Promoting Argumentation Skills in Urban Middle Schools: Studies of Teachers and Students Using a Debate-Based Social Studies Curriculum

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Promoting Argumentation Skills in Urban Middle Schools: Studies of Teachers and Students Using a Debate-Based Social Studies Curriculum

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To Eric, Justin, and Nate. You three inspire me to go as far as I possibly can.
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Abstract

Argumentation skills are essential to individuals’ career prospects in future economies (National Research Council, 2008) and to the success of our democracy. Unfortunately, these skills are often challenging to teach, and there is a dearth of studies addressing “the teacher’s use of specific instructional methods” (Newell, et al. 2011) to promote argumentation skills over time. In my dissertation, I examine how urban public middle school teachers promote text-based argumentation skills in classroom discussion. I draw on data from the Catalyzing Comprehension through Discussion and Debate (CCDD) research project. Specifically, I look at transcripts from enactments of lessons in the Social Studies Generation curriculum, one of the four Word Generation curricula used as an intervention in the larger CCDD study. In the first study, I compare how two co-teachers help small groups of students prepare to argue in a classroom debate. I find that both teachers help students generate claim-evidence connections and counterarguments with “supportive prompting,” but they differ in how they engage with student-generated arguments. In the second study, I examine three different teachers facilitating a classroom debate on the same topic. I identify episodes of talk containing dialogic argumentation during debates and look across classrooms for patterns of teacher actions during these episodes. I find that teachers offer a series of four moves that help students sustain dialogic argumentation. In the third and final study, I investigate what students do in classroom debates in the context of an argumentation-supporting curriculum – what moves they make, what supports
they use, and what other strategies they deploy. I find that students use evidence and explain how evidence supports their claims more than what might be expected given previous studies on argumentative classroom discussions. I discuss implications for practice and research in each study.
Chapter 1.

Introduction

Argumentation skills are hugely important to both a successful democracy, as citizens need such skills for thoughtful participation in civic life, and a successful economy, as workers need these same skills for effective collaboration (National Research Council, 2008; Thomas & Brown, 2011). Thus, few would contest that developing students’ argumentation skills is a worthy investment of time that will benefit their professional and personal lives in the future.

Fortunately, national education policy appears to be in accord with this view. The Common Core State Standards (CCSS) recognize that constructing and evaluating arguments are essential skills for college and career readiness (Common Core State Standards, 2010).

Though the term “argument” is not used until grade 6, the CCSS emphasize argument-related skills much earlier. By the end of grade 2, students are expected to “state an opinion [about a book or topic]” and “supply reasons that support that opinion” (CCSS for English Language Arts, 2010, p. 19). By the end of grade 4, they are expected to “identify the reasons and evidence a speaker provides to support particular points” (p. 24). One might reasonably assume that these early standards are intended to prepare students for the more rigorous argumentation standards in middle school (grades 6 to 8), which call for students to “support claim(s) with logical reasoning and relevant evidence” and “clarify the relationships among claim(s) reasons, and evidence” (p. 42) in their written
arguments, and to “delineate a speaker’s argument… evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence” (p. 49). In short, the CCSS expect students, before they enter high school, to demonstrate some fairly sophisticated argumentation skills.

Research suggests, however, that reaching the Common Core’s argumentation standards, particularly those that involve oral discourse, will be very challenging for many middle school students. Studies have shown that before high school, students rarely clarify how evidence supports a claim in the course of classroom or online discussions (Anderson, Chinn, Chang, Waggoner, & Yi, 1997; Clark & Sampson, 2008; MacArthur, Ferretti, & Okolo, 2002). Other studies show that counterarguments, in which students evaluate and critique the arguments of others, are also offered infrequently during discussions on non-science topics (Pontecorvo & Girardet, 1993; Felton & Kuhn, 2001).

There are a number of possible reasons why middle school students and younger may struggle with argumentation. One reason, suggested in many studies, is that these students often do not have the background knowledge needed to make good arguments and counterarguments on a topic (see De La Paz, 2005; Felton & Herko, 2004; Ferretti, Lewis, & Andrews-Weckerly, 2009; Gleason, 1999). A second possible explanation is that students in early adolescence (ages 10-14) are just developing the capacity to do the kind of logical reasoning needed to explain the connection between claims and evidence (Moshman & Franks, 1986; Berland & Reiser, 2009). A third possibility, suggested by Crowell and Kuhn (2014), is
that students often have difficulty attending to the spoken arguments of others due to limits of their memory capacity. This makes the evaluation of others’ arguments in discussion particularly tricky. Finally, as suggested by Felton and Kuhn (2001), middle schools students may not be aware of the importance or usefulness of certain elements of argumentation, like warrants and counterarguments, and therefore, they are much less likely to incorporate these elements when engaged in argumentative discussion.

Though there are instructional programs that have been shown to have a positive impact on dialogic argumentation skills (e.g. Crowell & Kuhn, 2014), research on specific instructional strategies that teachers deploy to help students develop these skills is very limited (Newell, Beach, Smith, VanDerHeide, Kuhn, & Andriessen, 2011). Knowledge of such practices and approaches are needed to inform professional development for teachers who are teaching the argumentation standards of the Common Core. In this dissertation, I attempt to help grow the literature with three case studies, each focusing on one of the following: 1) what teachers do before a classroom debate to support students’ engagement in text-based argumentation, 2) what teachers do during a classroom debate to support students’ engagement in text-based argumentation, and 3) what students do when engaged in text-based argumentation during classroom debates.

All three studies draw data from the Catalyzing Comprehension through Discussion and Debate (CCDD) research project. This project, which was funded by the Institute of Education Sciences, is a large-scale school-level cluster-
randomized trial investigating the impact of classroom discussion and debate on students’ reading comprehension. The intervention used in the trial was a research-based, interdisciplinary curricular program for grades 4 through 8 known as *Word Generation* (WordGen). All curricular units under the WordGen program are designed to promote argumentation, discussion, and academic language skills.

*Social Studies Generation* (SoGen), designed for grades 6 to 8, is one of the four main curricula that make up the WordGen program. The data I examined for all three studies are transcripts from digital recordings of classrooms in which urban public middle school teachers were enacting lessons from units of the 6th-grade SoGen curriculum.

Specifically, for the first study (Chapter 2), I looked at two transcripts of co-teachers in the same classroom, each leading a small group of students concurrently. The co-teachers were helping their respective groups prepare for a classroom debate on the following debate question: “The Egyptian Pharaohs: Wise Investors or Wasteful Spenders?” (Strategic Education Research Partnership, 2012). For the second study (Chapter 3), I analyzed transcripts from three different classrooms in which teachers were facilitating a classroom debate on the above-mentioned debate question. One of the three debates took place in the co-teachers’ classroom after their preparation groups met. For final study (Chapter 4), I examined transcripts of six different classroom debates. Two of the three debates analyzed in Chapter 3 are used in Chapter 4. Each of the six debates focused on one of the following three debate questions: 1) “The Pharaohs of Ancient Egypt:
Oppressors or Great Leaders/Protectors of Order?” 2) “The Egyptian Pharaohs: Wise Investors or Wasteful Spenders?” and 3) “Which city-state was better overall: Athens or Sparta?” (Strategic Education Research Partnership, 2012).

I chose to look at classrooms enacting the 6th-grade SoGen curriculum for several reasons. First, since the literature on scientific argumentation is already large and growing, I wanted to focus on teachers supporting argumentation in non-science classrooms. Second, I wanted to hone in on argumentation that is based on text, not opinion and personal experience. In the lessons I chose, not only did students use text in argumentation, but also it was very easy to track down the text students were using because, in most cases, students took advantage of fact lists that were offered in the 6th-grade SoGen curriculum. Students were directed to choose facts from these lists to use as evidence to support their debate positions. These fact lists allowed me to see how students were connecting their claims to specific pieces of textual evidence, and how teachers were supporting students in this task, and in the task of generating counterarguments by anticipating facts opponents would use. No other curricular units under the WordGen program featured these fact lists. Finally, the data I chose were optimal in that I was able to compare: 1) how three different teachers facilitated the same text-based classroom debate from the SoGen curricular materials, and 2) how two different teachers in the same classroom approached the same task of helping a small group of students prepare for a text-based classroom debate. These characteristics make the lessons I
chose unique among the dozens of lesson recordings in the CCDD dataset and, in all likelihood, unique among argumentation lessons in general.

By examining these rare instructional situations in which teachers use debate-based curriculum that supports text-based argumentation in social studies classrooms, these studies shed light on: 1) what teachers might do to further support their students’ engagement in text-based argumentation in classroom discourse, and 2) what students may be capable of in classroom discourse when given support for argumentation. My hope is to provide a description of student argumentation that has not yet been documented in the literature (and that counters the low expectations many hold for classroom debate) and a description of practices and approaches that both researchers and teachers can weigh and consider in their quest to improve instruction for argumentation skills.

The first two investigations focus on the actions of teachers. In Chapter 2, as mentioned earlier, I present a case study of two co-teachers in the same classroom who are implementing a lesson from a unit in the SoGen curriculum. Using grounded theory (Charmaz, 2006) to categorize teacher actions, and a more fine-grained analysis to identify similarities and differences within categories, I compared the two teachers’ approaches in helping students explain how evidence supports their positions, guiding students in the generation of counterarguments based on evidence they anticipate their opponents will use, and attending to students when they struggle to generate or articulate an argument.

In Chapter 3, I present a case study of three different classrooms in
different schools, in which teachers are facilitating the same debate from a SoGen curriculum unit. Using the transcripts of the three debates, a research assistant and I identified episodes of talk that contain dialogic argumentation, which Nielsen (2013) defines as “a specialized way of arguing in which the participants not just defend their own claims, but also engage constructively with the argumentation of their peers” (p. 373). I then used grounded theory (Charmaz, 2006) to uncover patterns in teacher actions in these episodes across classrooms. Finally, I used this study’s findings, along with what is known about an argumentation curriculum that has been shown to have a positive impact on students’ dialogic argumentation skills (Crowell & Kuhn, 2014), to discuss the affordances and limitations of the WordGen curriculum program to promote such dialogic argumentation skills at scale.

In Chapter 4, the third study, I switch the focus from teachers to students. Using transcripts from six different classroom debates, in which teachers were implementing the SoGen curriculum, I identified the different types of argumentative moves students make in the debates and the quality of the support they used for each of these moves. I also examined how students explain the connection between their chosen evidence and their claims, and I explored the relationship between students’ argumentative moves and the quality of support for those moves. Finally, I compared these findings to the findings of other similar studies.

In the final chapter, Chapter 5, I discuss the connections among the findings
of the three studies, as well as the connections among the studies’ implications for practice and research.

Together, the three studies in this dissertation offer an intimate look at teachers and students as they venture into a task that diverges, in several ways, from instructional activities found in typical classrooms. Unlike the vast majority of classroom interactions in the United States and around the world, many of the interactions in the lessons I examined are student-to-student rather than teacher-to-student. Also, a good number of the teacher-to-student interactions I observed do not revolve around simple right or wrong answers, which is the norm. Rather, teachers prompted students for arguments that require reasoning. And, in some cases, teachers engaged with student-generated arguments in ways that require reasoning from the teachers themselves. In this dissertation, I examine interactions around argumentative tasks not only to inform argumentation instruction in individual classrooms, but also to explore the affordances of a curriculum to promote argumentation skills at scale.
Chapter 2.  

Teachers’ Approaches in Helping Students Generate Claim-Evidence Connections and Counterarguments for Text-Based Argumentation

There is no widely accepted gatekeeper subject in the humanities, as there is in mathematics. However, if students cannot demonstrate argumentation skills in high-stakes tests connected with high school graduation and college admission, or in analytical essays assigned in undergraduate humanities courses, they may struggle to have access to or success in institutions of higher education. The Common Core State Standards (CCSS) attempt to address this need by emphasizing argumentation skills as early as middle school. But argumentation even at this level is complex. For example, the Common Core Writing Standards for English Language Arts for grade 7 state that students should be able to: “Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text” (CCSS for ELA, 2010, p. 42). Teaching such skills to middle school students, many of whom struggle to comprehend the expository texts from which they are asked to draw evidence, and many of whom are just developing the capacity to judge whether or not a statement is logically sound (Moshman & Franks, 1986), poses a great challenge to many teachers.

Thus, professional development and support is needed for teaching the skills of argumentation. Unfortunately, there are significant gaps in the literature to inform this instruction, particularly in non-science classes. A comprehensive
review of the research shows that there is a demand for scholarship that addresses not only how English language arts and social studies teachers use instructional methods to promote the development of argumentation skills in reading and writing, but also how these teachers “contribute to the development of a social/audience network that supports or thwarts the appropriation of an argument schema within the social contexts of the classroom instruction” (p. 297). To help understand these teacher influences on students’ use of argumentation in classrooms, I will examine discourse patterns in two instructional conversations, which took place concurrently with two different groups of students in the same classroom. Each conversation was sponsored by one of two co-teachers who faced the same task of helping a small group of middle school students prepare for a classroom debate. I will look specifically at what teachers do in these conversations with regard to two elements of argumentation: 1) students’ connections between claims and evidence, and 2) students’ counterarguments.

**Background**

**Claim-Evidence Connections in Argumentative Discourse**

The Common Core State Standards expect students, by the end of grade 7, to “clarify the relationships among claim(s), reasons, and evidence” (CCSS for ELA, 2010, p. 42) in argumentation. In essence, students are expected to explain the connection between claims, that they have made or that others have made, and evidence, that they or others have chosen to support the claim. To explain the connection, they must explain how the evidence chosen supports the claim that
was made. The following excerpt is an example of a student explaining the connection between a claim and evidence during a classroom debate in social studies. His claim, or more precisely, his debate position is that the ancient Egyptians were wise investors (the opposing position is that the Egyptians were wasteful spenders). His evidence is a fact that he chose from a list of facts from which students were asked to draw evidence to support their positions. The fact, called Fact #4, states, “Egypt used its surplus to pay for the building and maintenance of large granaries to store grain. Stored grain was used during times of drought and poor harvests.”

[Fact #4] shows that Egyptians were wise investors because they stored granary and food because, let’s say if it were raining in Ancient Egypt, it would wash away all the crops and all the food stuff. So if they stored it, then they can uh- they can have, um, like food, so then when the rain finishes, and they can eat…and they won’t be starving.

He explains that the fact that they stored food shows the Egyptians were wise by offering a hypothetical situation in which Egypt’s food was washed away. In that scenario, they would not starve because they wisely stored food for times of emergency.

These explanations of connections between claims and evidence have different names in the argumentation and education literatures. McNeill and Krajcik (2007) called such a connection “reasoning” in science argumentation, and defined it as “a justification that shows why the data count as evidence to support the claims” (McNeill & Krajcik, 2007, as cited in Berland & Reiser, 2009, p. 33).
Before that, Toulmin (1958) called the connection a “warrant” and defined it as a line of reasoning or principles that connect evidence or reasons to a claim. Because “reasoning” has so many definitions, and because there is confusion in the literature over warrants (Freeman, 2015), I will use the term “claim-evidence connections” in this study to describe students’ explanations of how evidence supports a claim.

The research suggests that, for elementary and middle school students, making claim-evidence connections during argumentative discussions does not come naturally. Anderson, Chinn, Chang, Waggoner, and Yi (1997), in a study of 20 discussions of literature by 4th-grade students, found that though children’s naturally occurring arguments when taken in context are mostly logical, most of their arguments do not contain “explicit warrants to authorize conclusions” (p. 135). MacArthur, Ferretti, and Okolo (2002) reported a similar finding with slightly older students. Sixth-graders, when engaging in oral debates about a historical topic, also do not typically warrant their claims explicitly. Even 8th graders, participating in dialogic science argumentation in online discussions, were found to connect their claims and evidence less than 4% of the time (Clark & Sampson, 2008).

Researchers have explored what students actually do when they connect claims and evidence. Berland and Reiser (2009) took note of two methods students deploy. The first involves using background knowledge that is relevant. The following is an example of a student using such knowledge to connect a certain
fact to a claim. The fact (referred to by the student as Fact #3) states, “Egypt used its surplus to pay workers to build and maintain a large agricultural infrastructure – a complex system of canals, catch basins, dikes, and other devices to control the waters of the Nile River and to irrigate farmlands.” The claim is that the Egyptians supported everyone in their hierarchy (i.e. people in all social classes).

