’s chair; writer’s workshop; conferences.</p>	<p>Objective: Students will complete a final draft of their narrative.</p> <p>Activity: writer’s workshop; mini-conferences</p> <p>Cognitive process target: reviewing</p>

	<p>punctuation, spacing).</p> <p>Activity: writer's workshop/mini-conferences. Students should be working on editing their pieces according to the checklist created as a class.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>activity, encourage students to reflect on whether the author has met the requirements of the checklist.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>During the author's chair activity, encourage students to reflect on whether the author has met the requirements of the checklist.</p> <p>Cognitive process target: reviewing</p> <p>EF targets: attentional flexibility, inhibitory control</p>	<p>EF targets: attentional flexibility, inhibitory control</p>
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Sample Lesson #1: Introducing the Author's Chair Strategy

Unit goal: Students will use a combination of drawing, dictating, and writing to compose an opinion piece about their favorite book.

Lesson Objective: Students will provide constructive feedback during revision stages through the implementation of the author's chair routine.

Standards:

1. CCSS.ELA-LITERACY.W.K.1: Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is...).

2. CCSS.ELA-LITERACY.W.1.1: Write opinion pieces in which they introduce the topic or name the book they are writing about, state an opinion, supply a reason for the opinion, and provide some sense of closure.

Materials:

- Example from a “pretend peer” to display that includes the sentence “My favorite book is _____ because _____.”
- Chair (to be used as the “author’s chair,” placed in the front of the whole-group gathering space)

Anticipatory Set

Prior to this lesson, students will have participated in the planning and translating phases of the cognitive process method of writing. The students will have used different strategies that support executive functioning routines, including metamemorial memory searches through think time to develop their ideas independently and receive quick, one-on-one conferences with the teacher. Before this lesson, students should have a complete first draft of their opinion piece of their favorite book.

Instruction

1. Gather students for a whole-group meeting. Tell students that today some friends will be able to share their work with the class.
2. Share the example of the “pretend peer” with the class. You can state: “boys and girls, I am going to show you my friend’s writing. He is also writing about his favorite book. I want you to think about things you like about his writing that we can share with him!”

3. Start to talk out loud and model how to provide a compliment. You can state “I like how my friend tells us why he likes this book!” or “I like how my friend drew his favorite part of the story!”
4. Provide students a few minutes to think to themselves OR have them discuss in pairs what they like about the composition. When the class is ready, call on a few students to share what they like. Provide prompting for them to elaborate on what they like (e.g., “why do you like this?”).
5. Once students are done sharing what they like, now it is time to introduce wishes. Tell the class “now that we have given my friend some compliments about their writing by telling him what we like, we are now going to give him wishes, to tell him what he can add to his writing!”
6. Talk out loud and model how to provide a wish. You can state “I wish that my friend would tell us a little bit more about his story” or “I wish that my friend can add more detail to his picture!”
7. Provide students a few minutes to think to themselves OR have them discuss in pairs what they wish the composition would include. When the class is ready, call on a few students to share their wishes. Provide prompting for them to elaborate on what they want from the composition (e.g., “why do you wish my friend would include this?”)
8. Tell students that we will now be able to share our compliments and wishes with our classmates as they continue to work on their writing in the author’s chair.
9. Choose one student with a complete or almost-complete draft to share their work. Have them sit in the author’s chair in front of their classmates. Ask the student to read their composition and provide details on their drawing.

10. With prompting and support, ask the class to first provide compliments by stating “I like...”
11. With prompting and support, ask the class to provide wishes by stating “I wish...”
12. When the activity is completed, have students independently work on their writing in the writer’s workshop.

Assessment:

During today’s writing workshop, make sure to visit the students that received feedback from their classmates in the author’s chair. Discuss with the student the compliments and critiques they received. Focusing on the wishes, ask students what they can add/revise to their compositions.¹²

Sample Lesson #2: Organizing Ideas

Unit goal: Students will use a combination of drawing, dictating, and writing to compose an informative/explanatory text about their favorite animal.

Lesson Objective: Students will practice the translating stage of the cognitive process method of writing and organize their ideas using a graphic organizer.

Standards:

1. CCSS.ELA-LITERACY.K.2: Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.
2. CCSS.ELA-LITERACY.W.1.2: Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.

¹² As an accommodation, teachers can provide a visual checklist on a post-it or index card of what the student recalled and what they would like to add to their opinion pieces.

Materials:

- Think map of favorite animals (created in the previous lesson)
- Three-squared graphic organizer presented on either chart paper, whiteboard, projector, or Smartboard
- Copies of the three-square graphic organizer
- Markers

Anticipatory Set

Students have already completed an assignment using the cognitive process model of writing and have participated in writing workshop activities and routines. Prior to this lesson, students will have participated in a metamemorial search of information about their favorite animal through peer discussions and the completion of a think map. Students should have activated prior knowledge of their favorite animal, which will be transcribed in today's activity.

