

Teaching models of disciplinary argumentation in middle school social studies: A framework for supporting writing development

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Abstract: Modeling, by demonstrating and explaining the cognitive processes involved in writing, has been shown to support writing development. Less often have specific disciplinary aspects of teaching with models been investigated. We draw on research in English Language Arts and apply it in social studies inquiry contexts to propose a framework for teaching models of thinking and writing that offers teachers and researchers new perspectives on the discipline-specific work of modeling. This framework accounts for three modes of instruction – *use of models (a tool or a text)*, *demonstrating and explaining*, and *co-constructing model texts with students* – and describes eleven instructional practices that support instruction across these modes. We analyze data from three years of social studies instruction to show how two teachers enact these practices across the three modes to highlight the disciplinary thinking and processes that support writing social studies arguments with sources, highlighting the ways students can actively participate in teaching writing with models. In addition, we consider the role of the curriculum in this work. We show how writing instruction can address disciplinary ways of thinking in social studies and illustrate the potential of the framework for guiding researchers' and practitioners' work on writing instruction across disciplinary contexts.

Keywords: disciplinary literacy, writing instruction, teacher quality, composition, strategy instruction



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Modeling, in which processes and strategies are demonstrated and explained, is often positioned as a key instructional practice and a necessary aspect of strategy instruction when teaching writing. Researchers also suggest the importance of offering students models of the texts they are being asked to write (Graham et al., 2013; Graham & Perin, 2007). These two approaches to teaching writing – explaining or demonstrating and using a model – are sometimes conflated in the term *modeling*. At the same time, we have few research-based examples that emphasize what the interactional nature of teaching with models looks like in classrooms or the disciplinary thinking that needs to be modeled to support decision making while writing. Here, we offer examples from a social studies context, demonstrating how dialogue between teacher and students unfolds during writing instruction where teachers use model texts and tools and demonstrate their thinking and decision making to support students in writing arguments with sources. We propose an elaborated framework of writing instruction that offers researchers and teachers new insights into the ways modeling can be conceptualized and studied as *teaching models of writing and thinking*, a phrase we use here to encompass these various approaches to teaching writing explicitly.

In their meta-analysis of effective writing instruction, Graham and Perrin (2007) include *modeling* as a necessary component, finding that “students had to be shown how to use the strategy (i.e., through modeling)” and suggesting that the “study of models” has an impact when “... students examin[e] examples of one or more specific types of text and ... emulate the patterns or forms in these examples in their own writing” (p. 450). Graham, Gillespie, and McKeown (2013) describe “highly effective literacy teachers” as modeling strategies for planning, drafting, revising, and editing by showing students “how to use the target strategies and providing students with assistance in applying them, until they can use them independently” (p. 12). In teacher education research, modeling is framed as a high-leverage practice that supports student learning as teachers visibly enact the activities that they expect their students to engage in as they write (e.g., Alston, 2012; Cohen, 2015; Graham et al., 2013).

Here we address the extent to which modeling writing – and teaching with models more broadly – is shaped by the disciplinary nature of the thinking involved in achieving the instructional goals. We draw on a framework for *teaching models of thinking and writing* developed through research in English language arts (ELA), where students write literary analysis and persuasive essays (Alston, 2012; Alston & Danielson, 2020; McGrew, Alston & Fogo, 2018). Research on explicit writing instruction often lacks a disciplinary lens or a way of connecting writing to disciplinary thinking; instead, such research often focuses on larger processes of planning, drafting, and revising or providing examples of the text types to be written (e.g., Graham & Harris, 2018). In addition to better understanding of the disciplinary thinking involved in teaching writing with models, more detailed examples of the

interactional nature of teaching writing with models is needed so that researchers and teachers can recognize a range of approaches to teaching writing with models (i.e., not just pointing out features of mentor texts (Fisher & Frey, 2016; Hillocks, 2011)).

The framework we draw on positions teaching writing with models as a set of practices that co-occur across three different modes of instruction – use of a model (a text or tool), explaining and demonstrating, and co-constructing a model text with students. These different modes are not often distinguished in research in the U.S., where *use of a model* may be conflated with the kind of *thinking aloud through explaining and demonstrating* that is needed to support students' cognitive engagement; in addition, we highlight the ways interactional work through *co-construction* of models can play an important role in supporting students' disciplinary thinking and engagement. Disciplinary thinking and engagement is critical to learning to write in a particular content area, as students not only need to employ effective strategies and processes to structure a particular genre, but also need opportunities to develop key disciplinary practices in order write texts that achieve the learning goals specific to different tasks in different subject areas (Monte-Sano, 2010).

We situate our study in two middle school (6th and 7th grades; students aged 11 and 12) social studies classrooms where students are learning to analyze and draw evidence from sources to make a disciplinary argument about a social or historical issue. We use Alston's framework to examine the ways the teachers drew on 11 instructional practices and the three modes of instruction to explicitly teach social studies argument writing. We describe how these teachers interacted with students about thinking and writing in ways that externalize the cognitive, disciplinary work of writing arguments with sources, highlighting the disciplinary ways of thinking that are particular to the social studies domain (e.g., assessing the credibility of sources or corroborating sources in light of a compelling question). In doing so, we attend to the disciplinary nature of writing instruction (Monte-Sano & Allen, 2019) offering detailed exemplification and discussion of the thinking and writing processes needed to argue with sources, and drawing particular attention to instructional practices that externalize thinking and engage students in the cognitive, disciplinary work of social studies argument writing.

1. Theoretical Framework

Our conception of teaching models of thinking and writing draws on theories of assisted performance and cognitive apprenticeship to frame the ways we understand interactions in classrooms where students and teachers engage in inquiry and disciplinary thinking while writing. This framing enables us to foreground the often-invisible cognitive processes involved in successful

argumentation with sources during social studies investigations and extend findings from ELA classrooms to another discipline.

1.1 Teaching Disciplinary Thinking and Writing

We conceptualize teaching models of thinking and writing with sources as a kind of assisted performance (Tharp & Gallimore, 1988) that explicitly highlights (Goodwin, 1994), raises awareness (Englert et al., 2006), and builds community (John-Steiner & Meehan, 2000). Along with assisted performance, we bring a cognitive apprenticeship approach to literacy and knowledge development, where the disciplinary thinking and decision making of teachers and students is foregrounded and made visible to support students in subject-specific writing (Brown, Collins, & Duguid, 1989; Collins, Brown, & Holum, 1991). Assisted performance and cognitive apprenticeship suggest that students can be supported to make their own effective writing choices. As in Braaksma and colleagues' (2004) work, our framework supports instructional practices that encourage student collaboration in noticing and co-constructing models of the thinking and decision-making undergirding the writing, emphasizing dialogic teaching and learning. In addition, our framework takes advantage of the ways observational learning can reduce the learner's cognitive load as teachers display the disciplinary thinking and decision-making involved in composing (Braaksma et al., 2004).

In this way our framework leverages three modes of instruction—use of a model, explaining and demonstrating, and co-constructing a model text – that are associated with explicit writing instruction, and that often occur together. We see each instructional mode as an approach to teaching writing with models that may co-occur with other modes as the goals of instruction shift across a lesson. *Use of models* as a mode prioritizes understanding the features of the model being investigated – in this case, tools or texts. *Explaining and demonstrating* prioritizes making visible the disciplinary thinking and decision-making needed to create the text. *Co-constructing* works to engage students in collaboratively developing a model text. We show below how these three modes work together in the unfolding of instruction that makes both writing processes and disciplinary thinking explicit.

Our framework also includes a set of eleven instructional practices that can be engaged across the three modes (See Table 1). These range from concrete, foundational practices, such as *providing a visual representation* through a model (tool or text) or *highlighting features* of the model being studied, to more complex, metacognitive practices, such as *highlighting processes* specific to writing in disciplinary ways, or *highlighting the significance of the author's moves in the text*. These practices support instruction that engages students in collaboratively investigating *what* the important features of a model text are, *how* writers engage in the disciplinary processes that support composing such a text, and *why* these features and processes are significant to the particular genre (Alston, 2012; Brown

& Palinscar, 1986; Goodwin, 1994; Moore, 2019). Alston (2012) has shown that students who participated in such instructional contexts in ELA subsequently engaged in extended writing, improved on standardized writing assessments, felt their contributions were taken up in class, and reported increased persistence with writing.

This framework of modes and practices also identifies how teachers and students can jointly engage in the thinking and decision-making needed to write in disciplinary ways, co-constructing models through dialogic interaction. It emphasizes and centers metacognitive talk with mentor texts and other supports, including drafts of student work, that illuminates the processes and ways of thinking needed to achieve the writing goals. At its best, teaching writing with model texts orients students to the steps they need to take, but also makes visible the disciplinary thinking and decision-making authors engage in as they write.