We bring to the table Fact 3 – pay workers to build and maintain a large agricultural infrastructure, a complex system of canals, catch basins, dikes and other devices to control the waters of the Nile. Well, this is very important because water is the basis of life whether you’re a royal or whether you’re a peasant. Ya know, without water nothing can survive.

This student uses his background knowledge of the importance of water to people’s survival in order to argue that Egypt’s efforts to control the waters of the Nile benefited all classes of people in Egypt’s hierarchy.

The second way students connect claims and evidence, according to Berland and Reiser (2009), is by describing “the logical connections between the evidence and their claim” (p. 34). The following excerpt features this kind of claim-evidence connection. In the example, a student tries to defend her claim/position that it was better to be a Spartan than to be an Athenian. The fact/evidence she uses to defend her position is that Sparta had two kings:

...Sparta has had two kings in a group of elders...so if they had two kings, that would make them like more- like responsible for more stuff?

Here she concludes, somewhat logically, that having more than one king allows Spartans to take responsibility over more things than people who have only one
king or ruler and therefore, it is better to be a Spartan.

Both of these routes (using relevant background knowledge and describing logical connections) to claim-evidence connections present potential obstacles to students. First, students often do not have the background knowledge needed to connect claims to evidence in arguments, as suggested by several studies (De La Paz, 2005; Felton & Herko, 2004; Ferretti, Lewis, & Andrews-Weckerly, 2009; Gleason, 1999). Second, many elementary school students and middle school students may not yet have the capacity to make and describe logical connections. Logical connections can be thought of as valid inferences. Though we know from research that middle school students (children ages 11 to 14) can make correct inferences (Schmidt & Paris, 1983), they may not yet have developed the concept of inferential validity, as that develops typically between 10 and 12 years of age (Moshman & Franks, 1986). Thus, there are some middle school students who cannot yet make valid inferences and, consequently, may struggle to make claim-evidence connections. Furthermore, generating claim-evidence connections specifically during classroom discussions, compared to making these connections for individual argumentative writing, adds another level of challenge for students given the more impromptu nature of such oral discourse.

Of course, there are many cases where claim-evidence connections are simply not needed because the link between claim and evidence is obvious. However, as these connections play a central role in many arguments, students should also learn to distinguish between arguments that need claim-evidence
connections and those that do not. All together the above-mentioned studies suggest that elementary through high school students may benefit from some guidance when attempting to generate claim-evidence connections, especially for argumentative discussions. The present study explores how teachers approach claim-evidence connections in instructional conversations with small groups of students.

**Counterarguments in Classroom Argumentation**

The Common Core State Standards also expect students, by the end of grade 7, to “delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence” (CCSS for ELA, 2010, p. 49). Essentially, students are expected to make thoughtful counterarguments to arguments they have heard in discussion. Crowell and Kuhn (2014) specify two types of counterarguments in argumentation among middle school students: countercritiques and counteralternatives. They describe countercritiques as instances in which a disagreement with an opponent’s preceding move is expressed and that disagreement is “accompanied by a critique of the content of the opponent’s move” (p. 371). Here is an example of a countercritique and the move that preceded it:

**Preceding move:** …another thing that [the Egyptians] did that was wasteful was...when pharaohs are paying thousands of workers with their surplus to make more jewels for them in the afterlife, when pharaohs already had enough amount of jewels (that’s a lot) already.

**Countercritique:** So...[the Egyptians] had their beliefs, like we have our beliefs. They had their beliefs so they thought they would go into
the afterlife, they would need all this jewelry…so that they could live in the afterlife, so it’s not wasteful because they thought this.

Counteralternatives they describe as instances in which a disagreement with an opponent’s preceding move is expressed and that disagreement is “accompanied by an alternate argument in support of one’s own side” (p. 371). In the following, I provide an example of a counteralternative and its preceding move:

Preceding move: …the Egyptians were wasteful spenders and many reasons. One of the reasons were that they used to build stuff that weren’t necessary like a bunch of monuments for the pharaohs…

Counteralternative: I think that…they’re wise spenders ‘cause who wants to waste their money on any other product…

For simplification, I will only use the term counterargument in this study, though both countercritiques and counteralternatives appear in the data.

Counterarguments, like claim-evidence connections, also do not seem to come naturally to either elementary or middle school students in classroom discourse. In an analysis of six small-group discussions on historical topics with 4th graders, researchers found that only 11% of the students’ argumentative moves were oppositions (Pontecorvo & Girardet, 1993). Felton and Kuhn (2001) found that even 7th and 8th graders generated counterarguments, during argumentative discussions, far less frequently than did adult community college students.

Difficulty with counterarguments may be explained, in part, by students’ struggle to attend to the arguments of others in discussion. Electronically conducted dialogues (ECDs) make this attending easier by providing transcripts of the discussion that are immediately available. Crowell and Kuhn (2014) showed
that middle schools students’ rates of counterargumentation during dialogues improved when they were exposed to an argumentation curriculum that had the students engage in dialogic argumentation through ECDs regularly over three years. But given that the vast majority of teachers are unable to implement the argumentation curriculum modeled in the Crowell and Kuhn (2014) study because of the amount of time and technology it requires, it is useful to know how teachers support counterargumentation in classroom discourse in other ways. This study explores teacher approaches to counterarguments in the context of small-group debate preparation.

**The Present Study**

The skills of connecting claims and evidence in arguments and producing counterarguments are essential to doing good argumentation. The literature is presently skewed toward instructional programs that have been proven effective at improving such argumentation skills (Newell, et al., 2011), but this may be of limited use to teachers who are unable to implement these programs, many of which are time-intensive and require resources their schools may not have. In this study, I examine discourse patterns in instructional conversations where the focus is getting students to generate and articulate claim-evidence connections and counterarguments, with the hope of better understanding what teachers can do to support these essential elements of argumentation.

I found instructional conversations with this specific focus in one class session in which two social studies co-teachers were helping two separate groups
of students prepare for a classroom debate. This set of transcripts was ideal for this study for several reasons. First, the curriculum unit (which I will describe in detail in the next section) the co-teachers were using offers students a list of facts from which to draw evidence, and features scaffolds for students to connect claims and evidence. Because students actually use this list of facts in their arguments and because the curriculum materials direct students to connect claims and evidence, it is easier for me to distinguish claims from evidence from claim-evidence connections in the transcripts. This is key, as I am trying to figure out what teachers do to help students specifically with claim-evidence connections. Other recordings of class sessions in the dataset available to me also featured teachers helping students prepare for debates, but the curricular materials they used did not feature fact lists and were not as explicit about claim-evidence connections.

A second reason this set of transcripts was ideal is that the two co-teachers were doing the exact same task for the same amount of time with two different groups of students. This allowed me to compare the teachers’ approaches to claim-evidence connections and counterarguments. Other recordings in the dataset featured teachers helping students with these argumentation skills but they were not leading the groups like the co-teachers were. Rather, the teachers were dropping by on student-led groups that were preparing for debates. A review of the literature argues that studies examining “teacher-sponsored instructional conversations” (Newell, et al., 2011, p. 297) around argument schemata are needed.
A third and final reason to examine the transcripts of these co-teachers is that they were teaching a debate-based curriculum for the first time, and they were not experts at teaching argumentation. I think it is important to see what teachers, who are novices at teaching argumentation, do when approaching the teaching of argumentation. These observations can be used to modify argumentation curriculum materials, making them more supportive of teacher learning in addition to student learning (e.g. Davis, Palincsar, Arias, Bismack, Marulis, & Iwashyna, 2014).

The research question guiding this study is: How do teachers, in instructional conversations, approach the task of helping middle school students generate and improve claim-evidence connections and counterarguments for text-based argumentation?

**Methods**

**Instructional Context**

In this case study, I analyze data from an implementation of the Social Studies Generation (SoGen) curriculum. This curriculum was developed and used as part of a larger intervention in the Catalyzing Comprehension through Discussion and Debate (CCDD) research project, an Institute of Education Sciences-funded large-scale school-level cluster randomized trial investigating the impact of classroom discussion and debate on 4th through 8th grade students’ reading comprehension. In this larger study, 6th-8th grade teachers in the treatment group implemented SoGen curriculum units and briefer Word Generation Weekly
Both sets of units fall under the research-based Word Generation (WordGen) program, which was designed to promote argumentation skills and the learning of academic language, “words that students are likely to encounter in textbooks and on tests, but not in spoken language” (SERP, 2011). Two key aspects of the program are: 1) its cross-disciplinary nature – the program is designed to be taught not only in social studies, but also in language arts, math, and science so that students may observe and use the same academic words in different contexts, and 2) the integration of conversation and controversy – the weekly curriculum units are focused on controversial topics that students are motivated to discuss or debate.

The SoGen curriculum is designed for grades 6 through 8. The 6th grade curriculum is themed around ancient civilizations and comprises six weeklong units. For this study, I will examine data from the enactment of Unit 6.2, which focuses on the following debate question: “Were the pharaohs of Ancient Egypt wise investors or wasteful spenders?” (SERP, 2012). Unit 6.2, like the other social studies units, consists of five sessions, each of which is designed to fill one class period. Session 1, of Unit 6.2, features a “Reader’s Theater,” which is common to all curricular units in the WordGen program. The Reader’s Theater is a short skit in which fictional students have a discussion. For the 6th grade SoGen curriculum, Reader’s Theaters get students engaged in the historical debate of the unit by describing a related modern-day debate to which middle school students can connect. In Unit 6.2’s Reader’s Theater, the fictional middle school students are
debating how their school’s surplus should be spent, on needed new bathrooms or a new swimming pool.

Session 2 of Unit 6.2 is focused on building students’ background knowledge for the debate. There are short passages and discussion questions about: the pyramids of Ancient Egypt, how Egypt got its surplus, and a historic strike that occurred when Egyptian leaders stopped payment to workers in Deir el-Medina when the surplus ran low.

In Session 3, students begin to prepare for the big debate. The curriculum materials offer nine facts all stating different ways the Egyptians spent their surplus (e.g. “Fact #2: Egypt used its surplus to pay thousands of crafts workers to make items like jewelry and furniture for the Pharaohs to use in the afterlife” (SERP, 2012)). Students are charged with working in partners to rank each of the nine facts on a scale of 1 to 9, 1 being very wise and 9 being very wasteful.

Session 4 is the debate day. Students choose or are assigned to one of two sides. They then spend time in groups choosing facts that support their side, explaining how each fact supports their side, and generating counterarguments. After group preparation, the students debate the topic. During the final session of Unit 6.2, Session 5, students write a persuasive essay on the debate topic using the target academic words. For this study, I focused specifically on the first half of Session 4 of Unit 6.2, when students are preparing in teacher-led small groups for the whole-class debate.

Participants
This case study’s participants include two co-teachers, teaching in the same 7\textsuperscript{th} grade classroom in a public school located in a large urban area in the Northeast (in a couple of districts participating in the research project, the 6\textsuperscript{th} grade SoGen curriculum was used in 7\textsuperscript{th} grade because ancient civilizations was taught in 7\textsuperscript{th} rather than 6\textsuperscript{th}). Both co-teachers are veteran teachers (they have taught for more than 3 years) and, at the time of the recordings, they were teaching the curriculum for the first time.

**Data Sources**

The data for this case study comprised one video recording and multiple audio recordings of one 50-minute class session in which the two co-teachers (Ms. N and Mr. L\textsuperscript{1}) were leading Session 4 of Unit 6.2 of the SoGen curriculum for grade 6. Each of these recordings was transcribed in full to produce two transcripts – one focused on the small group discussion led by Ms. N and one focused on the small group discussion led by Mr. L. The two small group discussions occurred simultaneously *before* the class debate, and the goal of each group was to prepare for the debate. Ms. N’s group prepared to argue that the Egyptian pharaohs were wasteful spenders, while Mr. L’s group prepared to argue that the Egyptian pharaohs were wise investors. Each group did the following six tasks in the course of their conversation: 1) decided on three facts, from a list of 9 facts in the curriculum materials, to support their position, 2) generated explanations for how each fact supported their position (a.k.a. claim-evidence connections), 3) chose

\textsuperscript{1} Pseudonyms have been used to protect the identities of all participants.
facts that they anticipated their opponents would use to support the opposing side, 4) generated reasons why these anticipated facts actually supported their side (a.k.a. counterarguments), 5) reviewed the procedures for the debate, and 6) crafted an opening statement. The rest of the recording after the group conversations features the debate, facilitated by Mr. L. The debate took place in three rounds. In between those rounds, the students met back in their small groups to prepare for the next round. The recording ended with the end of the third debate round.

For this study, I analyzed only the part of the transcripts containing small-group discourse led by each teacher before the debate because I wanted to examine and compare how different teachers support students’ reasoning before students embark on an independent argumentative task, which in this case was the classroom debate. Thus, I did not analyze any discourse that took place during the student debates or during group preparation between debate rounds.

Data Analyses

To distinguish the approaches used by teachers to help students generate and improve claim-evidence connections and counterarguments, I used grounded theory (Charmaz, 2006) to generate codes that categorized teacher actions. I took note of teacher actions in which there were discrepancies between the two teachers. For example, one teacher gave students time to generate connections on three occasions, while the other did not do this at all. Also, to see if there were differences in how teachers carried out certain actions, I did a qualitative analysis.
For example, both teachers prompted for counterarguments but upon closer examination, one teacher tended to ask straight out for counterarguments (e.g. "All right, what are we going to put for our second counterargument?"), while the other teacher tended to be more specific (e.g. "So how- if they present that to us as it’s not wise, how can we flip that on its head and say that it is wise?"). I also took note of places in the transcripts where students seemed to be struggling (e.g. silences after teacher questions and students saying that they don’t know or need more time to think) or seemed to be in disagreement. I looked at and described how teachers responded in those situations.

Findings

Approaches to Claim-Evidence Connections

A close examination of the transcripts from the two teacher-led debate preparation groups showed that the teachers had some similarities in their approaches to claim-evidence connections. Before or while prompting their students to make a connection between evidence and a claim, both Ms. N and Mr. L often referred specifically to: 1) the fact students chose from the fact list to support their position, and 2) the group’s position (i.e. their claim). The following transcript excerpt provides an example of these references:

And then, we had the last one was [Fact #] 2. So, let’s look at that one, which is: “Pay thousands of crafts workers to make items like jewelry and furniture for pharaohs to use in the afterlife.” So why do we think that’s wasteful? Take a minute to share. Write your thinking down and then we’ll share.
Here Ms. N reads Fact #2, which was chosen by her group to defend their position, verbatim. When referring to the facts before/during prompting for claim-evidence connections, the co-teachers read the fact verbatim, paraphrased it, or simply mentioned the fact’s number. In addition to the fact reference, she refers to the group’s position (that the pharaohs were wasteful spenders) when she asks, “So why do we think that’s wasteful?”

The teachers also had differences in their approaches to claim-evidence connections. For example, Ms. N appeared to follow a protocol for getting her students to generate claim-evidence connections. For each of the three facts her group chose to defend their position, she: 1) read the fact from the curriculum materials, 2) gave students time to individually generate and write down an explanation for how that fact supported their position, 3) had every student share their claim-evidence connection with the group, and 4) offered each student very brief feedback. The following excerpt illustrates the protocol:

Ms. N: So we all had number 5, “Pay people to oversee building projects. One record shows that on a large building project for the Pharaoh, one overseer was paid 28 times what his lowest paid workers earned.” So do we want to put that as fact - the first fact on our paper?

((Multiple students say yes.))

Ms. N: So put fact #5, then you’re gonna check which one? Wasteful spenders. And then I want you, independently before we discuss it as a group, to tell me why you think that.

((Students work silently on the task.))
Ms. N: Boy V, do you want to tell us why you think?

Boy V: Because they paid people more money to watch other people work.

Ms. N: Okay. Good. So they paid people more money to watch the other people who were doing the work. Girl G2, do you wanna share?

Girl G2: Sure. Because the pharaohs are paying the watchers who aren’t doing anything instead of the people actually doing work and like they deserve it more.

Ms. N: Good. Girl M, anything different?

Girl M: Um, (I think) it’s not fair that the watchers get paid 28 times more than the actual workers themselves.

Ms. N: Good. Girl P?

Girl P: They’re wasteful because they did not justify the surplus money for the watchers.

Ms. N: Excellent. Nice use of the vocabulary words. Girl G1?

Girl G1: I don't think that the whole thing is wasteful. I just think that the money- the difference of money is wasteful.