Instruction

1. Tell students that you want to write about their favorite animal, but you don't know where to start. Ask students if they remember what they used for their previous project to help them start writing. Students should recall that they used a graphic organizer to help them write down their ideas.
2. Review the think map that was created yesterday. Remind students of your favorite animal, as well as the facts that were listed during the brainstorming/metamemorial search activity.
3. Present the graphic organizer to the class. Tell students you want to write two sentences and draw a picture of your favorite animal. Thinking out loud, tell students what you are

writing down in the graphic organizer. Write your first sentence in the first box by stating “My favorite animal is a _____.”

4. Prompt students to think about which fact should go in the next box of the graphic organizer. You can say “now that I have a sentence introducing my favorite animal, I need one more sentence to put in the second box! Maybe you can help me. Since you are my audience, what is something you want to know about my favorite animal?”
5. After you have answered some of the audience’s questions, decide on the fact that you want to include in the graphic organizer. Model how to write this fact using high-frequency words (e.g., can, have, are) and phonetic spelling.
6. Finally, ask students what you should draw in the third box to go with your animal fact.

The completed graphic organizer can look like this:¹³

My favorite animal is a dolphin.	Dolphins can swim fast!	(drawing of dolphin swimming)
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7. During the writer’s workshop, students will complete the graphic organizer independently.

Assessment:

The teacher will conduct mini-conferences during the writer’s workshop to assess student progress. Teachers can also assess progress in the following lesson, where students will be moving ideas from their graphic organizer to composition paper.

Sample Lesson #3: Creating a Final Checklist

Unit goal: Students will use a combination of drawing, dictating, and writing to narrate appropriately sequenced events using temporal words and provide a reaction to what happened.

¹³ As a modification, graphic organizers can include pre-printed sentence openers to help students generate ideas. Sentence openers can aid children in searching for new content for composition (Bereiter & Scardamalia, 1982).

Lesson Objective: Students will collaborate to create a visual checklist to be used while revising their narrative compositions.

Standards:

1. CCSS.ELA-LITERACY.W.K.3 Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened.
2. CCSS.ELA-LITERACY.W.1.3 Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure.

Materials:

- Anchor chart paper: one with an example “final” composition and one blank
- markers

Anticipatory Set:

Prior to this lesson, students will have participated in planning, translating, and reviewing their compositions over the course of two weeks. Students should have a complete first draft that is ready for editing or should be almost complete with their first draft. Students will also have experience creating a checklist from their previous writing projects.

Instruction:

1. Conduct the author’s chair activity with one or two students.
2. Tell students that they will be creating a checklist to help them edit their final draft. Ask the class what they would use a checklist for and prompt responses.

3. Present your final draft example. You can call on a child to read the composition out loud, have volunteer students take turns reading sentences, or have the class choral read the composition.
4. Pair students off into groups of two. Ask them to discuss with their partner what they notice about your final draft example (e.g., capital letter at the beginning of a sentence, period at the end of a sentence).
5. As a class, discuss what the students noticed about the final draft.
6. As you review what students noticed about the draft, begin creating the checklist. Using a blank anchor chart, create a visual checklist that students can reference while editing their own compositions. Be sure you are using simple language and pictures for each bullet point. Some example bullet points can include: capital letters, periods, temporal words (first, next, then, last, etc.)
7. Leaving the anchor chart on display, let students work independently on editing their final drafts and working to meet the requirements of the checklist.¹⁴

Assessment:

Teachers can conduct an informal assessment while conducting mini conferences during the writing workshop. Teachers can formally evaluate student compositions and whether they met the requirements created as a whole class when assessing their final drafts.

Conclusion

This thesis has explored the lack of universal direction in how to provide instruction of the writing process to meet Common Core standards. Even with the implementation of Common Core standards, national assessment data has shown that students are not performing to grade

¹⁴ As an accommodation, provide a copy of the checklist for students to keep at their desk.

level expectations in writing. In an effort to mitigate these barriers, the proposed curriculum aims to provide a developmentally appropriate method of engaging students in the cognitive process model of writing through executive functioning routines. While the composing process requires a great amount of executive functioning ability, young students can begin to navigate the three stages of planning, translating, and reviewing with proper strategies and executive functioning support in place. The curriculum and lesson plans demonstrate how the cognitive process model of writing can be taught to kindergarten and first-grade students if routines that support executive functioning building are emphasized. While students are engaging in these curated strategies through minilessons and writer's workshop activities, they are also practicing skills that build attentional flexibility, working memory, and inhibitory control. Additionally, the design of this thesis supports the argument for supplying quality writing instruction and educating students in writing-based strategies in the primary grades. If students begin to learn strategies that will help them create and improve their compositions, they will be more equipped to meet the expectations of national writing standards that are assessed in later grades.

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