Table 1: Research-Based Framework for Teaching Models of Thinking and Writing: Instructional Practices (based on Alston, 2012; Alston & Danielson, 2020; McGrew et al., 2018)

Instructional Practice	Description	Example from Social Studies
Orienting students visually through a representation (<i>visually</i>)	Teacher focuses students' attention on an example of the historical argument writing genre.	Teacher presents a model that the class will complete to show how different claims can be supported by the sources they have read.
Highlighting features of the text (<i>features</i>)	Teacher points out and/or engages students in naming features of the text, (e.g., claims, evidence, quotation marks).	Teacher asks students to identify claim, evidence, and reasoning/judgment.
Demonstrating or engaging students in annotating the text (<i>noting</i>)	Teacher makes notes on a model or has students mark features of a model to identify key thinking or writing moves.	Teacher asks students to note the claim, evidence, and reasoning on a mentor text.
Engaging students in talk about the text (<i>engaging in talk</i>)	Teacher elicits students' thinking about an aspect of the text.	Teacher asks students "what's the claim in the model...how do you know it's the claim? How does the author explain that the evidence supports the claim?"
Highlighting processes involved in thinking about or	Teacher identifies steps students need to take as they write (e.g., how to select evidence).	Teacher: "Step 1, you need to state what argument you are rejecting..." "then you are going to pick evidence from the four articles..." "and then

creating the text (<i>processes</i>)		you are going to explain how those support your position"
Highlighting intertextual connections (<i>intertextuality</i>)	Teacher makes a visible connection or reference to another text - this could be a source that students have read, a mentor text or other scaffold, or a student-created text.	Teacher: "I want to share with you a strong piece of writing that can be made stronger." Teacher reads a student's writing out loud, pauses and says to the class: "that's the place to bring in the evidence... when you say there's stronger evidence, that's when you go to source whatever and say 'as noted in Source 2'..."
Orienting students metacognitively by externalizing thinking about the disciplinary practice (<i>metacognitively</i>)	Teacher highlights the driving disciplinary purpose and the reasoning for the practice being enacted by, for example, thinking aloud or prompting students to share their thinking.	Students read an author's claim and evidence. Teacher: "So the author has presented his claim. He knows what he's going to use to support it. This is his evidence. Now if he said that to me, I'd say to him, 'so what?' and his answer to my 'so what' question is going to be here [points to where students are to write their reasoning]."
Explicitly marking the global, transferrable and disciplinary nature of the processes teachers are explaining and demonstrating for students (<i>globally</i>)	Teacher notes that this is a practice that could be used beyond the immediate task; how this is useful to them beyond the particular task they're working on, why this kind of work matters.	Teacher: "Why do we look at examples and mentor texts before...you ...do a writing task? ...It's something that helps you become a better writer... when I'm writing, I look at mentor texts because it helps me figure out what to write."
Highlighting the significance of the author's moves in the text (<i>significance</i>)	Pointing out or making visible the importance of an author's (source author, mentor text author, teacher, student writer) moves or choices. Highlights WHY someone might make this move, what they were attending to, why they made the choices they did as they wrote.	Teacher projects student work, reads aloud. Teacher: "I noticed that some of us are having trouble with the reasoning piece. Laura just said this student did an amazing job with the reasoning piece. Laura, where is the reasoning?" Laura: "This showed in source 1..." Teacher: "yeah, that last sentence is the reasoning here; it's making the connection between the claim and the evidence."
Providing feedback to students about how to emulate the	Teacher offers students specific directions or advice about how to include features from	Teacher partners with a student to model how to do peer revising. Student reads their writing aloud. Teacher: "I'm already seeing

disciplinary task (<i>feedback</i>)	model texts into their own writing, once they have drafts to review.	evidence, what evidence did he use? ...yea he has a quotation, I'm looking for the explanation part, let's flip over and keep going. ... as I'm reading, I'm noticing that he didn't do a lot of explanation, one of the strengths is that a lot of evidence is cited ...When I think about things to improve, I'm going to say something about adding explanation."
Engaging students in recapping a process that has been modeled (<i>recapping</i>)	Teacher guides students to name features or steps in the thinking or writing process highlighted during modeling.	Teacher: (after modeling how to include evidence on a graphic organizer): "What kind of information do I want right here? It says something about evidence, but what specifically should I have?" Student: "The date...where it comes from." Teacher: "Okay, author and date. What else?" Student: "Attribution" Teacher: "Okay and then what do you do next?" Student: "Then describe important examples" Teacher: "So those are the things you include in your evidence box."

1.2 Disciplinary Thinking and Writing

While we ground our conception of teaching with models in ELA research, we draw on research on historical reasoning and writing to conceptualize the cognitive processes involved in thinking and writing with sources. Because writing research in the school subject of social studies is rooted in the domain of history rather than other social sciences (i.e., civics, economics, geography), our work is grounded in history education research that frames argument writing with sources as key to supporting disciplinary thinking that is interpretive (De La Paz et al., 2017; Monte-Sano, 2010; Monte-Sano & Allen, 2019).

Historical reasoning is conceptualized by van Drie and van Boxtel (2008) as describing change, comparing, and explaining by asking historical questions and contextualizing evidence from sources. It involves engaging in argumentation that uses disciplinary concepts such as cause and effect to put forward a claim and support it, taking opposing positions into account. Their framework integrates seminal findings by Wineburg (1991) about how historians reason with sources by recognizing who created the sources and why, and by situating sources in the time and place they were created to understand and contextualize the authors' perspectives. Van Drie and van Boxtel (2008) call for instruction that supports

students in this challenging work by creating opportunities for students to practice historical reasoning through dialogue with the teacher and other students and through writing tasks that support this kind of reasoning. They acknowledge the complexity of such instructional work.

Building on Wineburg (1991), Monte-Sano's (2010; 2019) research on writing with sources found that when students write historically, they are actively involved in constructing new knowledge by corroborating and weighing evidence to determine what claims can be supported by sources. The intellectual work of historical writing further entails selecting and including relevant evidence to bolster a claim, revising claims in light of other evidence, and explaining how the evidence cited develops the argument and why it is credible and useful in building the argument. Using these disciplinary thinking practices when writing with sources contributes to the persuasiveness of social studies arguments (Monte-Sano, 2010). Because writing that involves historical reasoning is rooted in active work with sources, the historical writing process begins with reading and analysis of sources and the nature of the resulting arguments is interpretive and tentative. That is, thinking and writing with sources ideally represents "knowledge transformation" more than "knowledge telling" (e.g., Bereiter & Scardamalia, 1987), and so may differ from opinion or persuasive writing found in other content domains or from other argument writing in social studies that positions students to recall and report information (Monte-Sano & Allen, 2019).

These disciplinary goals are complex, and novices need time and explicit instruction to achieve them. Indeed, in their 18-day intervention spread over one academic year with 14-year-olds in US 8th grade schools, De La Paz and colleagues (2017) found that explicit instruction in the disciplinary thinking embedded in reading and writing with sources supported students' progress. In assessing the students' thinking embedded in writing, they decomposed features of disciplinary argumentation (see Tables 3-6, pp. 41-42), distinguishing between more emergent and complex disciplinary thinking. For example, as students recognized the perspective of the authors of sources as evidence for their claims, lower-scoring essays revealed emergent thinking by mentioning the author's name, whereas higher-scoring essays revealed more complex thinking by using information about the author to evaluate the author's perspective or position as a reporter (De La Paz et al., 2017, p.41). In reasoning about the context of the sources they used as evidence, students who expressed more emergent thinking in their essays shared details about the context while essays with more complex thinking elaborated on why that context mattered to the credibility of the evidence and the strength of the argument (De La Paz et al., 2017, p. 41).

Teaching students to engage in more complex thinking may at times be supported by similar instructional practices in different disciplinary areas – whether in ELA (Alston, 2012; Alston & Danielson, 2020; McGrew et al., 2018) or history

(Monte-Sano & Allen, 2019) - sometimes focusing on complex intellectual work in the discipline and sometimes focusing on procedures, text structures, or language features, with the overarching goal of supporting all students' growth in thinking and writing with sources. However, the different ways of thinking, different kinds of texts, and different genre expectations in the different disciplines also suggest that there will be important differences for teachers to attend to. Therefore, we are interested in what an ELA framework that centers explicit instruction and complex intellectual work allows us to see in writing instruction in a history context.

1.3 Our Focus

In this study, we examine two social studies teachers' writing instruction over three years of partnership in developing, testing, and refining a curriculum that effectively supported middle school students' growth in social studies argument writing with sources (Monte-Sano & Allen, 2019). Within this context, we explore how they engaged students in the disciplinary thinking that is foundational to social studies argument writing with sources and we characterize the intricate work of teaching disciplinary thinking and writing with models by extending the instructional framework (Alston, 2012; Alston & Danielson, 2020) beyond ELA into a social studies context. Specifically, we ask:

- a. Given a research-based inquiry curriculum focused on social studies argument writing with sources, how did two teachers support students' disciplinary thinking and decision-making when writing through their teaching with models?
- b. What curriculum resources supported teachers' disciplinary thinking and writing instruction in this context?

2. Methods

This study is part of a four-year project that used design-based research (Brown, 1992) to develop and iteratively examine how middle school social studies teachers and their students made sense of a curriculum designed to support inquiry learning and argument writing. In the larger project, we found that students' social studies argument writing with sources improved significantly as they participated in classrooms where teachers used the curriculum (Monte-Sano & Allen, 2019). Here we use case study methods (Yin, 2013) to investigate how teachers explicitly taught social studies argument writing with sources in two of the classrooms where we observed student growth.