Each time Ms. N followed the protocol, every student was able to generate and share an original claim-evidence connection, and every student received positive though non-specific feedback on the content of his or her connection.

Mr. L’s approach was less structured than Ms. N’s. Rather than call on every student to provide a claim-evidence connection, he opened the floor for any student to speak after prompting for a connection. Once a claim-evidence
connection was in consideration, he asked questions about the content of the connection, as demonstrated in this excerpt:

Mr. L: We can definitely justify with some facts, why the pharaohs- why they spent their money wisely. Why- okay, so what are some reasons, Boy D, that you have or anybody else in the group, that we’re gonna use to support our fact of building and controlling the infrastructure for agriculture?

Boy D: Well, I know that without water to get farmland and crops we wouldn’t- they wouldn’t have a surplus to do other things?

Mr. L: Okay, so they want to be creating a surplus?

Boy D: Yes, creating a surplus.

Mr. L: Okay, what are they going to be using the surplus for?

Boy D: Surplus would be used [for] extra food in times of drought, um, to support their hierarchy, and-

Mr. L: Okay.

Boy D: So on.

Mr. L: All right. Um- does it say what types of infrastructure they used?

Boy D:Um, they used a complex system of canals, catch basins, and dikes.

UNK: Catch basins.

Mr. L: Okay, so they were trying to control the waters of the Nile.

Boy D: Yes, control the water flow.

In this case and others, Mr. L’s questions appear to prompt students to
demonstrate or confirm their understanding of terms (e.g. “surplus” and
“infrastructure”) that were either used in, or were related to, the claim-evidence
connection made. Unlike in Ms. N’s group, these exchanges about one connection
were extended, and not every student in the group had the opportunity to share a
claim-evidence connection.

**Approaches to Counterarguments**

The co-teachers’ approaches to counterarguments also had similarities.

Both offered a variety of supports when prompting for counterarguments. The
following excerpt for Mr. L’s group demonstrates these supports:

Mr. L: So we also wanted to talk about [Fact] #5: “Pay people
to oversee building projects. One record shows that in
a large building project for the pharaoh, one overseer
was paid 28 times what his lowest paid workers
earned”… Now remember. Remember, remember, you
are coming from the point of wise investors. So they’re
going to be talking about why they thought they were
not wise. So we have to flip their point around and
say-

Girl R: And say these are the benefits out of them.

Mr. L: They were wise. Right. So, we have to take a look at
#2 again and look and say, “Listen, you’re looking at
this wrong. This is why- this is why it was wise.”

Mr. L offered a series of four connected moves here. They are: 1) reminding
students of what their group’s position is in the debate (e.g. “…remember, you are
coming from the point of wise investors…”), 2) clarifying that their opponents
will argue against their group’s position (e.g. “So [our opponents are] going to be
talking about why they thought [the pharaohs] were not wise.”), 3) prompting
students to take the facts that they think their opponents will use against them and argue that these facts actually support their group’s position (e.g. “So we have to flip their point around and say…They were wise.”), and 4) modeling for students how they might begin to articulate their counterarguments during the debate (e.g. “So, we have to take a look at [Fact] #2 again and look and say, ‘Listen, you’re looking at this wrong…this is why is was wise.’”). Mr. L continued to be very specific every time he prompted his group for a counterargument, as seen in the following excerpt:

Yeah. So [Fact #] 1 says, “Pay thousands of workers to build monuments such as the Great Pyramid of Giza, which is one of the 7 wonders of the world, and Queen Hatshepsut’s temple at Deir-el-Bahri, which is considered to be one of the most beautiful structures in the world.” So, how can we say that that was money well spent?

Here Mr. L addresses Fact #1, which his group identified as a fact their opponents might use to argue that the pharaohs were not wise. He then essentially asks how they might argue that the monuments were a wise use of resources.

Ms. N, unlike Mr. L, did not offer support for counterarguments after the first prompting. Leading up to the following excerpt, which will demonstrate this, Ms. N’s group is trying to come up with a counterargument for Fact #4 (“Egypt used its surplus to pay for the building and maintenance of large granaries to store grain. Stored grain was used during times of drought and poor harvests”). The students identify Fact #4 as a fact their opponents might use to argue against their position that the pharaohs were wasteful. Girl G2 argues that some leaders did not share the stored grain with the people:
Girl G2: Yeah, but like- like there were some leaders, I think, that would keep [the grain] to themselves- like tricking the people that this leader would not give it to them and keep it for themselves for survival.

Ms. N: Okay. So how can you come up with a counterargument based on what you’re saying about giving it to the people?

Girl G2: Like he could have had a surplus but only keep it for himself.

Ms. N: Uh-huh.

Girl G2: Instead of the people.

Ms. N: So you’re saying that some of the pharaohs were corrupt and they kept the extra food.

Girl G2: Uh-huh.

Ms. N: And the surplus of grain and didn’t distribute it the way. So then how are we gonna word that for our counterargument?

Here Ms. N prompts twice for a counterargument, based on Girl G2’s idea about leaders, but she does so without referring to either the group’s position or the fact to be used in the counterargument, as she did when she prompted her students for a counterargument the first time.

There were also differences in how the co-teachers engaged with students’ counterarguments once they were articulated. Mr. L engaged with the counterarguments in a variety of ways including: building upon their counterarguments, asking clarifying questions, confirming similarities between different counterarguments, and giving useful feedback. The next excerpt
showcases this feedback:

Mr. L: Yeah. So number 1 says, “Pay thousands of workers to build monuments such as the Great Pyramid of Giza, which is one of the 7 wonders of the world, and Queen Hatshepsut’s temple at Deir-el-Bahri, which is considered to be one of the most beautiful structures in the world.” So, how can we say that that was money well spent?

Boy D: Well, it’s somewhat like the Washington Monument in Washington, D.C. It took a long time to build and it took a lot of money and resources to build.

UNK: But it was all worth it in the long run.

Boy D: It was all worth it because the sites help the beauty reflected on our nation’s capital.

Mr. L: Okay, well remember, we’re still talking about Egypt. I get your analogy, but let’s just keep it here.

UNK: It could be wise because if it’s so beautiful then there will be tourists trying to go there and see it.

UNK: (And they will get money.)

UNK: And they will make a lot of money.

Mr. L: But were there a lot of tourists at this time?

Here the students considered using present-day examples to explain that the pharaohs were wise to build the great monuments they did, but Mr. L was twice very specific as to why this reasoning may not work for their counterargument.

Ms. N also engaged in different ways with the counterarguments her students offered, which the next excerpt will show. Before the excerpt that follows, students in Ms. N’s group identified Fact #3 (“Egypt used its surplus to pay
workers to build and maintain a large agricultural infrastructure—a complex system of canals, catch basins, dikes, and other devices to control the waters of the Nile River and to irrigate the farmlands”) as one their opponents might use to weaken Ms. N group’s position that the pharaohs were wasteful. To counter their opponents, Ms. N asks them the following question:

Ms. N: Why would it be that the pharaohs shouldn’t have to spend the surplus on that infrastructure?

Student U: Because if they spend the surplus ( ) in which they already have a surplus of, it kind of makes no sense because they’re going over their head with what they already have- don’t need.

Ms. N: So, are you saying that they already have the infrastructure in place so they wouldn’t need to spend extra money on it?

Student U: Yeah.

Student U: Yeah, because like doesn’t it flood? The Nile?

Ms. N: Uh-huh.

Student U: So that can just irrigate the plain, so why would they-

Girl P: They already, at the end of their farming season, they already have a surplus. They already store it in the grain. So why waste more money on more infrastructure?

Ms. N: Okay, so why don’t you write those ideas down in the box so that if they use 3, you’re ready to give a counterargument on it.

As seen here, Ms. N asks clarifying questions. She also does not comment on the content of the counterargument. In another instance, not shown here, she asks
students to write down the counterargument if they think it is a good argument.

**Students Struggling to Generate Connections**

During their group conversations, both Ms. N and Mr. L faced situations where students struggled to come up with a claim-evidence connection or counterargument, as illustrated in this excerpt:

Mr. L: Okay. So, can we justify the buildings of these monuments, um, to kinda prove the fact that they were- that this was wise?

*(long pause)*

Mr. L: What do we think? So why is it wise?

*(long pause)*

UNK: Because maybe they were thinking about what could happen in the long run, like what great things they have there because of their religion?

Mr. L: You could refer to talking about what the creation of more what here?

UNK: Population?

Mr. L: Jobs, right? More jobs better- okay, to build these things we had to have workers.

Though Student UNK does finally manage to come up with a claim-evidence connection (about monuments being “great things” that could last “in the long run”), Mr. L offers a connection of his own (about the building of monuments leading to the creation of jobs) for students to use in the debate. Ms. N faced a similar situation when Girl G2 struggled to articulate her idea as a counterargument:
Ms. N: So then how are we gonna word [your idea] for our counterargument?

Girl G2: Um, let me think.

Ms. N: Hmm.

Girl G2: The way-

Ms. N: This is the thinking way, right?

Girl G2: The pharaoh like- let me think.

Girl P: Why make more than one granary when you can just make one big one?

Ms. N: Okay.

Girl P: Because back then there wasn’t a lot of people. There wasn’t the population that we have today.

Girl G2: Because like- people like- Died.

Girl P: There was- there was no need for more than one- like one building.

Ms. N: Okay. So if you think that is a good argument, write that in that paragraph.

At the beginning of the excerpt, Girl G2 is thinking of a way to word her idea (about the Egyptian leaders not always sharing the food they stored with the people) as a counterargument to a possible argument by her opponents that the Egyptians were wise for storing food, but then Girl P offered a completely different counterargument about multiple granaries to store food being wasteful. Ms. N encouraged the group to write down Girl P’s counterargument, but Girl
G2’s counterargument idea was not revisited because the group had to move on to review the debate procedures.

**Students Disagreeing about Best Evidence**

The SoGen curriculum materials used by the co-teachers directed students to choose three facts to support their team’s position and explain how each of those facts supports their position. The materials also direct students to: 1) write down two facts they think their opponents will use to support their position, and 2) generate a counter-argument based on each of these facts. As both groups of students were doing these tasks, both co-teachers faced situations where students disagreed about what which facts were best to support their position or use as a counterargument. For example, when Ms. N’s group tried to identify a fact their opponents (who were defending the position that the pharaohs were wise spenders) were most likely to use, the students disagreed. The two facts in contention were Fact #4 (“Egypt used its surplus to pay for the building and maintenance of large granaries to store grain. Stored grain was used during times of drought and poor harvests”) and Fact #7 (“Egypt used its surplus to pay an army of soldiers and a large numbers of officials to unite Egypt during three long periods—Old Kingdom, the Middle Kingdom, and the New Kingdom…Unification and hierarchy helped maintain order and stability”). To settle the disagreement, Ms. N took a simple vote, as seen here:

Ms. N: So, were we going to scratch [Fact] #1 for our counterargument and [Fact] #4 was pay for the granaries? Remember, there was a lot of discussion
about those granaries yesterday. Or there was a lot of
discussion about the soldiers in keeping Egypt safe. So
which one do you think is most likely the one that
they’ll [use to support their argument that the pharaohs
were wise spenders]-


Student U: [Fact #] 4.

Girl P: I think 4.


Girl G1: 4.

Ms. N: Four. Four. Girl G1, what do you think?

Girl G1: 4.

Ms. N: 4. And you think 7?

Girl G2: Yeah.

Ms. N: I think you’re overruled.

Mr. L also ended with a simple vote when his students disagreed about what the
last of three top facts should be to support their position that the Egyptians were
wise spenders. The facts in contention were Fact #7 (as seen above) and Fact #9
(“Egypt used its surplus to pay for priests and scribes. Scribes kept track of stored
goods, land holdings, debts, and many other records needed by government
officials. During the New Kingdom, priests of Thebes controlled about a third of
Egypt’s farm lands”). However, unlike Ms. N, he did give them an opportunity to
explain to each other why they thought a certain fact was stronger:

Mr. L: All right, so we’re gonna round this out with another
[fact to defend the group’s position]. What are we thinking?


UNK: Number 7 or 9.

Boy D: Um, I think #9 as well.

UNK: I would say #7 for the third fact- the third, um, most important-

Mr. L: Okay. Defend.

UNK: Okay, so for-

UNK: Well, because if you unite Egypt, unify Egypt, with all the three- the middle kingdom, the old kingdom, and the new kingdom, it would create more stability. Everything would run smoother and stuff.

Mr. L: Okay, and what do we think about #9?

Boy D: Number 9 is important because they need to keep track of everything that’s going on inside the kingdom? They need to know what’s happening- amounts of bread, amounts of water-

UNK: Just basically organization.

Boy D: Organization, you know? Justification. All that stuff.

Mr. L: Okay. Girl A1, what do you think? Which one, 7 or 9, (‘cause those-)?

Girl A1: Number 7 because like- they would have more protection because of the soldiers.
UNK: But also don’t you have to think for #7, is that like-would people really cross all the great deserts and the seas just to get there?

Mr. L: Boy J?


Mr. L: You like #9? So looks like we’re pretty- so we got-who’s #9?

((The kids vote.))

Mr. L: Okay, so we’re 3 #9’s? Okay, so it looks like we’re going with #9. Okay, um, so, we were basically saying that they need to keep track of the surpluses.

Though Student UNK was able to respond to Girl A1’s defense of Fact #7 (Student UNK questioned the need for soldier protection because of Egypt’s protective geography), the group did not come to an agreement through discussion. Rather, the group went with Fact #9 because Mr. L did a count and most people in the group supported that fact.

Discussion

The teacher directions for Session 4 of Unit 6.2 of the SoGen curriculum (the lesson implemented by teachers in this study) are cursory. They tell teachers to put students in groups and give them 10-15 minutes to: 1) choose facts to support their debate positions and explain how those facts support their position, and 2) anticipate facts their opponents will use and generate counterarguments based on those facts. Given these simple directions, both Ms. N and Mr. L go above and beyond in their implementation of this lesson. Ms. N makes sure that
every single student in her group gets to do and share their critical thinking, while Mr. L comes up with ways on the spot to make counterarguments more accessible to his students. There are also many instances of both teachers not only offering extra support to students in this activity, but also demonstrating patience and keeping students focused on the task while remaining open to student ideas that were “off book.” Their willingness to further bolster the curriculum’s supports suggests that Ms. N and Mr. L are teachers who are flexible and dedicated enough to find ways to help their students reach the elusive intellectual skill goals that feature prominently in the Common Core State Standards. At the time the data of this study were recorded, these teachers were still learning how to support students toward these more rigorous goals.

I found that both teachers supported their students in the task of generating claim-evidence connections by referring to a specific fact and the group’s position before or while prompting the students to explain the connection between the two. By bringing their students’ immediate attention to the claim and piece of evidence that needed connection, the teachers may have made it easier for students to actually do the critical thinking behind the connection. Once students made public their claim-evidence connections, however, the co-teachers engaged with these connections differently. Ms. N’s responses to student connections were positive and brief (e.g. “Good!” and “Excellent!” and “Great!”), which afforded the time for every single student in the group to share. Mr. L’s engagement with individual student’s claim-evidence connections was more specific and extended, as he asked
students clarifying questions and questions about the terms they used. His strategy, however, did not seem to allow time for every student to share.

I found more similarities in the co-teachers’ approaches to counterarguments. Both teachers provided supports when they prompted for counterarguments, though Ms. N did not offer these supports every time she prompted for counterarguments. The co-teachers also engaged with their students’ ideas for counterarguments in different ways. Mr. L gave specific feedback, while Ms. N let the students decide for themselves whether or not the arguments were strong.

There was also a similar instance in both co-teachers’ groups in which students were struggling to generate or articulate an argument. To help, Mr. L offered an idea of his own to use in the argument, while Ms. N allowed another student to offer a different counterargument, so that the student struggling to word her counterargument did not have to do so.

A second similar instance for both co-teachers’ groups happened when their students’ disagreed about which fact was best to use for an argument or counterargument. Though there was an opportunity for students within groups to argue with one another and come to a consensus, both teachers ended up taking a simple student vote on which fact to use for the debate.

The findings suggest that teachers face multiple decisions when facilitating conversations in which students are generating arguments and counterarguments in preparation for an independent argumentative task. They must weigh every student sharing an argument against looking at one student’s argument in depth.
They must weigh offering verbal supports every time they prompt for arguments against taking away the support for subsequent promptings. They must weigh giving critical feedback on a student’s argument on the spot against letting the students decide for themselves whether an argument is strong enough to use against opponents. They must weigh letting students struggle to come up with an argument against providing an idea for them to work with. They must weigh the time it takes for students to argue and come to consensus against the efficiency of taking a vote to decide. There are no “right or wrong” decisions in these cases as all of these approaches may have benefits for developing students’ argumentation skills.

Some approaches, however, are arguably more taxing on teachers than others, such as the ones that require teachers to examine a student’s argument in depth, offer thoughtful feedback on a student’s argument, and work with a student struggling to turn a nascent idea into a full-blown argument. These tasks demand that teachers attend very closely to what individual students say and think on their feet. Giving this level of attention and thought is particularly challenging in the context of a discussion in a classroom environment where there are so many things and students to attend to in a limited amount of time.

More research is needed to determine which approaches/strategies have the greatest impact on argumentation skills and when. For example, certain approaches may be better when first teaching kids argumentation, and certain approaches may be better when kids have more experience with it. It may be
helpful to identify teachers who are experts at teaching argumentation, and examine if and how their approaches change, as their students’ argumentation skills change, over the course of a school year.

**Conclusion**

Given the critical importance of argumentation skills for work that is collaborative (National Research Council, 2008; Thomas & Brown, 2011), it is incumbent upon researchers and practitioners to work together to find practices and approaches, for teaching these intellectual skills, that are easily learned and adopted by teachers. This study identifies approaches that can later be tested for effectiveness and teacher-friendliness. In the meantime, the findings may be used to make teachers aware of some possible ways to engage with student-generated elements of argumentation, with the hope that teachers will figure out for themselves which approaches help their students become better arguers over time.
Chapter 3.

Promoting Sustained Dialogic Argumentation at Scale: Affordances of the Word Generation Curricular Program

Essential to the career-readiness of individuals in today’s economy, and in future economies, is the possession of argumentation skills, and the ability to deploy those skills during collaboration (National Research Council, 2008; Thomas & Brown, 2011). The Common Core State Standards (CCSS) appear to be in accord with this view. By emphasizing argumentation not only in writing, but also in speaking and listening, the CCSS support the goal of using argumentation to work constructively with others.

For argumentative writing in English language arts, the Common Core is fairly straightforward. In middle school, students are expected to “write arguments to support claims with clear reasons and relevant evidence” (CCSS for English Language Arts, 2010, p. 42). The speaking and listening standards for argumentation, on the other hand, are more complicated. By the end of grade 7, students should be able to “delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence” (p. 49). Thus, not only are students expected to describe another person’s spoken argument (most likely in the course of a classroom discussion or debate), they must verbally assess the evidence and reasoning behind that argument, which in many cases means that they must critique the argument or give a counterargument.
This speaking and listening standard may be particularly challenging for middle school students from socially disadvantaged segments of the population. A study by Felton and Kuhn (2001) compared the dyadic argumentative discussions of 7th and 8th graders with those of adult community college students. All participants were from low SES backgrounds, and the topic was capital punishment. They found that these middle school students clarified their own views four times as often as they critiqued their partner’s views. They also found that the adults used counterarguments and rebuttals more than twice as frequently as the younger students, who mainly took turns and explained their positions during the discussions. These findings suggest there may be social and developmental factors that influence middle school students’ ability to do counterargumentation.

One curricular intervention, however, was found to improve rates of counterargumentation during dialogues among urban middle school students from low-income to lower middle-income backgrounds (Crowell & Kuhn, 2014). Designed to promote what the authors call “dialogic argumentation skills” (i.e. counterargumentation skills), the curriculum required the students in the intervention classes to meet for 52 fifty-minute sessions per year for three years. During the course of each year of the intervention, students were introduced to four different social issue topics (e.g. homeschooling, the one-child policy in China, best methods for dealing with crimes by juveniles). Students spent 13 class sessions on each topic. In the first three sessions, students supporting the same
side of the issue collaborated to: 1) generate supporting reasons for their side, 2) evaluate those reasons, 3) anticipate their opponents’ reasons, and 4) generate counterarguments to their opponents’ reasons. For the next six class sessions, same-side students were paired and in those pairs they argued, during 25-minute electronically conducted dialogues, with different pairs of students who were on the opposing side. They also spent time reflecting on these dialogues. During the final four sessions, students participated in a whole-class debate followed by a debrief session.

Crowell and Kuhn (2014) contend that this intervention curriculum, which does not even require direct instruction, was effective because students had the opportunity to engage in “sustained and dense dialogic argumentation” (p. 377). Yet, as admitted by the authors, this successful intervention would be difficult to take to scale because it requires: 1) a minimum of 16 computers on a wireless network (for the electronically conducted dialogues), and 2) a very large time commitment from both teachers and students. Thus, there is a need for more streamlined and scalable curricula that can promote engagement in the kind and quality of dialogic argumentation that was found in enactments of the intervention.

*Word Generation* (WordGen) is a research-based curricular program for grades 4 through 8 also designed to develop skills in argumentation and discussion. The effective argumentation curriculum used in the Crowell and Kuhn (2014) study and WordGen curricula share many similarities. Both are organized around topics on which students are asked to take and defend a position. Both
feature whole-class debates as culminating activities, and both include activities for students to prepare their arguments for the debate and anticipate the arguments of their opponents. The two curricula also have important differences. Though electronically conducted dialogues (ECDs) can be used with WordGen curricula, they do not require the use of ECDs like the Crowell and Kuhn (2014) intervention curriculum. The teacher directions in WordGen assume that student interactions will happen face to face in the classroom. Also, WordGen is designed so that teachers can spend five class sessions (one week) per topic, whereas the curriculum intervention requires thirteen class sessions per topic. Furthermore, the intervention curriculum only features topics on social issues while Word Gen is interdisciplinary. In addition to 72 units designed for middle school on social and civic issues, there are for each grade level from 6 to 8, six weeklong units on social studies topics and six weeklong units on science topics. These topics reflect many states’ social studies and science content standards, and the units need not be taught in order or consecutively. Because of these differences, WordGen is amenable to large-scale implementation. In fact, curricular units under the WordGen program have proven their scalability, as they are used in hundreds of schools across the United States and around the world. It is not clear, though, whether WordGen offers and supports opportunities for students to engage in the “sustained and dense dialogic argumentation” (p. 377) that can have an impact on their ability to generate and articulate counterarguments.

The goal of this study is to identify the affordances of the WordGen
program in promoting at scale the dialogic argumentation skills targeted in the Crowell and Kuhn (2014) study and specified by the Common Core. To do this, I will examine enactments of curricular units within WordGen, focusing on student argumentation in face-to-face dialogues and teacher actions during these dialogues.

**Background**

Goldman (1999) defined dialogic argumentation very basically as argumentation “in which two or more speakers discourse with one another” (p. 131). Erduran, Simon, and Osborne (2004) went into more detail, saying that speakers engaged in dialogical conversation “not only substantiate their claims but also refute others’ with evidence” (p. 927). Other scholars in science education have added another layer onto dialogic argumentation, asserting that it is collaborative in nature (Duschl & Osborne, 2002; Clark & Sampson, 2008). In their view, students participating in classroom debate are not necessarily engaging in dialogic argumentation because they are not working together to solve problems. Rather, they are trying to win a competition. However, though debates are not inherently collaborative, participation in them can promote students’ counterargumentation skills (Crowell & Kuhn, 2014), which can later be deployed during collaboration with others. Thus, if the development of dialogic argumentation skills is a goal, it would make little sense to exclude activities like debates from the classroom on the basis that students are being competitive rather than collaborative. For the purposes of this study, which uses classroom debate
data, I will use Nielsen’s (2013) more debate-friendly definition of dialogic argumentation – “a specialized way of arguing in which the participants not just defend their own claims, but also engage constructively with the argumentation of their peers” (p. 373).

The research on dialogic argumentation has increased in the last decade with the use of electronically conducted dialogues (ECDs), which make transcripts of student dialogues readily available. Researchers in science classrooms have developed and used frameworks to assess students’ dialogic argumentation (e.g. Erduran, et al., 2004; Clark & Sampson, 2008; Skoumios, 2009), while researchers in humanities classrooms have shown that engagement in dialogic argumentation via ECDs has positive effects on both the quality of students’ written arguments on new topics (Kuhn & Crowell, 2011; Kuhn, Hemberger, & Khait, 2016) and, as mentioned earlier, the frequency of their counterarguments during dialogues (Crowell & Kuhn, 2014).

This latter research suggests that ECDs are instrumental to reaching the argumentation goals put forward by the Common Core. Unfortunately, because of the technology required by ECDs, most teachers simply cannot take advantage of this digital medium with the yearlong biweekly frequency that is needed, according to the studies, to make a difference in students’ dialogic argumentation skills. Students in under-resourced schools may be even more unlikely to have regular access to ECDs.

Dialogues conducted face to face in the classroom rather than online may
bypass the need for technology, but they lack key supports that are found in ECDs. For example, transcripts from ECDs make it easier for students to attend to the arguments of others and respond specifically to those arguments. Their ability to respond is therefore unhindered by their ability to remember what another person said one or several turns ago. The transcripts also give students “an opportunity to review and reflect on the arguments they generate” (Crowell & Kuhn, 2014, p. 365), making it easier to add onto or revise arguments as needed.

I am interested in what teachers might do to compensate for the supports that are present in ECDs but missing in face-to-face dialogues. Specifically, I want to know how teachers who are implementing WordGen curricula might help students sustain face-to-face dialogic argumentation within one class period so that it could rival the sustained dialogic argumentation in one class session with ECDs. Though studies have investigated specific instructional practices to support classroom argumentation (e.g. McNeill, 2009; Simon, Erduran, & Osborne, 2006), to my knowledge, none have identified teacher moves that specifically sustain argumentation during dialogues.

I will attempt to fill this gap in the literature by examining transcripts of face-to-face student dialogues that took place in the context of a debate-based social studies curriculum under the WordGen program call Social Studies Generation (SoGen). The research questions guiding this study are: Do students engage in dialogic argumentation during enactments of the SoGen curriculum? If so, what is the nature of this dialogic argumentation? What are common patterns
in teacher actions during engagement in dialogic argumentation identifiable across different enactments of the curriculum? I will conclude by using the study’s findings to: 1) discuss the affordances and limitations of the larger WordGen program in promoting essential dialogic argumentation skills at scale, and 2) propose additional strategies that can be integrated into WordGen curricular units and are targeted at improving the units’ impact on these skills.

**Methods**

**Instructional Context**

The data for this study were drawn from classrooms implementing the *Social Studies Generation* (SoGen) curriculum, one of the four curricular strands of the Word Gen program. The SoGen curriculum was developed and implemented as a part of the *Catalyzing Comprehension through Discussion and Debate* (CCDD) research project, a large-scale school-level cluster randomized trial investigating the impact of classroom discussion and debate on 4th through 8th grade students’ reading comprehension.

Designed for middle school students who represent a broad range of reading levels, SoGen focuses on ancient history for grade 6, world geography for grade 7, and U.S. civics for grade 8. The 6th grade history curriculum is the focus of this study. Each of the six history units is centered on a debate question and divided into five sessions. Session 1 contains a “Reader’s Theater,” which is common to all curricular units in the larger Word Generation program. The Reader’s Theater is a short fictional skit in which students have a discussion about
a “kid-friendly” topic that is analogous to the unit’s debate topic. Session 2 is focused on building students’ background knowledge for the debate. Session 3 has students prepare for the debate in groups (Units 6.2 and 6.3 of the 6th history curriculum scaffold this activity by providing lists of facts from which students choose evidence to support their position). Session 4 includes more preparation time for the debate as well as the debate itself, while Session 5, the final session, is dedicated to individual writing time for a persuasive essay on the debate topic. For this study, I look at data from Session 4 (the debate day) of Unit 6.2, entitled “The Egyptian Pharaohs: Wise Investors or Wasteful Spenders?” (SERP, 2012). This unit was piloted during the 2012-2013 school year.

**Participants**

This study’s participants included four teachers (two of the teachers co-taught in the same classroom) and their students from three different K-8 public schools located in a large urban area in the Northeast. The team of co-teachers and one other teacher taught in mid-sized schools (400-750 students), while the last teacher taught in a large school (>750 students). One group of students was 6th graders, and the other two groups were 7th graders (though originally written for 6th grade, the curriculum was also used in 7th grade because in two of the schools, Ancient Civilizations was taught in 7th grade). The majority of students in all three schools were identified as either Black or Hispanic. Over 70% of the students in all three schools qualified for free or reduced-price lunch. In two of the schools, over 25% of the students were classified as English language learners.
Data Sources

The data for this study is comprised of audio and/or video recordings of three different classes of students in which the four teachers (Ms. Tucker, Mr. Carson, and co-teachers, Ms. Nelson and Mr. Landau) were teaching, for the first time, Session 4 of Unit 6.2 in the course of one class period. The recordings for each of the three classes were transcribed in full, and each transcription was divided into three major sections – pre-debate activities, the debate itself (starting with the first student contribution to the debate and concluding with a teacher indicating the end of the debate), and post-debate activities, if any.

Analysis

Because of my interest in dialogic argumentation and how teachers help students sustain this kind of argumentation, I examined only the debate section in each of the three transcripts. It is important to note that the three debates were conducted very differently. In Ms. Tucker’s class, the recorded debate was in a fishbowl format – only four students participated while the rest of the class observed. The debate in Mr. Carson’s class involved the whole class, but it happened to be a small class that day – only 10 students. Ms. Nelson and Mr. Landau also used a fishbowl format, but only two of the four student debaters did the majority of the talking (81.6% of debate comments were made by two students). The amount of time teachers allocated for the debates also varied (see Table 1 for summary of classroom debate information). To answer my research

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Pseudonyms have been used to protect the identities of all participants.
questions, I followed three steps of analysis for the three transcripts.

First, I identified episodes of talk in the transcripts that could potentially contain dialogic argumentation. I used topical episodes, which Boyd and Rubin (2006) define as “all turns of talk or moves lying between topic shifts” (p. 151), as the units of analysis. In this data set, topical episodes typically begin with a student using a specific piece of evidence to defend his or her position in the debate, and end with either a student or teacher changing the focus of the debate to a different topic/piece of evidence or with a teacher ending the debate altogether.

Next, a research assistant and I independently examined each topical episode for evidence of dialogic argumentation. If we saw at least one student turn within an episode showing engagement with an opponent’s argument we coded that episode as one that contains evidence of dialogic argumentation. We then shared and discussed our coding results, reaching a consensus on episodes where we disagreed. Once the topical episodes with dialogic argumentation were identified, I did a descriptive analysis of the student turns in those episodes. Lastly, I used grounded theory (Charmaz, 2006) to uncover patterns in teacher actions during topical episodes containing evidence of dialogic argumentation across the three classrooms.

Findings

I identified 16 topical episodes among the three debate transcripts – 3 in Ms. Tucker’s classroom, 10 in Mr. Carson’s classroom, and 3 in Mr. Landau and Ms. Nelson’s classroom. The topics of all episodes are listed in Table 2. All 16 topical
episodes had evidence of dialogic argumentation. In the following, I provide examples and describe common characteristics of the dialogic argumentation.

**Dialogic Argumentation found in Topical Episodes**

In all topical episodes, one or more students engaged with an opponent’s argument, as seen in the following excerpt from Episode 14:

Boy D: Egyptians were wise investors because they spent their surplus on their agriculture, infrastructure and supporting their hierarchy.

Girl P: Well, in Egypt’s hierarchy, anything that was monumental was not supporting all of its hierarchy because it just supported the pharaohs and the priests mostly.

Boy D: What about Fact #3, which surplus used for times of drought, which were canals, catch basins and dikes, which could add more farm land and more surplus in times of need, which was for everyone in the hierarchy.

Here Boy D, who is on the “Egyptians were wise investors” side of the debate, claims that the Egyptians used the surplus to support their hierarchy. Following up on his idea about supporting the hierarchy with the agricultural surplus, Girl P (who is on the “Egyptians were wasteful spenders” side of the debate) disagrees, saying that the Egyptians did not support *all* of the hierarchy. Only pharaohs and priests (not people on the lower end of the hierarchy) were supported by monumental things (i.e. pyramids and other grand monuments). Boy D then counters Girl P’s counterargument by offering Fact #3. In the curriculum text, Fact #3 states, “Egypt used its surplus to pay workers to build and maintain a large agriculture infrastructure – a complex system of canals, catch basins, dikes, and
other devices to control the waters of the Nile River and to irrigate the farmlands.”