2.1 School Context

Starling Middle School is an ethnically, racially, and linguistically diverse public middle school, serving grades 6 through 8, in a small midwestern city in the United States: about one third of the student population identifies as White (including a

significant Arab-American population; the lists available to record ethnicity in school records do not include a category for Middle Eastern heritage), one third as Black, 18% as Latinx, 9% as biracial, and 8% as Asian American. The state categorizes 52% of the student population as “economically disadvantaged” and 13% of the students as English learners (a larger percentage of students are bilingual but are not ‘designated’ English learners at this point in their development). Within its school district, Starling’s population of 577 students was among the lowest socioeconomic strata, the most diverse ethnically and racially, and had historically been marginalized.

Starling administrators and teachers sought us as partners with the goal of providing rich opportunities for their students to participate in social studies inquiry and improve students’ writing and disciplinary learning. This initiative was motivated by the school’s recognition that Black students and students from lower SES households at Starling had significantly lower test scores in writing and social studies. School leaders and teachers wanted to ensure high-quality learning opportunities that would position all of their students to be successful. A strong administration and teaching staff, a university-school partnership, and authorization as an International Baccalaureate Middle Years Programme half-way through our study all contributed to the educational opportunities provided there.

2.2 Participants

Across the four-year project, seven teachers at Starling Middle School (all names are pseudonyms) participated in co-developing and testing an inquiry-based curriculum, talking with us about their experiences and sharing student work. Of those seven, we focus here on two teachers – Mr. Kerr and Ms. Hurley – because they participated across all four years, engaged thoughtfully with the curriculum, and agreed to have us video record their teaching, allowing us to look closely at their instruction over time and across a range of data. Mr. Kerr identifies as a white man and Ms. Hurley identifies as a multiracial woman.

When our study began in 2015-2016, Mr. Kerr had been teaching at Starling Middle School for three years after teaching English internationally for fifteen years and completing a post-baccalaureate secondary education program at a large local university. To our knowledge, he had not explicitly been taught these instructional practices or modes of teaching with models during that time. Ms. Hurley was starting her first teaching job in 2015-2016 after having completed a one-year intensive masters degree in elementary education. She learned to think aloud while demonstrating and explaining aspects of historical thinking with sources during her one-semester social studies methods course. Otherwise, the instructional practices and modes of teaching with models that we observed emerged during this study as teachers worked with the curriculum.

2.3 Curricular Context

Together with the teachers, we developed an inquiry-based writing curriculum (hereafter, “the curriculum”) that framed social studies as an interpretive content area and foregrounded disciplinary reading, language, thinking, and writing, with the ultimate goal of supporting students’ social studies argument writing with sources. The curriculum development was inspired and directed by Monte-Sano, a social studies expert, guided by her previous research on historical argument writing. Schleppegrell supported development of the curriculum’s literacy tools, with Alston consulting on the writing pedagogy. The curriculum consists of four 5-day units that are investigations of historical and social topics for 6th, 7th, and 8th grades (hereafter, “investigations”). Each investigation follows a structure and sequence that includes making connections to the focus of the inquiry and extending incoming knowledge on Day 1; reading and analyzing sources on Days 2-3; thinking across sources, constructing plausible arguments, and planning arguments on Day 4; and finishing planning, composing, reflecting, and revising on Day 5. Six disciplinary literacy tools support students’ work throughout this inquiry and writing process, including a Bookmark tool to support reading and analysis of sources; a Weigh the Evidence tool to support thinking across sources and argumentation; a Mentor Text and Planning Graphic Organizer to support preparing to compose; a Useful Language tool to support composing; and a Reflection Guide to support reflection and revision or continued composing. Except for the Bookmark tool, each of these tools presents models for writing and a claim-evidence-reasoning structure for argumentation that calls for disciplinary reasoning about sources and use of evidence consistent with historical argument writing (e.g., Monte-Sano, 2010).

We worked with teachers during four professional development days each year as they taught with the curriculum to support their learning to use the investigations and disciplinary literacy tools and to gather their input for revisions to the curriculum. In the professional development meetings, we discussed video clips of their teaching to identify productive and explicit approaches to supporting students’ disciplinary thinking and writing with sources. During these interactions, we highlighted core instructional practices that support students’ social studies argument writing with sources – including demonstrating and explaining, facilitating discussion, and eliciting student thinking – as well as the disciplinary reasoning needed to construct arguments with sources. After teachers worked with students on each investigation, we reviewed data and revised the curriculum to support full participation from all students, attending to who was/was not benefiting, how different students made sense of the materials, and how teachers worked with the materials. Therefore, the curriculum was developed from year to year (see Monte-Sano, Hughes, & Thomson, 2019 for more on the design principles

and theory that guided development and *Read.Inquire.Write.* for a recent version of the curriculum).

2.4 Data Sources

In order to study the enactment of the curriculum and use of literacy supports, we gathered video recordings of classroom instruction from Ms. Hurley's 6th grade class and from Mr. Kerr's 7th grade class across three years (6th grade video from Years 1, 3, and 4 of the project; 7th grade during Years 1, 2, and 3 of the project). These 110 video records captured an average of five 50-minute class sessions from four time points per year for Ms. Hurley, and for Mr. Kerr, five 50-minute class sessions from four time points in Years 1 and 3 and from two time points in Year 4, due to resource constraints. This yielded 60 video-recorded class sessions from Ms. Hurley and 50 video-recorded class sessions from Mr. Kerr (or, 5,500 minutes of video, total). We reduced the data set by focusing on videos of Days 4 and 5 of the investigations, when instruction attended to disciplinary thinking and writing as students constructed arguments grounded in sources, planning, composing, reflecting, or revising. These were the days most oriented to teaching models of thinking and writing; we adjusted our focus if teachers actually paced an investigation differently. This resulted in a corpus of 44 video-recorded class sessions (24 from Ms. Hurley's classroom and 20 from Mr. Kerr's classroom for a total of 2,200 minutes of video). We coded the videos and transcribed selected excerpts to highlight key trends in the data presented in this article.

2.5 Data Analysis

We initially analyzed the corpus of 44 videos to identify episodes in which teachers engaged in any of the three modes of instruction or any combination thereof – explaining and demonstrating, use of model tools or texts, or co-constructing model texts – as described in Alston's (2012) research and synthesized in our framework for teaching models of thinking and writing (see Table 1). Each episode involved a teacher consistently focusing on a learning goal related to social studies argument writing with sources while engaging in any (or more than one) of the three modes. The authors together reviewed all identified episodes to confirm that each met these criteria. This round of analysis resulted in a corpus of 79 episodes of writing instruction with models that ranged in length from one to 17 minutes.

We each then analyzed and coded a subset of video episodes separately, using our full coding scheme, including the three modes of instruction and eleven instructional practices, to identify the full range of practices teachers used to support students' writing with sources across modes of instruction presented in Table 1. This deductive coding attended to the instructional practices and modes of instruction identified by Alston, 2012; Alston & Danielson, 2020; McGrew et al., 2018 in ELA research, to consider their utility in documenting teaching models of

thinking and writing in a social studies context. Teachers often enacted multiple modes of instruction within an episode in which they typically used multiple instructional practices. For example, in an episode focused on supporting students in integrating quotations from historical sources as evidence, teachers might demonstrate and explain how to do so as they draft a first paragraph and co-construct a second paragraph with students, realizing two modes of writing instruction with models. Within that same episode, the teacher might highlight processes involved in including a quotation and identify other features of the text (*processes* and *features*), externalize their thinking about this disciplinary practice (*metacognitively*), and engage students in talking about the paragraph as they co-construct it (*engaging in talk*), thus realizing several instructional practices within one episode.

We compared our coding of video episodes and reached agreement through discussion, refining descriptions of the set of eleven instructional practices and three modes of instruction, clarifying decision rules and adapting wording to adjust for the focus on social studies classrooms instead of ELA. In one example of refinement, we had difficulty with the initial description of the *feedback* code as “providing feedback to students on how to emulate features of the model text.” Through discussion, we refined the description of this practice to “providing feedback to students on how to emulate the disciplinary task” to clarify that the feedback should be focused more broadly on the task, not on the model text. In an example of clarifying how the coding scheme and framework worked in social studies, we recognized that the instructional practice of *highlighting intertextual connections* happened much more often in social studies than in the ELA research, perhaps because social studies argument writing with sources relies on corroborating multiple sources and perspectives. In another example of clarifying how the coding scheme and framework applied to social studies, we noted that while *orienting students metacognitively* with regard to disciplinary thinking and writing happens both in ELA and social studies, the nature of the metacognition reflected disciplinary differences. For example, when social studies teachers supported students in developing the reasoning to support their claims, they externalized their thinking about the reliability of sources used as evidence in addition to their thinking about how the evidence supported the claim. In ELA, on the other hand, the focus is not on reliability of sources but on the rhetorical situation and what kinds of evidence might most persuade the writer’s audience and make the strongest case.