He explains that this infrastructure benefited everyone in the hierarchy, not just those at the top, because it helped to create “more surplus in times of need.” After Boy D’s rebuttal, the teacher asks both teams to go back into their groups to generate more counterarguments. The following excerpt shows what happens after the group preparation time:

Boy D: We bring to the table Fact 3 – pay workers to build and maintain a large agricultural infrastructure, a complex system of canals, catch basins, dikes and other devices to control the waters of the Nile. Well, this is very important because water is the basis of life whether you’re a royal or whether you’re a peasant. Ya know, without water nothing can survive.

Boy M1: There wouldn’t be any crops.

Boy D: There wouldn’t be any crops.

Boy M1: There wouldn’t be any food ‘cause-

Boy D: Which would lead to no surplus whatsoever, which would lead to no food, which would lead to starvation.

Boy M1: Famine.

Boy D: And famine.

Girl P: Okay. But, um, so you’re saying that #3 is your counterargument, right?

Boy D: Yes.

Girl P: So you’re saying that you want the pharaohs to pay more workers to help maintain and build more infrastructure on Egypt, which already has enough? There is no need for it.
Boy D: So-

Girl P: But the thing is that they’re wasting their surplus money on something that they already have a surplus of.

Boy D and his teammate, Boy M1, go on to add to his argument, explaining that the agricultural infrastructure allows the Egyptians to control the water of the Nile, and water is important to everyone from pharaohs to peasants. Girl P then refers back to Fact #3, which Boy D used to support his argument, but instead of engaging his idea of the infrastructure supporting everyone in the hierarchy, she moves on to argue that there is a surplus of infrastructure, so it is wasteful to use surplus to build more infrastructure. Thus, though students from both sides engaged with the idea of supporting the hierarchy with surplus, the engagement with that one idea was short-lived. Brief engagement with single ideas was common in the dialogic argumentation across topical episodes.

Engagement with opponents’ ideas in the topical episodes was also often indirect, as illustrated by the following excerpt from Episode 4:

Boy J: Um, the Egyptians were wasteful spenders and many reasons. One of the reasons were that they used to build stuff that weren’t necessary like a bunch of monuments for the pharaohs, another city for the pharaohs, and stuff like that.

Teacher: Okay, response?

Girl U: I think that, um, ( ) build monuments ‘cause they’re wise spenders ‘cause who wants to waste their money on any other product ‘cause I think that, um, they build monuments for, um, their pharaohs and to, um, so the pharaohs can protect their city. ‘Cause if there wasn’t
any monuments, the pharaoh would be underground by now and it won’t help anybody because I think if you waste your money on anything else, um, I think it’s better to build a monument.

Boy G: ( ) build monuments for the pharaohs that already died ( ) kinda wasteful to (build something for someone that’s already dead.)

Boy L: Um, well, out of all- if they build monuments I think that’s good because that helped them- they get a stronger like architecture and that helped them build many other things that is now still used.

Here Boy J argues that the Egyptians were wasteful because they built unnecessary things like monuments. Though Girl U also uses monuments in her argument, she does not directly respond to Boy J’s idea about monuments being a waste. Rather, she uses monuments to support her position that the pharaohs were wise. Boy G, who is on Boy J’s side of the debate, then elaborates upon Boy J’s point, explaining in more detail why he thinks monuments are wasteful. Boy L, who is on Girl U’s side of the debate, also does not engage directly with his opponents’ arguments that monuments were wasteful. Like Girl U, he simply explains why monuments were good things.

Though engagement with opponents’ ideas/arguments was short and indirect in most episodes, students engaged in dialogic argumentation during classroom enactments of the Social Studies Generation curriculum nonetheless. In the next sections, I describe three patterns that emerged in topical episodes containing dialogic argumentation: extended exchange between two students, out-of-turn student talk, and a series of four teacher moves.
Extended Exchange Between Two Students

One pattern I found across topical episodes, all of which contained dialogic argumentation, is extended exchanges between two students. Both Episode 1 (which took place in Ms. Tucker’s class) and Episode 15 (in Ms. Nelson and Mr. Landau’s class) have eight consecutive turns by two students, Episode 11 (in Mr. Carson’s class) has six consecutive turns by two students. In all of these back-and-forth exchanges, students are responding to their partners’ comments directly preceding theirs, rather than responding to comments that were given two or more turns ago, as seen in the following excerpt of Episode 15:

Girl P: So you’re saying that you want the pharaohs to pay more workers to help maintain and build more infrastructure on Egypt, which already has enough? There is no need for it…But the thing is that they’re wasting their surplus money on something that they already have a surplus of.

Boy D: So basically what you’re saying is that to maintain canals is very important because without them the water wouldn’t have no transportation throughout the whole city of Egypt. So you’re saying from your point of view, if you were a farmer, growing your corn in the back yard, if your canal wasn’t maintained by the workers-

Girl P: No, what I'm saying is that they’re paying more people to maintain it.

Boy D: So, it’s kind of like building a bridge, basically. You need workers to maintain that bridge. You need the workers to build upon that bridge.

Girl P: I understand that. But they’re paying-
Boy D: You need workers to fix that bridge, just like the bridge right down the street over there.

Girl P: But they’re paying more workers. They already had some. They’re paying more. There’s no need for the surplus maintainers. That’s what I’m saying.

Boy D: No need for surplus maintainers. That’s what you’re saying?

In all three of these extended two-student exchanges, students have the opportunity to clarify and build upon their arguments as seen in the above exchange. Girl P argues that Egyptians do not need to “maintain and build more infrastructure” because she claims they have a surplus of infrastructure. Boy D does not try to argue that there is not a surplus of infrastructure. Rather he tries to explain that maintaining infrastructure is needed and therefore, not a waste. Girl goes on to claim that there are “surplus maintainers” and they are not needed.

**Out-of-Turn Student Talk**

A second pattern I found across the topical episodes in all three classrooms was students talking out of turn. Before describing one of the examples, I will offer some context. Mr. Carson took a very “hands-on” role in the debate in his class. Throughout the debate, he called on each side in turn to give their response to the opposing team. In Episode 13, however, he diverges from this pattern, as seen in the excerpt below:

Boy W: They’re wasteful spenders because they had paid thousands of architects and workers to work on (a new capital) for the pharaoh Akhenaten.

((Students try to pronounce the name correctly.))
Teacher: (Go ahead.)

Boy G: Yes.

Teacher: Okay.

Boy G: They built a whole new city, a gigantic city, just for one guy.

UNK: That’s very useful.

Boy J: But that is not needed at all.

Boy K: Just like I said before. That guy might have done some- a lot of nice things for ( )- these people.

The excerpt starts with an argument from Boy W, who is on the wasteful spender side of the debate. Rather than call on students from the wise investor side to respond, Mr. Carson allows Boy G, another member of the wasteful spender team, to give an additional supporting argument. An argumentative exchange between the two sides follows. A similar situation happens in Episode 3, as illustrated in the following excerpt:

Boy M: And so another thing that they did that was wasteful was fact 2 when pharaohs are paying thousands of workers with their surplus to make more jewels for them in the afterlife, when pharaohs already had enough amount of jewels (that’s a lot) already. And they weren’t even sure they would even come back in the afterlife and they're paying all these craft workers to make more jewels and wasting the surplus when they ( ) store more grain, get more, let’s see, clothing-

Boy I: Can I please comment?

Teacher: No.
Boy I: Please!

((Multiple kids talking))

Boy I: All right. So (I have something to say about that) is that they thought, they had their beliefs, like we have our beliefs. They had their beliefs so they thought they would go into the afterlife, they would need all this jewelry and all this stuff so that they could live in the afterlife, so it’s not wasteful because they thought this. But if we went back then and got into their shoes and thought the way that they thought back then, they would’ve thought that they would be in the afterlife and you need jewels and furniture and clothing and all that.

After Boy M presents a new piece of evidence to support the wasteful spender side, Boy I, from the wise investor side, asks Ms. Tucker if he could comment. She refuses his request, I infer because she wants his teammate to have a chance to speak first. He then beseeches her and she allows him to speak before his teammate. A heated exchange between the two sides follows Boy I’s counterargument.

A Series of Four Teacher Moves

I found a third interesting pattern in the topical episodes containing dialogic argumentation – a series of four teacher moves (Michaels & O’Connor, 2015). They are: 1) re-stating/reviewing a student’s comment, 2) prompting students to respond specifically to the comment that was just re-stated/reviewed, 3) prompting students for a counterargument, and 4) giving students time to prepare a counterargument. The following excerpt of Episode 9 illustrates the series:
Boy K: …[the pharaohs] also were wise ‘cause they would build rivers so they could get the water and stuff- to drink, to wash your clothes in. Boy G.

Boy G: They didn’t build rivers. They just built agricultural infrastructure.

Boy L: And that was wise for if there was floods they could, um, prevent the floods from happening. Boy G.

((Boy G does not respond.))

Teacher: Response?

(pause)

Teacher: So, to refer- to go back to the statement is Boy K and Boy L’s comment was that it was wise to build these agricultural canals, correct?

UNK: Yeah.

Teacher: Right. And I think Boy G, you corrected his statement, Boy K you said rivers, you told him it was, what did you say? What was your response?

Boy G: Agricultural infrastructure.

Teacher: Agricultural infrastructure, which Boy L took and supported as being the canal system, which is a wise choice. Am I following?

UNK: Yeah.

Teacher: Okay, so now it’s to your team to respond to the agricultural infrastructure. What do we call agricultural infrastructure? The canals, the waterways-do we remember what we call that?

UNK: Irrigation.
Turn 13  Teacher: Irrigation. Right. Okay, so you’re responding to the irrigation systems. Okay? Take a minute if we need to talk to each other to come up with a response.

(Long pause)

Turn 14  Teacher: We should be preparing our counterargument.

((Students consulting.))

Turn 15  Boy G: They were wise- on fact #3 of the infrastructure but they were wasteful on fact #2 when they built- they paid thousands of crafts workers to make items like jewelry and furniture for pharaohs, (which they didn’t need at all.) Boy K?

We see by Turn 4 that Boy G is struggling to respond to Boy L’s last point. In Turns 5 through 9, the teacher intervenes. He reviews the first three comments by Boy K, Boy G, and Boy L, and confirms with the boys that his re-statements of their comments are correct. In Turns 11 and 13, the teacher then directs Boy G’s team to respond to one of the comments he just reviewed, specifically the one about the irrigation systems. Also, in Turn 13 the teacher gives Boy G’s team time to generate a response. Finally, in Turn 14, the teacher reminds the students on Boy G’s team that they need to be preparing a counterargument. After these four teacher moves were made and the students took the time to consult with one another, we see in Turn 15 that Boy G (who was called upon at the beginning of Episode 9 but did not respond) articulates both a concession that the pharaohs were wise to build infrastructure, and a counterargument that the pharaohs were still wasteful because they paid crafts workers to make items that were unnecessary.
Discussion

In this study, I found that students do engage in dialogic argumentation during classroom enactments of the SoGen curriculum. However, like the dialogic argumentation found in an end of year 1 assessment given as an example in the Crowell and Kuhn (2014) study, students in these SoGen enactments often engaged with their opponent’s idea “only briefly and obliquely” (p. 375). This finding gives rise to the question – what if anything can teachers do to help students address their opponents’ ideas/arguments more directly, and help students lengthen their engagement with their opponents’ arguments? The three patterns that emerged from topical episodes containing students’ dialogic argumentation may have implications for this problem of practice.

Extended exchanges between two students took place in topical episodes with dialogic argumentation across the three classroom enactments. The fact that teachers allowed such exchanges to take place is notable given the widespread use of the initiation, response, evaluation (IRE) pattern (Mehan, 1979), in which teachers ask a question requiring only a short answer, students give the short answer, and teachers give a short, non-substantive evaluation of that answer (e.g. “Very good!”). Nystrand and Graff (2001) argue that the IRE method limits opportunities for argumentation. The example they give is from a case study of a teacher teaching argumentative writing. They found that although the teacher asked students to justify their claims during a class discussion, she did not give them any substantive feedback on their justifications. Instead, she called on the
next student to make a claim and justification. The authors assert that this kind of IRE interaction goes against “the epistemology of argument as an extended, in-depth reasoned exchange” (p. 489). I argue that extended exchanges between two students during classroom debates have greater potential for this “extended, in-depth reasoned exchange” than IRE exchanges because in two-student exchanges students have the opportunity give counterarguments to their opponents and give rebuttals to counterarguments without being side-tracked by the teacher or other students. Additionally, compared to whole-class discussions or debates, two-student exchanges have the advantage of reducing the amount of information students have to process and respond to since each student is only dealing with the comments of one other student, as opposed to the comments of many students. A study by Berland and McNeill (2010) suggests that limiting the amount of data a student has to work with in argumentation “may facilitate students in engaging in aspects of argumentation in more complex ways” (p. 765). In summary, allowing students to have extended, face-to-face, two-student exchanges may make it easier for students to engage directly with their opponent’s ideas and to sustain that engagement.

In other topical episodes with dialogic argumentation, I found teachers allowing students to talk out-of-turn. Though I cannot draw a causal relationship between the teachers’ flexibility and the ensuing argumentative exchange, this finding brings into question the practice of making sure that each side gives a response right after the opposing side gives their argument, and making sure that
every student gets to have a turn before one student gets a second turn. Being flexible with regard to turn taking may help students sustain dialogic argumentation by: 1) giving students on one side more time to generate a counterargument, and 2) giving students more content (from their opponents’ additional argument) from which to generate a counterargument.

Finally, I was surprised to find not several independent teacher moves, but a series of four connected teacher moves in topical episodes with dialogic argumentation. The first two moves (re-stating/reviewing a student’s comment and prompting students to respond specifically to the comment that was just re-stated/reviewed) essentially provide students with the support that is provided through text in electronically conducted dialogues (i.e. in ECDs students can re-read another student’s previous comment and respond with the text of the previous comment in front of them). The third move (prompting students for a counterargument) is a re-emphasis of the move that encourages students to respond specifically to another student’s comment, while the last move (giving students time to prepare a counterargument) is invaluable to any task that requires critical thinking.

My findings suggest that the WordGen curricular program has some affordances for promoting dialogic argumentation skills at scale. First, as seen in the debate transcripts of the SoGen curriculum, WordGen curricular units offer students the opportunity to engage in face-to-face dialogic argumentation. Teachers implementing WordGen may help sustain this dialogic argumentation
during a class session, and make it more like the ECD-supported argumentation found in implementations of the Crowell and Kuhn (2014) intervention curriculum, by: 1) allowing pairs of students to have extended exchanges, 2) using flexible turn-taking as a strategy when students struggle to argue back, and 3) compensating for the lack of ECD supports by using a series of four teacher moves. Secondly, not only might dialogic argumentation be sustained during a class session within a WordGen unit, engagement in dialogic argumentation can be sustained across all three years of middle school because there are over 100 weeklong WordGen units available for grades 6, 7, and 8.

There are also some limitations of WordGen that I should recognize. Though dialogic argumentation takes place in implementations of WordGen units, small numbers of students are participating in it. As seen in two of the debates I examined, only two to four students were engaged in argumentation. The rest of the class was observing. The teacher directions in the WordGen curricular materials recommend switching the students so that everyone gets to participate in the debate, but in the debates in this study, teachers either chose not to do the switching or ran out of time. But even if the teachers were able to give all students a chance to participate in the debate, the number of students and amount of time in a typical middle school class period would most likely result in each student having a very limited timeframe to engage in dialogic argumentation. This is very different from what happens in the argumentation curriculum used by Crowell and Kuhn (2014). In this curriculum, all students in the class are able to participate in
dialogic argumentation concurrently with ECDs for an extended period during a class session.

A second limitation of WordGen is that students only really participate in dialogic argumentation on the debate day. Students in the argumentation curriculum, on the other hand, engage in dialogic argumentation not only on the whole-class debate day, but also during debate-prep days. Specifically, out of the 9 class sessions that are devoted to debate prep, 6 class sessions involve 25-minute electronically conducted dialogues between pairs of students who are on the same side and pairs who are on the opposite side. This significant amount of time in dialogic argumentation dwarfs the time given to students in WordGen to do the same thing.