After refining the coding scheme by watching and discussing video together, the second author then systematically coded each episode for the three modes of writing instruction with model texts and for any of the eleven instructional practices observed in each episode. The first and third authors each coded the same 20% of the episodes for the eleven practices and three modes of instruction to establish

the reliability of the coding. All three researchers agreed on code application 80% of the time, talked through disagreements, and adjusted coding for all episodes to reflect any clarifications of decision rules made as we discussed disagreements. We then created visual representations of these data to support us in exploring patterns (Miles & Huberman, 1995) and analyzed descriptive statistics of these data.

3. Findings

To begin, we share findings regarding teachers' instruction with models from both classrooms, and illustrate those findings through a case study of one teacher's instruction during an investigation of Mexico City's water crisis. Then, we share our findings concerning the role of curriculum, drawing on examples from the case study to support and elaborate them.

3.1 Teaching Disciplinary Writing and Thinking with Models

Our first research question asks how two teachers teaching with models supported students' disciplinary thinking and decision-making when writing within a research-based inquiry curriculum focused on social studies argument writing with sources. Overall, we saw many examples of teaching thinking and writing with model texts as teachers worked to support students in developing arguments with sources while using the curriculum. Ms. Hurley and Mr. Kerr used at least one mode of writing instruction with model texts in 79 episodes across 44 class sessions focused on corroborating sources and constructing arguments, selecting evidence from sources, and supporting students in reasoning about evidence as they composed, reflected on, and revised their writing. This means that teachers engaged in explicit instruction using model texts an average of almost four times during the last two days of an investigation (the focus of our analysis) to support students' social studies argument writing with sources.⁹ More specifically, Ms. Hurley and Mr. Kerr used *model tools or texts* most often (in 89% of the episodes), followed by *explaining and demonstrating* (in 31% of the episodes), and *co-constructing a model text* with students (in 24% of the episodes). These percentages do not add up to 100% because teachers combined multiple modes of instruction in 29% of the episodes. The models they used in the episodes we analyzed included five of six disciplinary literacy tools in the curriculum - Weigh the Evidence, Mentor Text, Useful Language, Planning Graphic Organizer, and Reflection Guide - as well as student writing and their own writing.

Within each mode of instruction, Ms. Hurley and Mr. Kerr enacted a range of instructional practices to support student learning. Figure 1 shows that all eleven instructional practices were enacted across episodes where teachers used model texts and co-constructed model texts, and ten of the eleven instructional practices were enacted across episodes where teachers demonstrated and explained (*globally* didn't occur in that mode).

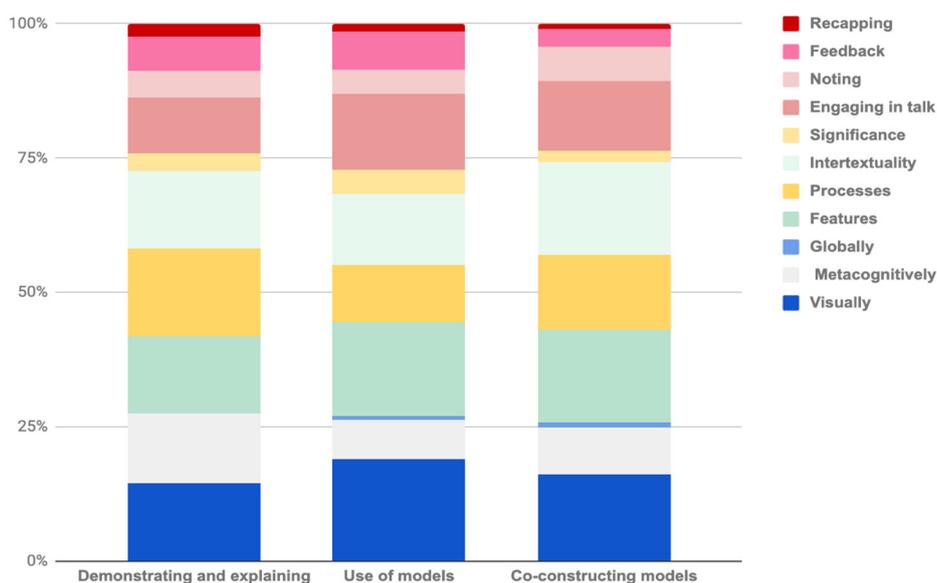


Figure 1: Instructional Practices Enacted Across Three Modes of Writing Instruction with Model Texts (79 Episodes).

Collectively, the teachers implemented all instructional practices, but some practices more often than others (see Figure 2). For example, practices such as orienting students visually and highlighting features of a text occurred in 71 and 69 of 79 episodes, respectively, whereas highlighting the global or transferable nature of the disciplinary practice and recapping the model text occurred only 3 and 6 times, respectively. The complexity of the thinking and metacognitive work involved in the practice appeared to correspond to some degree with how often the practice was instantiated. Practices that engage students in less complex tasks focused on *what* to do were more frequent than those focused on the more cognitively complex work of understanding *how* and *why* to engage in the practice. Mr. Kerr used nine of the practices, but never used *recapping* or *globally*; Ms. Hurley used these two practices (enacting *recapping* six times and *globally* three) in addition to all of the other practices. This may suggest that some instructional practices were more complex than others. Although we note these differences in the teachers' use of instructional practices, our focus here is examining the utility of the ELA instructional framework for understanding teaching with model texts in social studies, and identifying the impact of curricular resources on this work. We present episodes below to illustrate the instructional work involved in explicitly teaching disciplinary thinking and writing.

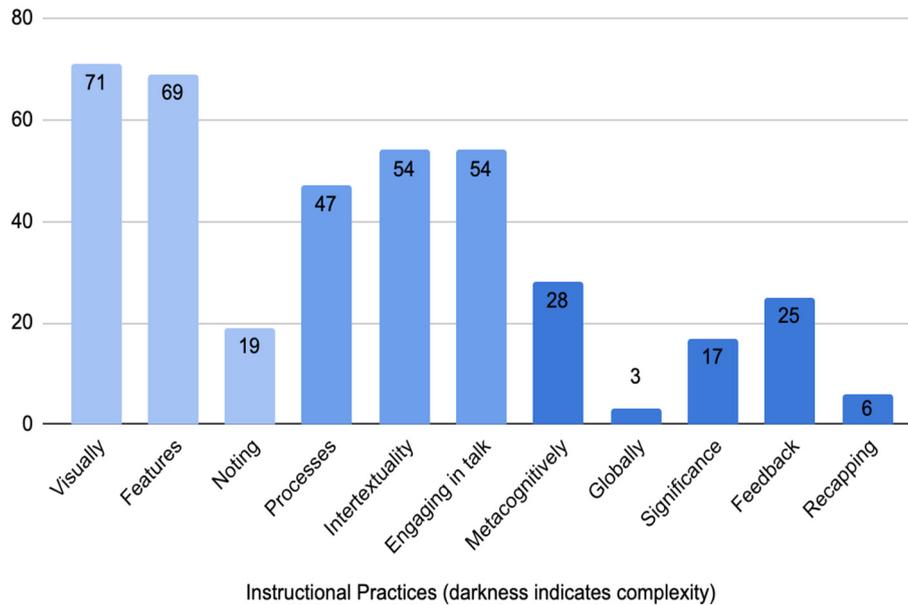


Figure 2: Frequency of Implementation of Each Instructional Practice Across 79 Episodes

3.2 The Case of Mexico City

The following case is used to illustrate the ways teachers enacted the instructional practices using models. We focus on one investigation in which we observed Ms. Hurley enact ten of the eleven instructional practices and all three modes of instruction with her 6th grade students. Each investigation follows an instructional sequence that builds from reading and talk to writing on the same topic. In this investigation, the last of the school year, students are working toward constructing and communicating a written argument about water inequality in Mexico based on their analysis of historical and social science sources – the kind of work experts in the social studies disciplines engage in. Ms. Hurley is teaching students to reason from sources and support claims with evidence and reasoning. The episodes illustrate progression through different stages of the writing process supported by the Weigh the Evidence and Planning Graphic Organizer disciplinary literacy tools as well as analysis of student writing. These tools and the sample of student writing become model texts that provide structure for students' reasoning about the question *Why is access to water unequal in and around Mexico City?*

In the three days before starting to construct and compose arguments in the episodes we share, students learned about Mexico City and analyzed a news report on water scarcity in Mexico City that provided background on the topic. However,

the video paid little attention to water inequality and its causes. The compelling question and writing assignment, which asked students to respond to the producers of the video with arguments about *why* access to water is unequal, framed students' reading of five sources. Each source offered different perspectives on this issue and supported different arguments. After reading and analyzing those sources, the class shifted toward preparing to write by using a model, the Weigh the Evidence tool. The class identified and corroborated evidence in support of claims developed through analysis of sources as they planned to write arguments using another model, the Planning Graphic Organizer tool. We share this work in the following episodes. Together, the episodes illustrate how a teacher can shift between modes of instruction and draw on multiple instructional practices within each mode to accomplish specific disciplinary goals (see Table 2).

Table 2: Overview of three instructional episodes during ms. hurley's mexico city investigation

Disciplinary thinking and writing in focus	Modes of writing instruction	Instructional practices (see Table 1 for more detail)
Episode 1: Corroborating sources and constructing arguments: <i>What makes good evidence? How do we reason about reliability of evidence?</i>	Use of a model (Weigh the Evidence anchor chart) Co-constructing a model (anchor chart listing different claims with evidence and reasoning to support them)	<i>visually, features, noting, process, intertextuality, engaging in talk, metacognitively, significance</i>
Episode 2: Selecting and integrating evidence from sources: <i>How do we decide what evidence to use?</i>	Use of a model (Planning Graphic Organizer) Demonstrating and explaining	<i>visually, features, process, intertextuality, engaging in talk, metacognitively, significance, recapping</i>
Episode 3: Supporting students in reasoning: <i>What are the moves a writer needs to make in a historical argument?</i>	Use of a model (written argument being developed by a student in the class)	<i>visually, features, process, intertextuality, engaging in talk, significance, feedback, recapping</i>

3.3 Corroborating Sources and Constructing Arguments

In this episode, Ms. Hurley shifts between two modes of instruction: *using a model text* – the Weigh the Evidence (WTE) anchor chart - and *co-constructing with the class several models* of plausible arguments that can be made about why access to

water is unequal in and around Mexico City. The WTE chart has columns for claims, evidence, and reasoning, and multiple rows for different plausible arguments (see Figure 3 for an example completed by a student involved in this episode).

During the episode (see Figure 4 for an annotated transcript), Ms. Hurley engages in eight instructional practices as the class considers the evidence offered in the five sources they have read for supporting different claims. Ms. Hurley begins the episode by making students' disciplinary goals explicit and visible – she moves her outstretched arms up and down as though weighing different items and explains that they will be using the sources they have analyzed to weigh the evidence. On that basis, they will decide which claims are best (Turn 1). In this turn, she enacts several practices: she reminds students about the *disciplinary process* they will engage in and the *process for working together* that they will follow, naming a claim as the *feature* first in focus, and *engaging students in talk*.

The class had already generated some possible claims on the basis of the sources by this point (they had been analyzing and discussing sources over the past few days), and Ms. Hurley had a list of these claims on the board. This was a day to test them out by connecting claims to relevant evidence and reasoning while looking across sources. She projects a blank WTE chart (which she refers to as a “note sheet”) and uses it to *visually* model how to construct an argument that includes claim, evidence, and reasoning. She *notes* the claim Shayla suggests and illustrates how to work *intertextually* by returning to sources the students have previously annotated (Turn 3). In this same turn, she thinks aloud *metacognitively* about the disciplinary process of returning to all of the sources in order to verify a claim (in fact, she says to “go back to the sources” three times and directs students to “flip through” the sources twice). Students are *engaged in talk* with one another for two minutes as they do this *intertextual*, analytical work before discussing their findings.

Ms. Hurley then makes explicit the disciplinary process of identifying relevant evidence (Turns 5-9) by first locating the evidence and then looking for consistency between evidence and claim. At Turn 7, she draws out in interaction with students what is *significant* about what counts as evidence by asking “How does that show that our claim is true?” An important aspect of disciplinary thinking when writing social studies arguments with sources is to address counterevidence and adjust claims that are not supported by evidence. Ms. Hurley's modeling (Turn 7) and affirmation of the logical connection between the proposed evidence and claim (Turn 9) highlights the need for evidence to support and verify a claim.

Ms. Hurley then engages students in thinking about the quality of evidence in another way in Turns 9-11, by talking about the reliability of the evidence. Here, she calls on students to explain why they trust the authors, and Wesley references the authors' expertise and the context that they wrote from as valid reasons to use the source as evidence for a question about water inequality in Mexico City (Turn 10).

Why is access to water unequal in and around Mexico City?

Weigh the Evidence

Directions: Look at your notes at the bottom of each source and the central question. As you weigh the evidence and discuss possible claims, evidence, and reasoning together, take some brief notes here that will help you with your email.

1. Compare the sources. Then, list possible CLAIMS about <u>why access to water is unequal in and around Mexico City.</u>	2. Evidence: Which sources support this claim? (Use author or title: Constitution, Watts, Gómez, Tortajada and Castelán, de Coss)	3. EVIDENCE: What information from the headnote or attribution or what quotations support your claim?	4. REASONING: How does this evidence support the claim? What is reliable or unreliable about the evidence?
Claim #1 Infrastructure has a lot of leaks and isn't cared for. 	Source 5 Water in Mexico City Alejandro de Coss	It took 15 years to find 1 little crack that turn into big one	This shows they need to put more attention to the infrastructure
Claim #2 Not enough water for high population	Source 4 Tortajada Castelán	Water supply is insufficient Becoming more populated	Both water experts from Mexico This shows that
Claim #3 Corruption w/ government 	Source 5	House illegally connected to Lerma aqueduct Been told that wealthy people bribe the government	They need to be more fair Wrote with water managers They need a better government

Now, **ARGUE**: Which is the **strongest** argument about why access to water is unequal in and around Mexico City? What about the claim or evidence is strong?

Figure 3: Wesley's Weigh the Evidence Chart.
(Note: The chart has been typed and spelling standardized for ease of reading. Claim 2 is the argument the class co-constructs during this episode. Wesley stars the two arguments he plans to develop when he writes.)

Turn #	Timestamp	Speaker	Transcript	Instructional practice
1	11:03	Teacher	We have five sources, (...) And we 're gonna look at all that evidence and we're gonna WEIGH the evidence, and decide, hey, which claim is best? (...)We're gonna do one together, and then I'm gonna let you work in table groups on a couple of claims of your choice. Someone suggest a claim that you think is super strong. (...) Shayla, what's your suggestion?	<i>Process</i> <i>Feature</i> <i>Process</i> <i>Engaging in talk</i>
2	11:37	Shayla	I like "there's not enough water for high population."	
3	11:42	Teacher	Excellent. (...) let's write that down. So, everyone should be on page 8. This is a note sheet. (...) [writes claim on the projected note sheet]. Alright. Your job, once you've written that down: Go back to your sources. Find textual evidence that shows that this is true. Flip back through your sources. Where do we see the population is too big to ha- there is not enough water for the population. Find the evidence. Flip through those packets, go back to your sources. Search for the evidence. Go back to your sources.[Students get to work] When you've found something you could excitedly point to evidence, show it to your neighbor with excitement. Neighbor, I found this exciting piece of evidence.	<i>Visually</i> <i>Noting</i> <i>Process</i> <i>Intertextuality</i> <i>Metacognitively</i> <i>Features</i> <i>Process</i> <i>Engaging in talk</i>
4	13:48	Teacher	(...) Alright, hands up if you were able to find evidence to that there's not enough water, or H2O for high population [writes on document camera]. Rashad, what source did you find? And tell us the name and the author.	<i>Features</i> <i>Intertextuality</i> <i>Process</i> <i>Engaging in talk</i>
	14:05		[Interaction as student reports and teacher adds to chart]	
5	14:33	Teacher	Alright. Rashad found some evidence: read us the quote that shows that, Rashad.	<i>Features</i> <i>Process</i>
6	14:39	Rashad	(...) "It's becoming more populated and needing more water."	
7	14:53	Teacher	(...) "It's becoming more populated." (...) Ok, so Rashad found that quote. "It's becoming more populated and, something, needing more water." How does that show that our claim is true? How does it show that, Shayla?	<i>Process</i> <i>Significance</i> <i>Engaging in talk</i>
8	15:32	Shayla	Like, because it's saying like, uh, there's not enough and they need more?	

9	15:38	Teacher	Ok, 'it shows not enough water...' [Writes on projected chart] When we're writing we're gonna explain more than that, but just to kind of give us a little reminder. Um, why do we trust Castelán and Tortajada? (...) why is it reliable, that source?	<i>Process</i> <i>Metacognitively Engaging in talk</i>
10	16:05	Wesley	Um, I think it said because they're both from Mexico, and they're both experts in water.	
11	16:12	Teacher	Good, so they're both experts, water- (...) Ok. So, we have a source, a quote, what it sho- what the source means and why it's reliable [points to each on projected chart]. Again, in note format. Who here had a different piece of evidence that they used to support that same quote [claim]? Hazel, what did you find? (...)	<i>Features Visually</i> <i>Process Engaging in talk</i>
12	16:55	Hazel	It says that they, um, 'the water supply is insufficient'.	
13	17:02	Teacher	So 'water supply' [writes it down on projected chart]- can you say it one more time?	
14	17:07	Hazel	'Is insufficient.'	
15	17:10	Teacher	Good. And again, it's from the same quote (source), we'll draw that arrow. [annotates the chart to show that they can use the same source information for this quote] Again, similarly, what does this show and why it's reliable, it's gonna be sort of the same thing, right? (...) Ok. Is there just one piece of evidence to support this claim?	<i>Process</i> <i>Features</i>
16	17:33	Students	No.	
17	17:34	Teacher	Could you actually go to other sources and find information too?	<i>Process</i>
18	17:36	Students	Yeah.	
19	17:37	Teacher	Sure. Ok, so, at your tables, (...) pick the next claim that you wanna work on.	<i>Engaging in talk</i>

Figure 4; Corroborating Sources and Co-Constructing Arguments*

* (...) indicates extraneous information, repetition and false starts elided

Ms. Hurley reinforces this sourcing of evidence, an important aspect of historical thinking with evidence.