To enhance WordGen’s potential impact on dialogic argumentation skills, teachers (who cannot afford to extend units beyond a week) might consider using the last two sessions of the unit (Sessions 4 and 5) for the whole-class debate, rather than limit the debate to Session 4, so that more students can engage in dialogic argumentation for a longer amount of time. The essay, which is supposed to be written during Session 5, can then be assigned for homework. These teachers might also consider having students engage in dialogic argumentation during Session 3, the class devoted to debate preparation. One strategy to maximize student participation in this prep session is to place all students in opposing pairs and have the pairs do dialogues in writing. (Crowell and Kuhn, 2014, actually used written dialogues, not ECDs, for the final assessments for their experiment.)
these written dialogues, all students need to generate arguments and counter-arguments, so they may be even more prepared for the whole-class debate than if they worked in groups to do the same thing. Furthermore, these written dialogues make it easier for teachers to hold students accountable for unsupervised work, and these documents can serve as formative assessments for teachers to understand if and where students are struggling.

I want to emphasize that I do not know if WordGen curricula can improve students’ dialogic argumentation skills, but I think it has the potential to, based on what is known about argumentation curriculum that has been shown to have an impact on these skills. The Crowell and Kuhn (2014) study suggests that students do not even need instruction. They just need a lot of practice doing dialogic argumentation to get better at it. This practice can happen during a class period, over a school year, and throughout the middle school years. WordGen has curricular units that offer students the opportunity to have this duration of practice without making teachers feel that too much of their time is being drained by argumentation. In fact, WordGen’s social studies and science units can help teachers meet other discipline and content-related goals.

## Conclusion

Every student should be given the opportunity to develop intellectual skills that will give them greater access to well-paying and meaningful work in the future. Dialogic argumentation skills are an important subset of these intellectual skills. Though an intense 3-year intervention curriculum was shown to have a
positive impact on disadvantaged students’ dialogic argumentation skills (Crowell & Kuhn, 2014), this curriculum is not scalable because of the time and technology it requires. This study identifies affordances of the WordGen curricular program to promote dialogic argumentation skills at scale. Like the intervention curriculum, WordGen units provide rich topics that motivate middle school students to argue, but unlike the intervention, WorGen does not require students to meet for 52 class sessions per year for three years, nor does it require the use of electronically conducted dialogues. This study suggests that teachers can support dialogic argumentation (i.e. help students engage with their classmates’ arguments directly and for longer periods of time) without the use of ECDs. More research is needed to reveal and create other curricular programs that can be implemented in almost any school and can help almost any student, regardless of life circumstances, improve his/her argumentation skills and set them on a path to reach her/his intellectual potential.
Table 1

*Classroom Debate Information*

<table>
<thead>
<tr>
<th>Date of Debate</th>
<th><em>Teacher</em></th>
<th>Grade Level</th>
<th>Debate Format</th>
<th>Number of Debaters</th>
<th>Length of Debate (does not include prep time between rounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/4/2012</td>
<td>Ms. Tucker</td>
<td>6</td>
<td>Fishbowl</td>
<td>4</td>
<td>9 minutes 56 seconds</td>
</tr>
<tr>
<td>3/6/2013</td>
<td>Mr. Landau and Ms. Nelson</td>
<td>7</td>
<td>Fishbowl</td>
<td>4</td>
<td>9 minutes 9 seconds</td>
</tr>
<tr>
<td>4/11/2013</td>
<td>Mr. Carson</td>
<td>7</td>
<td>Whole-class</td>
<td>10</td>
<td>24 minutes 33 seconds</td>
</tr>
</tbody>
</table>

*Pseudonyms have been used to protect the identities of all participants.*
### Table 2

**Topical Episodes**

<table>
<thead>
<tr>
<th>Episode number</th>
<th>Teacher</th>
<th>Topic of Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ms. Tucker</td>
<td>saving food for emergencies</td>
</tr>
<tr>
<td>2</td>
<td>Ms. Tucker</td>
<td>building pyramids</td>
</tr>
<tr>
<td>3</td>
<td>Ms. Tucker</td>
<td>making jewelry for afterlife</td>
</tr>
<tr>
<td>4</td>
<td>Mr. Carson</td>
<td>making monuments</td>
</tr>
<tr>
<td>5</td>
<td>Mr. Carson</td>
<td>building military</td>
</tr>
<tr>
<td>6</td>
<td>Mr. Carson</td>
<td>building cities</td>
</tr>
<tr>
<td>7</td>
<td>Mr. Carson</td>
<td>saving food for emergencies</td>
</tr>
<tr>
<td>8</td>
<td>Mr. Carson</td>
<td>paying overseers</td>
</tr>
<tr>
<td>9</td>
<td>Mr. Carson</td>
<td>building agricultural infrastructure</td>
</tr>
<tr>
<td>10</td>
<td>Mr. Carson</td>
<td>making jewelry/furniture</td>
</tr>
<tr>
<td>11</td>
<td>Mr. Carson</td>
<td>paying priests and scribes</td>
</tr>
<tr>
<td>12</td>
<td>Mr. Carson</td>
<td>building monuments</td>
</tr>
<tr>
<td>13</td>
<td>Mr. Carson</td>
<td>building a city for a pharaoh</td>
</tr>
<tr>
<td>14</td>
<td>Ms. Nelson &amp; Mr. Landau</td>
<td>supporting hierarchy</td>
</tr>
<tr>
<td>15</td>
<td>Ms. Nelson &amp; Mr. Landau</td>
<td>wasting surplus</td>
</tr>
<tr>
<td>16</td>
<td>Ms. Nelson &amp; Mr. Landau</td>
<td>how surplus should be spent</td>
</tr>
</tbody>
</table>
Chapter 4.

Taking a Stand in Social Studies: Middle School Students’ Argumentation in Classroom Debate

Classroom debate is an activity that is informed by cultural notions of debate. It can be found in classrooms across the disciplines and across grade levels, from elementary up through graduate school. Formats for classroom debates range from formal situations, in which opposing sides present their arguments and have the opportunity to rebut in turn, to more informal situations, in which class discussion is based on the arguments of opposing sides (Bonwell & Eison, 1991). Despite the more widely held belief that classroom debate can promote both student engagement and critical thinking, this instructional activity has its share of critics. Kohn (1986) and Tannen (1998) both suggest that learning goals are lost in debate because students focus too much on winning. Tumposky (2004) goes further, arguing that debate fosters a classroom environment that is confrontational, which puts students who are not comfortable with oppositional interactions at a disadvantage. She also argues that classroom debate “reinforces a Western bias toward dualism and ignores the multiplicity of perspectives inherent in many issues” (pp. 53-54). Yet, even with such critiques and teachers’ own anecdotal evidence of undeniably unsuccessful classroom debates with K-12 students, debate persists in the classroom, and it may now be used even more frequently in light of the recent adoption of the Common Core State Standards by most states. According to these standards, students should be learning how to generate and
assess not only written, but also oral arguments by the middle school years (Common Core State Standards Initiative, 2010).

Whether classroom debate leads to improved performance in argumentation is unknown, but we do know that classroom debate has the potential to offer students opportunities to practice argumentation skills in a more meaningful context – one in which there can be “actual uptake in changing an audience’s beliefs” (Newell, Beach, Smith, VanDerHeide, Kuhn, & Andriessen, 2011, p. 297). When students know that their arguments may actually influence the actions of an audience, they are more likely to be engaged in argumentation (Beach & Doerr-Stevens, 2009). Thus, classroom debate, which almost always has an immediately available audience, may have advantages where other pedagogical approaches to argumentation fall short.

In addition to classroom debates being potentially valuable opportunities for the development of general argumentation skills, participating in such debates is of particular importance to the content area of social studies. According to a revised position statement approved by the National Council for the Social Studies (NCSS) in 2008, debates are part of powerful teaching and learning. They state, “Through discussions, debates, the use of authentic documents, simulations, research, and other occasions for critical thinking and decision making, students learn to apply value-based reasoning when addressing problems and issues” (NCSS, 2008, para.11). Debates are also a powerful form of assessment in social studies. In the College, Career, and Civic Life (C3) Framework for Social Studies
State Standards, debates are one of the recommended collaborative formats through which students can communicate their explanations and arguments, and thus demonstrate to teachers their social studies understandings (NCSS, 2013).

Despite the potential of and the support for classroom debate in social studies, the research on the nature of classroom debate at the K-12 level and how to support students in this activity is very limited. The small number of studies that do exist highlight middle and high school students’ weaknesses in classroom debate. In this study, I explore what students do during classroom debates in the context of a social studies curriculum designed to support their participation in debates. My findings have implications for practice.

**Background**

Research suggests that classroom debate helps improve valuable skills and learning for undergraduate and graduate students (Alibert, 1998; Combs & Bourne, 1989; Jagger, 2013; Moeller, 1985; Tessier, 2009). However, an extensive search of the literature yielded no research studies that have revealed similar benefits for younger students. Additionally, this same search uncovered very few studies that have examined what happens during classroom debate with middle and high school students – I located only two, and both assess the quality of argumentation within the debates. In the first, Walker and Zeidler (2007) found that in debates about socio-scientific issues, high school students often used personal attacks and fallacious argumentation, which they described as “reasoning… based on extreme examples, erroneous grounds, and hasty generalizations to personalize the
dilemma and evoke an affective response” (p. 1401). The authors attributed this poor debate performance to students’ lack of background knowledge, which several studies have suggested is a problem when students engage in argumentation (De La Paz, 2005; Felton & Herko, 2004; Ferretti, Lewis, & Andrews-Weckerly, 2009; Gleason, 1999). In the second study, which analyzed sixth graders’ debates about American immigration in the early 20th-century, MacArthur, Ferretti, and Okolo (2002) found that participation was widespread among students and that boys, girls, and students with and without disabilities participated equally. However, the students struggled to produce “academic arguments,” in which participants “provide evidence to support the claims they make and offer explanations about the warrants that underlie their inferences” (p. 171). The authors traced students’ lack of specific evidence and explanations to the fact that the students were never specifically instructed on argumentation.

Other research suggests, however, that direct instruction on argumentation is not necessary for students’ argumentative discourse skills (i.e. debate skills) to improve. Rather, dense and sustained engagement in dialogic argumentation alone is enough to enhance these skills (Crowell & Kuhn, 2014; Kuhn & Crowell, 2011; Kuhn, Goh, Iordanou, & Shaenfield, 2008). Parker, McDaniel, and Valencia (1991) add support for the claim that argumentation instruction is not needed. They compared the dialogical reasoning of two groups of 6th grade students – one group was given high-quality instruction on reasoning on public issues while the other group received no instruction. The two groups’ reasoning was found to be
comparable in argumentative essays. The authors claim that simply prompting the students was enough for them to produce reasoning for argumentation.

Though instruction may not be necessary for students' dialogical argumentation/debate skills to improve, studies on activities that are similar to classroom debate suggest there are things that can be done to improve the quality of classroom debates. Discussions of controversial public issues (CPI), defined as “unresolved questions of public policy that spark significant disagreement” (Hess, 2002, p. 11), are one example of such debate-like activities that take place in social studies classrooms. One study indicates that CPI discussions are more successful when both teachers and students prepare for these discussions in advance (Hess, 2002), while another suggests that students’ effective participation in CPI discussions improves when their social studies teachers prioritize these discussions (Hess & Posselt, 2002). A more recent study found differences among classrooms that prioritize (or at least include a focus on) CPI discussions. Hess and McAvoy (2015) assigned three categories to these classrooms: Best Practice Discussion, Discussion, and Lecture. In Lecture classrooms, discussion took place less than 20% of the time, while in Discussion classrooms, discussion took place 20% or more of the time, but most of the classroom talk was student-to-teacher. Best Practice Discussion classrooms, on the other hand, featured discussion more than 20% of the time and a large amount of the classroom talk was student-to-student. These higher levels of student-to-student talk are congruent with teacher actions the authors observed in Best Practice Discussion classrooms. In one such
classroom, “the teacher structured activities so that students learned how to talk to each other, and the teacher was willing to cede center stage” (p. 68). In this study, the authors found that the quality of CPI discussions was higher in Best Practice Discussion classrooms than in the other two types of classrooms.

However, even if social studies teachers are comfortable enough to cede center stage to their students during CPI discussions and classroom debates, they may not be comfortable with the content commonly used in these activities. A study by Journell (2013) shows that many pre-service social studies teachers (particularly those teaching middle school) have inadequate knowledge of politics and current events, which suggests that many early-career and veteran teachers face the same challenge. Given this knowledge deficit in content typically used in debates, and the pressure from high-stakes tests, teachers may choose to avoid CPI discussions and classroom debates all together.

**A Social Studies Curriculum Designed to Support Classroom Debate**

The *Social Studies Generation* (SoGen) curriculum for grade 6 acknowledges the challenges social studies teachers face in conducting classroom debates and correspondingly offers a variety of supports. First, instead of having students debate controversial topics in current events and politics, they debate controversial topics involving high-interest historical figures and events that middle school social studies teachers are likely to teach already. For example, in one of the 6th grade SoGen units, students debate whether the pharaohs of ancient Egypt were wise investors or wasteful spenders. A similar debate could be had
over the U.S. Congress. In another unit, students role-play different historical groups in ancient Rome and debate whether gladiator games should be banned. Students might use analogous arguments when debating whether tackle football should be banned in high schools. Thus, students can apply the same value-based reasoning (i.e. reasoning based on personal values) that they would use to debate politics and current events, to debate topics that are within the comfort zones of middle school teachers who are teaching ancient civilizations. Of course, 6th-grade SoGen debates are not meant to completely replace debates on politics and current events, but rather they give teachers and students a “soft entry” into classroom debate with the hope that both groups will become more comfortable with this activity and will venture into more current topics.

In addition to providing teacher-friendly and, in many cases, content standards-friendly debate topics, the SoGen curriculum supports successful classroom debates by doing what aforementioned studies have suggested: 1) giving students and teachers time to prepare for the debates before they happen, as well as daily classroom-ready materials to use during that preparation time, and 2) giving teachers clear directions to conduct debate formats that maximize student-to-student talk. These preparation materials and debate formats will be described in more detail in the next section.

It is important to emphasize that although historical content is used for the debates in the SoGen curriculum for grade 6, students are, for the most part, not doing historical reasoning and argumentation. It has been argued that SoGen helps
move middle school students toward disciplinary literacies in history and social studies (Duhaylongsod, Snow, Selman, & Donovan, 2015), but given that students are not analyzing authentic historical documents in this curriculum, I cannot put forward historical thinking as SoGen’s primary aim. Yet, according to Wineburg and Reisman (2015), thinking like a historian is not even the primary aim of the Reading Like a Historian (RLH) curriculum (see Reisman, 2012), which consists of historical document-based lessons. Rather, RLH prepares students for the “vocation of the citizen” (Wineburg & Reisman, 2015, p. 635) by enhancing their ability to evaluate the accuracy of the information they encounter. I would assert that SoGen also helps prepare students for citizenship by giving them opportunities to use information they encounter in civil discourse on topics that invite disagreement. Also, using information in the context of debates may help students better understand the need to evaluate that information.

The present study explores what middle school students do in classroom debates that take place during enactments of the 6th-grade SoGen curriculum. Extant research highlights deficiencies in students’ argumentation in classroom debates on social studies-related topics (MacArthur, et al., 2002; Walker & Zeidler, 2007). I argue that these studies present a one-sided view of what is possible in classroom debates in this content area. The research questions guiding this study are:
1. What are the argumentative moves urban middle school students make in classroom debates in the context of a debate-supporting social studies curriculum?

2. How do these students support their argumentative moves in these debates?

3. How do students connect their argumentative moves and evidence, if at all?

4. Are specific argumentative moves related to the kinds of support they offer for their argumentative moves?

**Method**

**Context and Data**

In this study I analyzed six classroom debates transcribed from audio recordings of six different class sessions. The recordings came from two classes of 7th grade students and four classes of 6th grade students. The classes, involving five teachers – four veterans and one early-career teacher (three of the six class sessions were taught by the same teacher, one of the class sessions was co-taught by two teachers), were from four racially and ethnically diverse K-8 public schools located in the Northeast. These four schools are part of what Milner, Murray, Farinde, & Delale-O’Connor (2015) categorize as urban emergent school districts, which are “located in large cities, but not as large as the major cities” (p. 531) and have “some of the same characteristics as [schools and districts in the major cities] in terms of resources, qualification of teachers, and academic development of students” (p. 531). The schools also vary in size - one small school (<400 students), two mid-sized schools (400-750 students), and one large school
among the four schools, the average percentage of students participating in the free or reduced-price lunch program was 80, the average percentage of students who are Black or Hispanic was 76.7, and the average percentage of English language learners was 21.5. Table 1 summarizes information on the six debates and the schools where they took place.