At Turns 11-15, Ms. Hurley makes explicit another key disciplinary move when she asks for corroborating evidence to support the same claim. She *engages students in talk* to think through this argumentation practice and references it again at Turn 17. At the end of this episode, she directs students to work together to engage in the same disciplinary practices with a different claim.

This episode of modeling thinking and writing illustrates how teachers can make explicit the cognitive, disciplinary work needed to select appropriate evidence for a claim and actively engage students in that work, as well as offer a set of concrete steps they can take to begin to capture their thinking in a written text. Breaking down Ms. Hurley's teaching of writing with models by instructional practice and mode shows how she works with students to identify evidence to support claims that emerged from analysis of sources, and to use disciplinary reasoning to think about what counts as good evidence.

3.4 Selecting and Integrating Evidence from Sources

In this episode, Ms. Hurley demonstrates and explains how to incorporate quotations from sources to provide evidence in a written argument. She projects a "planning sheet" (i.e., the Planning Graphic Organizer tool; see [web page blinded for review]), which she uses as a model as she enacts eight instructional practices (see Figure 5). Since students have already read multiple sources and discussed multiple plausible arguments while using the Weigh the Evidence tool, Ms. Hurley selects one claim to work with as she demonstrates thinking about how to select and integrate evidence from sources in her writing. After this episode, students move forward in planning for the specific arguments they will compose on their own. Recall they are writing to the producers of the video they watched to make a case that they should include additional information in their documentary that explains Mexico City's water inequality.

From the beginning of this episode, Ms. Hurley explicitly focuses on the sources as the point of origin for students' claims and excerpts of sources as evidence for those claims, orienting students toward norms in disciplinary writing (McGrew et al., 2018). At Turn 1, Ms. Hurley identifies the disciplinary practice of selecting and incorporating a quotation from a source as evidence to support a claim and begins to show students her process for doing so, saying "a lot of people were wondering about how I use quotes in evidence." In that turn, she *orients students visually* through the model "planning sheet" and highlights both *features* and *processes* involved in selecting and incorporating a quotation as evidence while planning (here the class uses the term "judgment" to refer to what in other places they call "reasoning"). She selects one claim from the set of claims the class previously

developed on the basis of the sources and asks students to identify a source that would provide evidence for that claim (*engaging in talk* and *intertextuality*).

Taking Claire's suggestion of Source 3, in Turn 3 Ms. Hurley externalizes her thinking about the "*process* of finding evidence" and demonstrates that to identify evidence means going back to the sources and her analysis of the sources (*metacognitively* - "I'm looking at something I underlined").

Turn #	Timestamp	Speaker	Transcript	Instructional practice
1	12:25	Teacher	A lot of people were wondering about how I use quotes in evidence. So I'm gonna sort of show you my example on the planning sheet of how you (...) would pick out quotes. (...) let's sort of work on that together (...) and then we'll move to writing. [turns on the projection] (...) I know I need to talk about the reasons, or sort of the claim, and pull up maybe a quote, and talk about its judgment. (...) who's using, um, the claim number 1, that the government gave more water to rich than poor? (...) [Several students raise hands]. (...) my first sentence is 'one reason water is unequal' (...) is 'government gave more water to rich than poor'. [Writes on document camera]. (...) what source could we recommend to <i>PBS News Hour</i> that helps us prove that claim? (...) Uh, Claire, what source? (...)	<i>Visually</i> <i>Processes</i> <i>Features</i> <i>Processes</i> <i>Intertextuality</i>
2	14:21	Claire	Source 3.	
3	14:22	Teacher	(...) So I'm looking through Source 3, and I'm looking at some of the- the things that I underlined. Again, this is the process of finding evidence. If you were someone who was wondering about this, this is your time. So I'm looking at something I underlined, (...). it says, 'Because these colonias were illegal', those neighborhoods, 'and never approved, the government said they did not have any responsible- responsibility to provide the colonia with services - especially water and sewage.' Does this last line support what I'm saying about the government giving more access to water to the rich than the poor?	<i>Processes</i> <i>Intertextuality</i> <i>Metacognitively</i> <i>Intertextuality</i> <i>Significance</i>
4	15:02	Students	Yeah.	
5	15:03	Teacher	Ok, so, I could use this. This is a quotation, this is textual evidence to support what I'm saying. (...) in my planning sheet, I'm gonna flip back, (...) you see how I'm sort of flipping my page up? (...) what source is this?	<i>Metacognitively</i>
6	15:29	Students	Three.	

and then includes it in her plan, making an *intertextual* connection between her plan and the sources students had read and annotated. When she first considers this source excerpt in Turn 3, she asks “Does this ... support what I'm saying about the government giving more access to water to the rich than the poor?” Here, she orients students to the *significance* of her move, underscoring that evidence must be relevant to the claim.

Then, in Turn 7, she thinks aloud about how to use quotation marks (*features, metacognitively*) to indicate that the words come from “our source,” that they are not her words and that sharing the perspectives of people who have knowledge of the central question is an important practice in social studies. She further explains that she gives “credit” to the source rather than positioning the idea as hers by referencing the source (see Turns 11-15; note that we later worked with teachers to model and recognize the authors of sources instead of the source numbers, furthering the disciplinary use of evidence).

Also, in Turn 7, Ms. Hurley signals explicitly that in social studies we do not simply pull a quotation from a source, but also must consider and explain why the source is credible. She points out, “here’s my judgment” and shares that she finds this source reliable because it was written by a professor. At Turn 15, she externalizes her thinking (*metacognitively*) about this disciplinary practice again by reminding them to consider the reliability of the source (“why I trust it”).

In the final turns (end of 7-17), she reinforces her moves by asking students to *recap* what she has done, posing questions that focus them on the process she has modeled and *engaging students in talk* as they review what is important when including a quotation from a source on their planning sheets. By externalizing the cognitive, often invisible disciplinary thinking writers engage in through her questioning and explanations, she goes beyond *doing* to help students understand *how* to select and integrate quotations as evidence for a claim.

3.5 Supporting Students in Reasoning

In the final episode, Ms. Hurley uses student writing as a model and enacts eight instructional practices to support students in reasoning, helping them articulate how their evidence supports their argument, with attention to the credibility of the evidence. This is often a challenge in writing social studies arguments with sources.

At this point in the investigation, students have read and discussed sources, identified plausible arguments, and planned the argument they will write. Now they are drafting their texts. Ms. Hurley chooses a text from a student who is close to completing the task and projects it (with the student’s permission) for the whole class to consider. She tells them to look for claim, evidence, and reasoning in the projected essay, reminding them that reasoning includes two things - explaining evidence and establishing its reliability (*process*). As the dialogue in Figure 6 begins, Ms. Hurley reads from the student example.

At Turn 1, after reading what the student has written, she asks *what that person is doing*. She picks up on students' comments and highlights the author's use of information from other sources ("the videos and stuff we watched" - *intertextuality*), which contextualizes their evidence, as *significant*. She then reads the student author's reasoning about the reliability of evidence for and points out that the writer has just started a sentence about a potential factor that would make the source less reliable ("they're about to say..."), reinforcing the disciplinary practice of recognizing both the affordances and limitations of sources for responding to a particular question. This level of explicitness frames reasoning about evidence from a disciplinary perspective.

At the end of Turn 3, Ms. Hurley engages students in co-constructing an argument model by engaging them in *recapping* the features of the student's text that they have identified (Turns 4-15). She uses this interaction to highlight the *significance* of the author's decision to reason in more than one sentence so that they not only explain how the evidence supports the claim – a more common practice – but also address the reliability of the source they are quoting – a disciplinary practice (Turns 9-10). In the next turn, Ms. Hurley reinforces an important part of the writing *process* in social studies – that reasoning about evidence is grounded in their earlier analysis of the sources (*intertextuality*). She says "I wanna remind you: if you're getting stuck on the reasoning... your reliability is right here in your annotations, okay?" This signals a key disciplinary orientation that students' analysis of sources is key to their writing, that sources are the foundation of their writing. Her *feedback* to the author about what to do next is co-constructed with students as they review what still needs to be done to complete the essay (Turns 11-15). We see the disciplinarity in the modeling she does, highlighting practices that are specific to thinking and writing in social studies, where explanation of how evidence supports a claim is rooted in analysis of sources and enhanced by comments on the reliability of the source.

3.6 Summary

Across these instructional episodes, Ms. Hurley engages in the three modes of writing instruction with models we observed in our data and used ten of the eleven instructional practices in Alston's framework. (The eleventh instructional practice, "Explicitly marking the global, transferrable and disciplinary nature of the processes they are explaining and demonstrating for students," occurred three times in our data when teachers commented to students that the practice being introduced is something that good writers do). In corroborating sources and constructing arguments, she uses a model that makes explicit the different moves an author of a social studies argument based on sources needs to make, and co-constructs with students one plausible argument from the sources they have read.

Turn #	Time stamp	Speaker	Transcript	Instructional practice
1	34:42	Teacher	Then, [reading projected student essay] "This source will help the viewers understand that the government is making the water expensive. There's also water inequality because in some areas in Mexico they're poor and have to build their homes by hand. And I think people should have water and not just, um, get water from rain and rivers." What is that person doing right there?	<i>Visually</i> <i>Significance</i> <i>Engaging in talk (throughout the interaction)</i>
2	35:00	Students	(Inaudible; commenting about evidence)	
3	35:02	Teacher	Yeah, they're explaining their evidence, right? And they're even bringing in, like, bringing in some information that wasn't in the sources, but was in the videos and stuff we watched. Ok, "This evidence is reliable because the author has research experience, has experience researching the environment and interviewed many different types of people." They're about to say it's also unreliable because of <i>this</i> . So, does this person have everything that they need? Do they have a clear claim?	<i>Features</i> <i>Significance</i> <i>Process</i> <i>Intertextuality</i> <i>Recapping</i>
4	35:26	Students	No. Yes.	
5	35:27	Teacher	Is there evidence to support their claim?	<i>Recapping</i>
6	35:28	Students	Yeah.	
7	35:29	Teacher	Ok. Did they explain what their evidence means?	<i>Recapping</i>
8	35:30	Students	Yes.	
9	35:32	Teacher	And notice they, they didn't just say one sentence, 'this evidence shows', they took a couple of sentences to explain it, and they also talked about- what?	<i>Significance</i> <i>Recapping</i>
10	35:41	A student	The reliability.	
11	35:43	Teacher	Yeah, reliability. I wanna remind you: if you're getting stuck on the reasoning, (...) your reliability is right here in your annotations, ok? (...) What's this person's next step after they finish this sentence?	<i>Process</i> <i>Intertextuality</i> <i>Feedback</i>
12	36:12	A student	Unreliability.	
13	36:14	Teacher	They're gonna talk about what's unreliable, and then in the next paragraph they're gonna talk about what?	<i>Process</i>
14	36:19	Students	Other evidence.	
15	36:21	Teacher	Yeah, a different piece of evidence, right? (...) Any questions before we start this and then wrap up?	<i>Features</i>

Figure 6: Ms. Hurley Uses Student Work as a Model to Support Students in Reasoning.

Then, as students begin to plan their essays, she demonstrates and explains how to select and incorporate quotations from sources as evidence to support the claim they choose, using a model that supports their planning. As students compose, she uses one of their essays as a model to remind them about the processes and

disciplinary thinking involved in using their analysis of the sources to reason about the evidence they have drawn on. Ms. Hurley's teaching of writing with models apprentices students into the kinds of thinking needed to construct a social studies argument grounded in sources, and assists them in the moves needed to enact the relevant disciplinary practices.

3.7 The Role of Curriculum

The *Read.Inquire.Write.* investigations offer a curriculum that promotes inquiry through analysis of sources with "visible authors" (Paxton, 2002), not tertiary sources that summarize and digest information and perspectives for students. This contrasts with other middle school curricula where students more often engage with texts that summarize and digest information and ideas for students. Such tertiary sources do not provide the intellectual grist needed for engagement in deliberation and discussion, or the opportunity for disciplinary modeling and analysis. So, in addition to noting the instructional practices teachers used, we wanted to understand what curriculum resources supported teachers' disciplinary thinking and writing instruction in this context. Studying the instructional work teachers do with a curriculum grounded in primary and secondary sources that promotes student inquiry and provides robust supports has enabled us to document and understand the instructional practices more fully. The analysis also emphasizes the need for curriculum supports that offer teachers opportunities to model disciplinary thinking and create models of thinking and writing with students.

In the "corroborating sources and constructing arguments" episode, for example, the Weigh the Evidence anchor chart set up a context that framed the task as developing potentially competing claims and evaluating evidence from sources. This curriculum support underscored an important disciplinary understanding: that the sources offer different perspectives on the question students are responding to, and that different claims can be argued for, using the sources. The chart also supported the teacher in orienting students to the disciplinary work of referring back to sources they have annotated and evaluating evidence in relation to the claims they propose. The teacher's questions about the validity of claims or the credibility of evidence, along with comments about how much to write "in note format" at this stage of the process, and how to mark the chart to show that evidence can support different claims, offered a cognitive apprenticeship to students who are learning these disciplinary practices. Co-constructing this model text with students took the focus off of the individual writer and enabled the class as a whole to recognize the range of claims that evidence from the sources they have read can support.

In the "selecting and integrating evidence from sources" episode, the Planning Graphic Organizer (PGO) offered individual students a model for planning the

specific argument they will develop. The teacher used the PGO, which offers a structure for the essay's *claim*, *evidence*, and *judgment*, to demonstrate how, once they have decided on the claim they want to argue, they can incorporate evidence from the sources they have annotated. Her modeling focuses both on how to think about the selection of evidence as students returned to the sources, as well as how to introduce the quote and punctuate it. She highlights the significance of "giving credit to the sources" and including their judgment about why it can be trusted. The model of essay structure (the "boxes" the teacher refers to), provides a support that, used in dialogue through which the *features* and *thinking processes* for creating an argument are highlighted, and *recapped* in interaction with the students, prepares them to develop their own arguments as the next stage in the investigation.

Finally, using a student's text as a model, an instructional strategy promoted in the curriculum, the teacher offers additional scaffolding for students who continue to need support for the most challenging aspect of the argument task: reasoning about the evidence they include. This writing is not treated as an individual assessment, but as a further opportunity for practice writing arguments. As students write, the teacher walks around the class and notices students who are not yet clear about the reasoning needed to support their claim and evidence. In this moment she draws attention to the ways one of the students has reasoned about evidence, underscoring the need for key aspects of disciplinary reasoning: explaining the evidence and its relation to the claim, and establishing its reliability and what might challenge its reliability. The student's text-in-progress is used as a model for others to analyze through interaction with the teacher how the writer accomplishes these moves. Both the *process* and *features* of the student's text are highlighted, with a focus on the *significance* and *intertextuality* of the work as the class *recaps* the process the writer has engaged in. The student text is a model that emerges in the writing phase of the investigation.

In these ways and others, the curriculum teachers worked with in this study offered model texts in social studies argument writing with sources that supported their writing instruction. Both the availability of supportive disciplinary models and the organization of the work across several days of reading, talking, and writing enabled teachers to engage in more complex instructional practices.

4. Discussion

We have shown how social studies teachers supported students' disciplinary thinking and writing through the use of models that enabled them to recognize the structure and processes involved in writing arguments, through explaining and thinking aloud about the practices involved in writing arguments, and through co-construction of arguments with students (RQ1). We have also shown how the curriculum resources supported teachers' disciplinary thinking and writing

instruction (RQ2). We elaborate on these points below and discuss how a framework developed in an ELA context was adapted to describe the disciplinary thinking needed to write in social studies.

4.1 Disciplinarity and Students' Engagement in Teaching with Models

Cognitive apprenticeship calls for explicit instruction that is situated “in an environment that reflects the multiple uses to which their knowledge will be put in the future... students come to understand the purposes or uses of the knowledge they are learning” (Collins et al., 1991, p.16). To enable students to achieve such understanding, teaching models of thinking and writing needs to enact disciplinary practices specific to the subject area. A key aspect of the writing instruction we studied is its support for middle school students' understanding of the ways of thinking that are important in social studies argument writing with sources. The instructional work presented above illustrates how explicit writing instruction in social studies calls for more than the presentation of model texts and identification of their features. Teaching writing and thinking with models also needs to involve students in learning disciplinary practices by thinking aloud about how evidence supports a claim, or about what writers do when they assess the credibility of a text being used as evidence to support a claim. Like Braaksma and colleagues (2004), we also see how important it is to involve students in this classroom work.

The instructional episodes we have presented illustrate how teaching thinking and writing with models can encourage students' cognition and engage students in collaboration, important aspects of teaching writing with models that are seldom described in research on writing. In the “selecting and integrating evidence from sources” episode, through demonstrating and explaining, the teacher displays her metacognition as she explicitly narrates and explains how to incorporate a quotation as evidence. Making the link from evidence back to the claim and then reasoning about evidence are challenging moves in writing a social studies argument with sources, and the teacher follows by recapping the process in interaction with students in order to further support their understandings of this critical process. For students who have few opportunities outside the classroom to learn how to think about finding evidence to support a claim, this careful teaching of thinking and writing with models supports their engagement in practices that they might otherwise be unfamiliar with. The spoken language the teacher uses in interactional modeling also exemplifies the various meaningful expressions students can then use in their writing. Saying and using particular language structures like “this text is reliable because...” not only models the disciplinary process, but also models specific language needed to engage in this disciplinary work. This is especially important for students who may be learning English while learning social studies, or who need support for learning the academic expressions relevant to the writing task.

In the “supporting students in reasoning” episode, where students apply what they have learned as they write their own arguments, the teacher identifies a text a student is working on and projects it (this is a routine that students are used to; the teacher always seeks their permission before projecting their work). The teacher leads the class in engaging with the student’s writing, offering feedback in ways that align with the social, dialogic nature of writing. These moves to deeply engage with a student’s draft recognize the value of the work students are doing and the value of peer feedback and collaboration to support students as they engage in the writing task.