The recordings were drawn from the Catalyzing Comprehension through Discussion and Debate (CCDD) research project (ccdd.serpmedia.org), a large-scale school-level cluster randomized trial investigating the impact of classroom discussion and debate on middle school students’ reading comprehension. Funded by the Institute of Education Sciences under their Reading for Understanding Initiative, the CCDD project evaluated the Word Generation (WordGen) curricular program (wordgen.serpmedia.org). WordGen was designed to promote 4th through 8th-grade students’ discussion and argumentation skills, as well as their learning of academic vocabulary – “words that students are likely to encounter in textbooks and on tests, but not in spoken language” (Strategic Education Research Partnership, 2011). The program consists of four curricula: WordGen Weekly, an interdisciplinary curriculum for grades 6-8 offering units based on discussable dilemmas (e.g. Does rap music have a negative impact on youth? Should secret wiretapping be legal?); WordGen Elementary, the 4th and 5th-grade version of WordGen Weekly, which also provides multiple topics for discussion and debate (e.g. Should wild animals be adopted as pets? Should students be required to wear uniforms?); Science Generation (SciGen), a science curriculum for grades 6-8.
based on the same principles as WordGen Weekly; and Social Studies Generation (SoGen), which is the social studies counterpart to SciGen.

The recorded debates analyzed in this study came from classrooms where the SoGen curriculum for grade 6 was enacted. The 6th-grade SoGen curriculum is themed around ancient civilizations and contains a total of six weeklong units – two on ancient Egypt, two on ancient Greece, and two on ancient Rome. Each unit consists of five sessions. In the first session, students engage in a Reader’s Theater, a fictional skit featuring middle school students who are debating a modern-day topic that is analogous to the unit’s history-based debate topic. For example, in Unit 6.2’s Reader’s Theater, the fictional characters are arguing about whether their school’s decision to build a new swimming pool is wise or wasteful. The debate question for Unit 6.2 is: Were the pharaohs of ancient Egypt wise investors or wasteful spenders? One of the goals of the Reader’s Theater is to galvanize students’ interest in the historical topic. Another goal is to help prepare students for the debate. The Reader’s Theater is followed by activities that encourage students to identify the different perspectives in the skit, and to use the content of the skit to practice generating elements of argumentation (i.e. claims, evidence, warrants, counterarguments, etc.). In the second session of the units, students build background knowledge for the debates by reading and discussing with partners short texts. For example, Unit 6.2 features short texts on the pyramids, Egypt’s surplus, and the historical strike at Deir el-Medina. For the third session, students review texts that can be used as evidence in the debates. In Units 6.2 and 6.3,
students are given a list of facts from which they can choose to support their side of the debate (see Figure 1). Though ideally students would critically read through many pages of text and extract pieces of evidence to analyze and use in debate, research on scientific argumentation suggests that when students are first learning to do argumentation, making the data set from which they can draw evidence small may help “facilitate students in engaging in other aspects of argumentation in more complex ways” (Berland & McNeill, 2010, p. 765). This hypothesis is supported by a study showing more sophisticated historical reasoning among middle school students who were given simplified materials, one of which was a list of facts about the Roman Empire (Wolfe & Goldman, 2005). Session 4 of the units is the debate day. Before starting the debate, students continue their debate preparation from the previous session. Units 6.2 and 6.3 have detailed scaffolds for this preparation. As seen in Figure 2, students are asked to provide the numbers of the facts they chose from the fact list, and explain how each specific fact supports their debate position. Students are also asked to anticipate facts their opponents will use, and generate counterarguments based on these anticipated facts. In Session 5, the final session, students are asked to write an argumentative essay on the debate topic of the unit.

Each of the six debates I analyzed took place during session 4, the debate day, and each debate focused on one of three unit topics/debate questions: 1) “The Pharaohs of Ancient Egypt: Oppressors or Great Leaders/Protectors of Order?” 2) “The Egyptian Pharaohs: Wise Investors or Wasteful Spenders?” and 3) “Which
city-state was better overall: Athens or Sparta?” (Strategic Education Research Partnership, 2012). The format of the six debates varied. Three of the debates had a “fishbowl” format, in which two teams of two students debated the topic while the rest of the class observed them and gave feedback when the debate was over. One of the three fishbowls was unusual in that only two of the four students participated. The three remaining debates were whole-class debates in which the entire class was split into two teams or more. Team members took turns participating in the debate. One of the three whole-class debates was different from the other two in that the teams were not assigned sides in the debate, but rather each team role-played one of three historical groups – Egyptian peasants, Egyptian scribes, and Egyptian viziers to the pharaoh. The amount of background knowledge students brought to the debate also varied, as some classes had more instructional time on ancient civilizations than others prior to the teaching of the units. The length of the debates and the extent of teacher intervention during each of the debates varied as well.

**Coding**

Each of the six classroom recordings was transcribed in full. I divided each transcription into three sections: pre-debate activities, the debate itself, and post-debate activities. I only coded the debate section of each transcript. For three of the debates, I coded from the first student contribution to the debate to the last student contribution. In two of the debates there were major teacher interventions. In these cases, I stopped coding before the teacher intervention because I wanted
to focus the analysis on argumentation generated by students, not by teachers. One debate was conducted in three rounds, and in between rounds students worked in teams to prepare for the next round. For this debate I only coded the rounds, not the preparation sessions between rounds.

The unit of analysis for this study is a student “turn of talk” or “TOT” (Boyd & Rubin, 2006). To develop the two coding schemes (see below), I selected student turns of talk from the six transcripts to be coded. For a TOT to be selected, it needed to contain an argument (e.g. “Egyptians were wise investors because they spent their surplus on their agriculture, infrastructure and supporting their hierarchy”), or a specific response to an argument (e.g. “Well, in Egypt’s hierarchy, anything that was monumental was not supporting all of its hierarchy because it just supported the pharaohs and the priests mostly”). I did not select TOTs containing clarification questions or off-task comments. After I developed a preliminary codebook from the selected TOTs, a research assistant independently coded the pre-identified TOTs from one-third of the transcripts using this first codebook. The research assistant and I then vetted and refined the coding scheme by discussing and clarifying divergences. This resulted in a revised coding scheme, which I used to recode the full set of TOTs.

**Coding Scheme 1: Argumentative moves.** I adapted Clark and Sampson’s (2008) coding framework for discourse moves to include only student comments that establish, oppose or support an argument – comments I call “argumentative moves.” I replaced the authors’ three claim codes with the
following two codes: 1) “position,” which emerged from the data, as the claims students offered were often one position in the debate or the other, and 2) “non-position claim,” which also emerged from the data because students misinterpreted the debate question and, as a result, made a claim that did not fall on either side of the debate. I also consolidated the authors’ three rebuttal codes into one code I call “opposition” for simplification. My full coding scheme for argumentative moves is outlined in Table 2.

**Coding Scheme 2: Grounds quality.** Using as a model Clark and Sampson’s (2008) coding scheme for the quality of grounds, which these authors define as “evidence, explanations, qualifiers, or backing” (p. 299), I developed a new coding scheme for the quality of grounds offered by students in standard classroom debates where textual evidence is ideally used. Table 3 outlines the coding scheme. The levels reveal whether and how a student used text from the curriculum materials to support an argumentative move. At the lowest levels (0 and 1), students did not use text at all to support their moves. At the middle levels (2 and 3), students used general references to the text itself (i.e. “It [the text] didn’t say that!”), general references to concepts in the text (i.e. the concept of revolution appears in the text and a student uses “revolution” in a comment without repeating verbatim, paraphrasing, or inferring from text), or text-based inferences as grounds. To qualify as a text-based inference, a statement must be a logical conclusion from identifiable information in the text. The inference does not have to be accurate to be coded as a text-based inference. At the highest levels (4 and 5), students used
textual evidence or textual evidence plus text-based reasoning to back their arguments. To qualify as textual evidence, the information has to be either repeated verbatim or paraphrased from the curriculum packet. To determine if students had paraphrased text from the packet, I compared the original text in the packet to the comment, and if the overall meaning of the two were comparable, I considered the text paraphrased. Three different types of comments qualified as text-based reasoning. Explaining how one’s position/claim is connected to the textual evidence is the first (e.g. “They had their beliefs so they thought they would go into the afterlife, they would need all this jewelry and all this stuff so that they could live in the afterlife. So it’s not wasteful because they thought this.”). Using a text-based inference to bolster one’s textual evidence is another (e.g. “Um, and, in Fact #3 Sparta has had two kings in a group of elders [ ] so if they had two kings, that would make them like more- like responsible for more stuff?”), and posing a text-related question to challenge the opposition is the third (e.g. “…it would be a waste of money to…build another pyramid for the pharaoh [if] he already has one. It’s like, he already has a pyramid so why must he have another pyramid for more people to remember him?”).

Analysis

After the coding was complete, I answered the first two research questions (What are the argumentative moves urban middle school students make in classroom debates in the context of a debate-based social studies curriculum? How do these students support their argumentative moves in these debates?) by
providing frequencies. To answer the third research question (How do students connect their argumentative moves and evidence, if at all?), I examined the comments that were assigned the highest level of grounds, identifying those in which students explained how their claim and evidence were connected. I then determined whether logic or background knowledge was used to explain the connection and provided those frequencies as well as qualitative descriptions. For the fourth and final research question (Are specific argumentative moves related to the kinds of support they offer for their argumentative moves?), I first collapsed the six grounds quality levels into three levels: low (levels 0 and 1), medium (levels 2 and 3), and high (levels 4 and 5). I made the decision to combine the levels because there are very few student comments at Level 0 and Level 2. I then created a contingency table showing the argumentative move and grounds quality level for each student comment analyzed (non-position claims were excluded from analysis because there were only four). To see if there is a relationship between argumentative move and grounds quality level, I conducted a Fisher’s Exact Test for the contingency table. I used a Fisher’s test rather than a chi-square test because two cells had a frequency of less than five (only two positions at low level grounds and four positions at medium level grounds).

**Results and Discussion**

There were 128 student turns of talk in the six transcripts that were eligible to receive a grounds quality code. Five of those turns received more than one code for argumentative move, and thus those turns were also assigned more than one
code for grounds quality. Therefore, there was a total of 133 argumentative moves and a total of 133 ratings for grounds quality.

**Frequency and Type of Argumentative Moves and Ground Quality**

Over half (56.4%) of the argumentative moves in the debates were oppositions while just under a quarter (24.1%) were supporting comments. The remaining moves were mostly positions (16.5%). Non-position claims made up only 3% of the turns of talk (Figure 3). To support their argumentative moves, students used textual evidence almost 40% of the time (with and without text-based reasoning, 21.1% and 16.5%, respectively). Nearly matching that was students’ use of text-based inferences and general references to concepts in text as support (36.8%). General references to text as grounds appeared in only 2.3% of comments. Students also justified their argumentative moves with grounds not derived from texts 18.8% of the time, while 4.5% of argumentative moves had no grounds at all (Figure 4).

Clark and Sampson’s (2008) study of 8th graders’ online discussions of science topics may shed some light on the present study’s results on grounds quality. They found that over half (50.4%) of the student comments that were eligible for a grounds quality code contained no grounds (i.e. students made a claim without providing any kind of support for it). This percentage is much higher than the present study’s result for no grounds (4.5%). In the Clark and Sampson study, students used grounds explanations without evidence 23.1% of the time. The present study was closer to these results (18.8%). Finally, Clark and
Sampson found that students used evidence (including evidence plus explanation or the coordination of multiple pieces of evidence) as grounds 26.5% of the time. The result was 37.6% for the present study and this does not include close inferences from text as grounds. This comparison, with its many limitations, suggests that the urban middle school students in the present study used evidence to support their arguments in classroom debate much more than might be expected given the findings of a previous study on older students.

One possible explanation why students in this study used evidence as much as or more than older students from a previous study is the way evidence was scaffolded in the curriculum. In four of the six debates students were given a list of facts, as mentioned earlier, which could be used as evidence to support their chosen/assigned positions in the debates or to attack the positions of their opponents. Thus, students did not have the more difficult task of deciding what was relevant from dense paragraphs across several pages of text. Rather, relevant evidence was laid out before them on one or two pages. Students’ main challenge was to choose, among a random mix of pro- and con- facts, a select number that best supported their side of the debate. This simplification of text serves as scaffolding for the very cognitively demanding task of academic argumentation in the context of oral classroom debate.

**Connections between Claims and Evidence**

Because students connect positions, oppositions, and supporting comments to evidence in these debates, I use the term “claim” here to summarize these three
argumentative moves and connect to previous research. Students connected their claims and evidence in 20.3\% of argumentative moves. This finding comes in stark contrast to a finding in Clark and Sampson’s (2008) study of 8\textsuperscript{th} graders’ online discussions of science topics. They found that students coordinate claims with evidence less than 4\% of the time. One possible explanation for the difference between these two findings is the very explicit support for connecting positions and evidence in the social studies curriculum packets used by the students in the current study. Specifically, students are given sentence starters to help them make the connection, as previously stated.

A closer look at students’ claim/evidence connections in the debates revealed that Berland and Reiser’s (2009) descriptions for how students explain the connection between claims and evidence in science applies to social studies as well. These authors list two ways students can explain how evidence supports a claim in science argumentation: “(1) include relevant background knowledge…and (2) describe the logical connections between the evidence and their claim” (p. 34). Among the student comments in the debates that contained claim/evidence connections, I found that 70.4\% of the time students used logic to connect the two, while students used relevant background knowledge to make the connection only 29.6\% of the time.

The logic students used to explain how evidence supports a claim was sometimes very simple. For example, one student stated:
At first [Athens] money was kept on the island of Delos, but in 454 BC, the money was moved to Athens where the Athenians could control it. And...the reason that [Athens] would be a better place to live is ‘cause they have money.

In this example, the student’s position is that Athens is better than Sparta. She uses as evidence the fact that Athens moved its money from Delos to Athens. To connect her position and evidence, she argues that the having of this money makes Athens better. At other times, students’ logic was more sophisticated:

...Sparta has had two kings in a group of elders...so if they had two kings, that would make them like more- like responsible for more stuff?

Here the student’s position is that Sparta is superior to Athens. To support her position, she offers as evidence that Sparta had two kings. To make the claim-evidence connection, the student infers that two kings can take on more responsibilities than one. The next example shows even more sophistication:

[Athens is] the center of art and all that, so they have a lot of background knowledge, so...they have like a better chance of winning fights because they have bigger strategies?

To support her position that Athens is superior to Sparta, she presents as evidence the fact that Athens is a center of art. To connect this evidence to her position, she first infers that Athenians have a lot of knowledge because they live in a center of art. Then she claims that Athenians are better prepared to win fights because they have all this knowledge. However, in some cases, logic was tainted by presentism:

But [the pharaoh was] still wasteful because...even if he did believe in an afterlife, he did not need all that jewels when he already had enough...jewels on top of jewels.
Here the student’s claim is that the pharaohs were wasteful. The evidence he presents was that the pharaohs paid people to make jewelry for the afterlife. The student’s claim-evidence connection uses modern-day values. He argues that having all those jewels was not needed. Yet, in other cases, students were able to use logic without presentism. For example:

…[the Ancient Egyptians] had their beliefs, like we have our beliefs. They had their beliefs so they thought they would go into the afterlife, they would need all this jewelry and all this stuff so that they could live in the afterlife. So it’s not wasteful because they thought this.

This student’s position is that the pharaohs were not wasteful. As evidence, he uses the fact that the ancient Egyptians believed in the afterlife. I think he infers from this belief that the Egyptians believed they needed things like jewelry in the afterlife, and from this he concludes that they were not wasteful.

The background knowledge students used to explain how evidence supports a claim also varied. In a few instances, they drew background knowledge from the curriculum packet:

I think Sparta was the better city-state overall because, like, um, in Sparta women, like in Fact#17, women in Sparta could own property when in Athens you couldn’t ‘cause women couldn’t really own anything.