Kinloch (2018) suggests that modeling should disrupt the singular valuing of teacher knowledge by inviting and valuing student knowledge. Students should not be silent, as teachers’ knowledge is not the only resource for learning. Instead, students’ contributions must be taken seriously. Our analysis shows how students can be actively engaged in the cognitive work of social studies argument writing with sources as they build new understandings. The instructional practices we have described can engage students at different levels of instructional complexity; *engaging students in talk* occurred in all modes of teaching with models. The students and teacher can interact to develop models of thinking and writing as they jointly investigate a model in use, and students can contribute by co-constructing with the teacher a model or taking the lead in demonstrating and explaining (e.g., Braaksma et al., 2004). Collins et al. (1991:16) suggest that such “cooperative problem solving” leads to a sense of ownership, personal investment, and mutual dependency. Co-constructing models supports collaborations that help build and sustain a community of practice, an important aspect of cognitive apprenticeship that we see in students’ active participation, reinforcing a notion of writing as socially situated and signaling that no one person has all of the knowledge in the classroom.

4.2 Value of the Framework Across Domains

The framework we present here specifies a set of instructional practices for teaching writing with models through which the disciplinary thinking and decision making involved in writing can be made explicit, moving beyond general strategies to support writing instruction and focusing instead on the detailed instructional work involved (cf., Graham & Harris, 2018) and how it is shaped by the disciplinary context. Developed initially through research in ELA classrooms, applying it in social studies helps us recognize the ways it can be useful in other disciplinary contexts as well. Some practices may seem similar in both contexts, as we saw teachers in both ELA and social studies classrooms model the thinking behind their decision making while drafting and revising and posing questions writers need to consider in order to meet the requirements of the writing tasks. In both contexts they demonstrated how to analyze sources for information to support claims, using

models of note taking, organization and planning. They also engaged students by both explaining and demonstrating as well as co-constructing with students new disciplinary understandings of how writers frame evidence, including how the use of certain words and phrases (i.e., conjunctions and transitions) can signal particular arguments. Some of the ways the teachers in our study enacted the practices would be supportive across disciplines. For example, in Figure 6, when Ms. Hurley thinks aloud about how to use quotation marks (*features*), or makes the point that being messy at this point in the writing process is “ok, ‘cause it’s a plan,” (*metacognitively*), she supports students in ways that would be relevant to ELA as well. The *recapping* illustrated in Figure 6, and *engaging students in talk* are also practices that move across subject areas.

But while these practices involved in being explicit are similar across disciplines in some ways, our study shows that these practices have to be enacted by teachers and analyzed by researchers in discipline-specific ways in order to help students understand the disciplinary significance of the moves and attain disciplinary learning goals. For example, even if a claim-evidence-reasoning argumentation structure may appear common, the nature of evidence and reasoning, and the types of claims that can be made may differ in important ways (e.g., Monte-Sano, 2010). When teachers externalize the thinking involved in selecting quotations from sources to support claims, ELA teachers highlight the purpose and audience for the essay to be written when selecting evidence. In social studies, on the other hand, teachers emphasize corroborating multiple sources and considering the provenance of the sources. In another example, when prompting students to elaborate on the reasoning to support their claims, social studies teachers may point out that reasoning includes an explanation of both how the evidence supports the claim and why that evidence is useful and trustworthy (“reliable”) for answering the question under investigation; in contrast, ELA teachers may explain how writers consider the persuasiveness of the evidence, given the audience students are writing for. Disciplinary differences in the thinking that underlies writing in each domain may also implicate different instructional practices to some extent; for example, the importance of corroborating sources in constructing an argument may naturally lead to making more intertextual connections in history/social science. In social studies, students need to be apprenticed into practices such as weighing evidence across sources and into disciplinary ways of thinking about how to identify relevant evidence, assess the quality of evidence, and how to contextualize evidence in relation to the historical moment it comes from call for discipline-specific ways of thinking that can be modeled through teachers’ thinking aloud and engagement with students in practice. So, while making thinking explicit about components of argumentation is key to writing instruction in all subject areas, teaching models of thinking and writing is realized in classroom talk in different ways in different disciplinary contexts.

4.3 Complexity of Instructional Practices

We have characterized some of the 11 practices as more concrete and foundational. These include orienting students *visually* to what is expected in a text, highlighting *features* of the text, and directing students to *note* what they are focused on. We characterize other practices as more complex and dialogic because they focus on *how* students might think about or produce text, by highlighting *processes* students need to engage in and drawing attention to *intertextual* connections between the text students are producing and other texts that they are drawing on to create their arguments. The more complex practices also orient students *metacognitively* as the teacher externalizes thinking about the disciplinary practice; explicitly marking the *global*, transferrable, and disciplinary nature of writing processes; and highlighting the *significance* of the author's moves in the text. Practices such as *engaging students in talk*, providing *feedback* to students on how to emulate the disciplinary task and engaging students in *recapping* the model support complex teaching with models to surface the underlying disciplinary thinking and decision-making that informs writing processes and strategies.

In comparing across disciplinary contexts, we saw in both ELA and social studies that the more complex practices are less frequent and are preceded in the classroom by foundational practices that enable them. For example, consistent with Alston's (2012) research on modeling writing in ELA, the social studies teachers more frequently used instructional practices that focus on *what* a writer does and *how*, and less frequently, practices that emphasize *why* a writer makes certain moves, even when they enact a wide range of instructional practices while teaching models of thinking and writing. With one exception (*noting*), the instructional practices teachers implemented most are foundational (*orienting visually*, *highlighting features*) (Alston, 2012). Similarly, we see alignment between the ELA data and our social studies data in teachers' implementation of instructional practices characterized as *complex*. Within any one episode, teachers tended to enact multiple foundational practices, but seldom more than one complex practice, and they were less likely to enact a complex practice during an episode if they did not also enact a foundational instructional practice within that episode. This suggests that some instructional practices set the stage for the more complex dialogic work.

4.4 Supporting Teaching with Models

While we have shown how more complex, dialogic practices can be leveraged when teaching thinking and writing with sources, preparing teachers to engage more often and more consistently in practices that elicit more student thinking and decision-making takes time. Learning to teach complex instructional practices requires both metacognitive skill as well as skill in relational work with students. Alston & Danielson (2020) investigated literacy teacher candidates' learning to

model thinking and decision-making during writing instruction. The study found that, over time, as teacher candidates engaged in active modeling, they moved from attending primarily to features of the writing, or how to use those features, to using instructional practices that modeled the more complex, metacognitive work that supports student thinking about the writing they are engaged in. More research is needed to consider how to increase teachers' use of these complex practices that surface and provide student access to practices that orient them metacognitively to the global, transferrable, and disciplinary nature of writing practices.

In addition, we have shown the role of the *Read.Inquire.Write.* curriculum and its built-in supports that offer models and tools teachers can use to focus students on the disciplinary practices needed to accomplish the writing task. Our multi-year collaboration with teachers and research in classrooms with these models included ongoing adaptations shaped by the teachers and the responses of the students. Teachers reported that as they became more comfortable with the curriculum and skilled with the teaching practices, they were able to rely more on student and co-created models that helped them address writing issues specific to their particular students' needs. We anticipate that other teachers taking up these models would continue to adapt them to their own contexts.

5. Conclusion and Implications

Using transcripts from classroom interaction, we have shown how teaching writing with sources can work as an interactional process in which students and teachers together make sense of *what* the important features of a model text are, *how* writers engage in disciplinary processes that support composing such a text, and *why* these features and processes are critical to the disciplinary thinking and decision-making involved in particular kinds of writing. We have provided evidence that teachers *can* teach writing in these more complex ways with tools and structures that support them to do so. The teachers in this study, supported by the curriculum, were able to leverage tools to move beyond foundational instructional practices that assist performance, combining such practices with complex instructional practices that offer students a cognitive apprenticeship into the thinking of historians and social scientists. In addition, teachers invited students' active contributions to the development of knowledge for authentic disciplinary purposes. Of course, we test this framework with only two teachers in one domain outside of ELA, and those teachers worked with a supportive curriculum. Future research investigating how to increase teachers' use of practices that emphasized the disciplinary significance of the instructional moves would be useful.

The analysis has enabled us to extend the work of Alston (2012) and McGrew et al. (2018) to offer the field a framework for teaching models of thinking and writing that has potential across disciplinary domains. Our research-based framework for teaching models of thinking and writing offers teachers and researchers specific

ways of approaching and researching writing instruction that can be adapted across disciplinary contexts in order to externalize not just *what* work students will do, but also *how* and *why* they will do it. Further work will need to test this framework across domains and settings beyond ELA and social studies.

We offer this framework as a more complete understanding of the instructional work involved in teaching models of thinking and writing will help teachers and teacher educators extend the practices they use to support and engage students and teachers in the disciplinary thinking and decision making needed for writing and teaching writing. We also see potential for the framework to enable researchers to strengthen their analysis of explicit writing instruction and explore its benefits for students as they write across disciplines.

Note

° Since we narrowed our focus to Days 4 and 5 of the investigations, it is possible that teachers modeled some aspect of the writing process even more often than we capture here (i.e., on Days 1, 2, or 3 of the investigations).

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