In this example, the student compares facts about Athenian and Spartan women from the fact list in the curriculum to show why Sparta is better. In other instances, students drew on their own general background knowledge to make the connection, as shown in this example:
We bring to the table Fact 3 – pay workers to build and maintain a large agricultural infrastructure, a complex system of canals, catch basins, dikes and other devices to control the waters of the Nile. Well, this is very important because water is the basis of life whether you’re a royal or whether you’re a peasant. Ya know, without water nothing can survive.

Here the student uses his knowledge about the importance of water to help explain why the Egyptians were wise spenders.

Though historical inaccuracies and logical fallacies exist in students’ claim/evidence connections, one must weigh that problem against a different problem – students not connecting claims and evidence at all. Thus, one could argue that the fact that students in these debates are at least making connections between claims and evidence is a good thing even with mistakes given that young students do not typically do this in their everyday arguments (Anderson, Chinn, Chang, Waggoner, & Yi, 1997). Teachers might even prompt students for counterarguments based on the historical inaccuracies and logical fallacies offered, which may lead to students becoming better at spotting these mistakes themselves.

**Relationship between Argumentative Move and Grounds Quality**

To determine at what points during classroom debates students were most likely to demonstrate strengths in argumentation, I conducted a Fischer’s Exact Test to see if there is a relationship between argumentative moves and grounds quality levels. The result was significant with a $p = 0.006$. To explore the nature of this significant relationship, I created a stacked bar chart as seen in Figure 5. This chart shows the percentage of comments at each grounds quality level based on
the argumentative move. Over 72% of positions were assigned the highest level of grounds (textual evidence with and without added reasoning), while only 32% of oppositions and 31.2% of supporting comments were assigned this level.

These results suggest that students are more likely to use textual evidence to support positions than oppositions or supporting comments. Though the curriculum is written to support students in using textual evidence for both positions and oppositions, one possible explanation why it is still far easier for students to present textual evidence for their positions than to use textual evidence to oppose an opponent is that students cannot know exactly what their opponents are going to say. Thus, for oppositions students must think “on their feet” rather than prepare at their own pace beforehand. Students may not have enough time in the course of a debate to think of how textual evidence proves their opponent wrong. So, to counter their opponents, they end up using grounds that are much more accessible to them than textual evidence, such as personal opinion. For example, in arguing why women in Athens are better off than women in Sparta, a student stated:

I would rather sit at home and take care of my kids and husband [like Athenian women] than to not have a kid or husband because they’re off somewhere [like Spartan women]…

Though the student is using opinion here to defend her position that Athens is better, she is arguably also using value-based reasoning. She values time with family, and uses what she values to make her case. Also more accessible than textual evidence is “made-up” knowledge, as seen here:
Student 1: Um, they said that their soldiers [the Spartans’ soldiers] would have to- they’re better because they go to camp by age 7. Well-

Student 2: They don’t- we [Athenians] don’t need to train ‘cause at- ‘cause at the age of 7, we know how to train ourselves.

However, this example could also be interpreted as a text-based inference. The curriculum materials from which students were asked to draw evidence give information about soldiers from Sparta and Athens. The materials did not say that the Athenian soldiers trained at age 7 like the Spartans, so the student may have inferred that the Athenians self-trained at age 7.

Students’ tendency to steer away from textual evidence, when classroom debate demands they participate extemporaneously, is congruent with other results presented in Figure 5. Only 9.1% of positions were assigned the lowest level of grounds (no grounds or non-text-based grounds, which include personal opinion and “made-up” knowledge as grounds), while 21.3% of oppositions and 34.4% of supporting comments were assigned this lowest level. It is important to note that the number of supporting comments without grounds is somewhat inflated in this sample because students would say they agreed with something a previous speaker stated without saying why (perhaps out of politeness or to subtly change the subject) before making their intended argumentative move (e.g. “Okay, I agree with you, but I’m gonna say my thing.”).

The last set of results in Figure 5 shows that for the medium level of grounds (general references to concepts in the text and text-based inferences),
oppositions had the highest percentage (46.7%), followed by supporting comments (34.4%) and positions (18.2%). This suggests that students are more likely to support oppositions and supporting comments with text-based inferences/references (e.g. “But the pharaohs aren’t just a little bit oppressive, they’re a lot oppressive because…if I was to say something bad about the pharaohs and they overheard me, they would like kill me or something, right?”) than to support positions with this type of grounds.

These results may make sense if we think about information accessibility to students on a spectrum. Personal opinion and “made-up” knowledge would be on one end of the spectrum, textual evidence would be on the other, and text-based inferences would be somewhere in between because they are often personal interpretations of textual evidence – not as exact as textual evidence and not as unrestricted as personal opinion. Because text-based inferences are theoretically more accessible than textual evidence, inferences are theoretically easier to use “on the fly” in oppositions and supporting comments in classroom debate.

These findings overall are consistent with one previous study. Lu et al. (2011) also found that 9th-grade students, during online discussions that were part of a humanities curriculum, used evidence more when offering a claim than when agreeing or disagreeing with a claim. Additionally, in the present study, students appear to be slightly more likely to support oppositions with text-based grounds than to do so with supporting comments, which is consistent with both Lu et al. (2011) and Clark and Sampson (2008) who found that when students are
challenging others’ ideas they are more likely to provide evidence than when they are supporting others’ ideas.

**Conclusion**

In examining urban middle school students’ classroom debates in the context of SoGen, a social studies curriculum designed to support students in classroom debate, I found that these students demonstrated strengths in argumentation that have not yet been identified in the literature on debates and discussions of controversial public issues in social studies classrooms.

First, students offered specific text-based evidence and claim-evidence connections during classroom debates on controversial issues at relatively high rates compared to an earlier study on argumentative discourse among older students. Also, students successfully used either logic or background knowledge to connect their claims and evidence. Furthermore, students often used text-based inferences to support oppositions during debate. Though such inferences are “second best” to textual evidence, they at least made some reference to text when given the more challenging task of opposing, with little or no preparation time, what another student just said.

Because this is not an experimental study, and because the six classroom debates analyzed in this study varied widely in terms of format, length, level of teacher intervention, and background knowledge of students, more research needs to be done to reveal any factors that are related to stronger student argumentation. Also, I think the historical inaccuracies and logical fallacies that students make
when generating claim-evidence connections in classroom debates should be explored further. A study might be able to compare: 1) debates where teachers help students recognize these mistakes and prompt students to respond them, with 2) debates where teachers do not do this and simply let the students carry on. It would be valuable to know if such mistakes can be leveraged into building students’ skills and dispositions toward the evaluation of information, which is important for both argumentation and citizenship.

**Implications for Practice**

This study points out that middle school students are capable of academic argumentation in classroom debates on topics in social studies. Thus, teachers who are wary of such debates should consider giving them a “second chance,” as the findings suggest there are several things teachers can do that may help improve the quality of their students’ argumentation during debates.

First, teachers can provide students with simplified texts to be used as evidence during debates, so that students can focus on the heavy cognitive task of analyzing the evidence for the debate instead of the equally heavy cognitive task of finding evidence to use from texts that are dense and lengthy, or doing both. As students’ debate skills improve over time, teachers can offer increasingly complex texts from which to draw evidence. Second, teachers can offer students sentence stems to help scaffold their generation of claim/evidence connections and counterarguments during debate preparation. Teachers can likewise slowly withdraw these supports as students gain more confidence in producing elements
of argumentation in the context of classroom debates. Any argumentative task can benefit from the use of simplified texts and claim-evidence sentence stems, but the oral and impromptu nature of classroom debates make the lightening of some of the many cognitive tasks involved in debate particularly important.

The findings also suggest that students are most likely to produce academic arguments when they first introduce and defend their positions in classroom debates and less likely to produce academic arguments when opposing others’ arguments, even when students spend some time predicting what their opponents’ arguments might be and planning responses. Thus, a teacher might try restructuring classroom debates so that students have time to prepare their oppositional responses based on what opponents actually said rather than what they anticipate opponents will say. Such an intervention would be getting rid of the “thinking on your feet” aspect of debate with the thought of reintroducing it once students are accustomed to producing rigorous opposition with ample preparation.

Though classroom debate at the middle school level is sure to present challenges to both students and teachers of social studies, especially those who are engaging in this activity for the first time, the National Council for the Social Studies argues that it is well worth the effort because such debates have the potential to: 1) engage students in critical thinking and reasoning based on values, and 2) provide teachers with valuable information not only about what students know but what they understand about social studies content (NCSS, 2008; 2013).
My analysis reveals that young students are not limited to ad hominem, non-academic arguments in social studies classroom debates as extant research, and intuition, suggest. Rather, they are capable of thoughtfully presenting and analyzing evidence when taking and defending their positions during classroom debates. This exploratory study suggests that curricular supports, such as readily available evidence and sentence stems to support the generation of claim-evidence connections, may help students do some of the heavy cognitive tasks demanded by debates, and may help classroom debates be more successful overall. However, social studies teachers who choose to make room in their regular curriculum for classroom debates on controversial issues are doing much more than potentially promoting their students’ oral argumentation skills. They are giving their students valuable opportunities to practice both listening to different perspectives and sharing their differences in a manner that is civil, which is what we want future citizens to do in public discourse, whether on paper, online, or face-to-face on a stage.
How Egypt Got Its Surplus

The Nile River was the source of Egypt’s great agricultural wealth. Each year it flooded in a regular way. The floods covered the lands on either side with rich, fertile soil. When the flood waters receded, farmers were able to plow the soft, wet soil easily. The soil was extremely fertile and produced excellent crops. The river refreshed the soil after each flood. Year after year, Egypt produced huge agricultural **surpluses**. These extra amounts of food supported many other kinds of activities.

Ancient Egypt used their surplus to build many projects and infrastructures and to reward their workers, but were they all justified? With a partner, read through the list of facts about what Egypt did with their surplus and complete the chart together.

**Egypt used its surplus to...**

<table>
<thead>
<tr>
<th>Fact #</th>
<th>Description</th>
<th>Surplus Use</th>
<th>Ranking (1-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pay thousands of workers to build monuments such as the Great Pyramid of Giza, which is one of the Seven Wonders of the World,” and Queen Hatshepsut’s temple at Deir-el-Bahri, considered to be one of the most beautiful structures in the world. On a scale of 1 to 9 (where 1 is very wise and 9 is very wasteful), what ranking would you give this use of surplus? Explain the ranking you gave.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Pay thousands of crafts workers to make items like jewelry and furniture for Pharaohs to use in the afterlife. On a scale of 1 to 9 (where 1 is very wise and 9 is very wasteful), what ranking would you give this use of surplus? Explain the ranking you gave.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Pay workers to build and maintain a large agricultural infrastructure—a complex system of canals, catch basins, dikes, and other devices to control the waters of the Nile River and to irrigate the farmlands. On a scale of 1 to 9 (where 1 is very wise and 9 is very wasteful), what ranking would you give this use of surplus? Explain the ranking you gave.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pay for the building and maintenance of large granaries to store grain. Stored grain was used during times of drought and poor harvests. On a scale of 1 to 9 (where 1 is very wise and 9 is very wasteful), what ranking would you give this use of surplus? Explain the ranking you gave.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Pay people to oversee building projects. One record shows that on a large building project for the Pharaoh, one overseer was paid 28 times what his lowest paid workers earned. On a scale of 1 to 9 (where 1 is very wise and 9 is very wasteful), what ranking would you give this use of surplus? Explain the ranking you gave.</td>
<td>1 2 3 4 5 6 7 8 9</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1. Partial list of facts that can be used as evidence in the debate.
Figure 2. List of sentence stems to help students connect facts to debate positions.
Figure 3. Frequency of argumentative moves.
Figure 4. Frequency of comments at each level of grounds.
Figure 5. For each type of argumentative move, percentage of comments at each level of grounds quality. Dark gray bars: no grounds/non-text-based grounds; light gray bars: text-based inferences/text-based references as grounds; medium gray bars: textual evidence or textual evidence plus reasoning as grounds.
Table 1

*Classroom Debate Information*

<table>
<thead>
<tr>
<th>Date of Debate</th>
<th><em>Teacher</em></th>
<th>Debate Format</th>
<th>Gravel Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/16/2012</td>
<td>Ms. T</td>
<td>Whole-class (teams)</td>
<td>6</td>
</tr>
<tr>
<td>5/25/2012</td>
<td>Ms. A</td>
<td>Whole-class (teams)</td>
<td>6</td>
</tr>
<tr>
<td>12/4/2012</td>
<td>Ms. T</td>
<td>Fishbowl</td>
<td>6</td>
</tr>
<tr>
<td>12/19/2012</td>
<td>Mr. C</td>
<td>Whole-class (teams)</td>
<td>7</td>
</tr>
<tr>
<td>3/6/2013</td>
<td>Mr. L &amp; Ms. N</td>
<td>Fishbowl</td>
<td>7</td>
</tr>
<tr>
<td>3/11/2013</td>
<td>Ms. T</td>
<td>Fishbowl</td>
<td>6</td>
</tr>
</tbody>
</table>

*Pseudonyms have been used to protect the identities of all participants.*
Table 2

**Coding Scheme for Argumentative Moves**

<table>
<thead>
<tr>
<th>Arg. Moves</th>
<th>Definitions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Explicit assertion that one side of a two-sided debate is correct.</td>
<td>We’re supporting that pharaohs were oppressive and their actions were justified. (Debate question: Were the pharaohs of Ancient Egypt oppressors or great leaders?)</td>
</tr>
<tr>
<td>Non-position Claim</td>
<td>An assertion that is not one of the two debate positions.</td>
<td>It was okay for pharaohs to be oppressive because if they were too stable they would have too much freedom. (Debate question: Were the pharaohs of Ancient Egypt oppressors or great leaders?)</td>
</tr>
<tr>
<td>Opposition</td>
<td>Disagreement with or attack on a position, claim, opposition, or grounds of an argumentative move OR questions to challenge an opponent OR responses to such challenge questions.</td>
<td>But it was still wasteful because- Okay, so even if he did believe in an afterlife, he did not need all that jewels when he already had enough ( ) jewels on top of jewels. And he could have used that money- he could’ve used that money to actually help fix canals or improve them for people to get water from Nile River. (Claim: Pharaohs were not wasteful in getting so many jewels for the afterlife because they had religious beliefs that they actually needed these jewels.)</td>
</tr>
<tr>
<td>Supporting Comment</td>
<td>Explicit agreement with another student’s argumentative move or grounds OR adding to, elaborating on, or repeating/re-emphasizing what was previously said.</td>
<td>…like let’s say, like he said, like- what did you say? Like if it rained and then it filled up and then there was a flood, like they will have food to store and- so yeah they’ll (live). They won’t starve to death. Like if they didn’t save it, they wouldn’t have food, or anything.</td>
</tr>
</tbody>
</table>

*Note.* The codes for opposition and supporting comment are nearly identical to their counterparts in Clark and Sampson’s (2008) framework.
Table 3

<table>
<thead>
<tr>
<th>Levels</th>
<th>Characteristics</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-Level 5</td>
<td>Textual evidence as grounds PLUS text-based reasoning, including: 1) explicit warrant connecting position/claim to evidence 2) text-based inference to bolster argument 3) related question to challenge opposition</td>
<td>Athens are better because, um, y-...Because Athens set up- set up its economy after the Persian Wars. At first its money was kept on the island of Delos, but in 454 BC, the money was moved to Athens where the Athenians could control it. And because they have- the reason that it would be a better place to live is ‘cause they have money.</td>
</tr>
<tr>
<td>G-Level 4</td>
<td>Textual evidence as grounds (verbatim from text OR paraphrased from text).</td>
<td>I think that Athens was a better place to live because in #16 it says that they built the greatest and most beautiful buildings.</td>
</tr>
<tr>
<td>G-Level 3</td>
<td>Text-based inferences as grounds or general references to key concepts in text as grounds.</td>
<td>Another reason why- Well, the last reason why I think that, um, Athens was better than Sparta is because they don’t have to go to camp at age 7.</td>
</tr>
<tr>
<td>G-Level 2</td>
<td>General references to the text itself as grounds.</td>
<td>How is it lies if it says in the reading?</td>
</tr>
<tr>
<td>G-Level 1</td>
<td>Grounds that are not based on text.</td>
<td>Student1: Um, they said that their soldiers would have to- have to- they’re better because they go to camp by age 7. Well- Student2: They don’t- We don’t need to train ‘cause at- ‘cause at the age of 7, we know how to train ourselves.</td>
</tr>
<tr>
<td>G-Level 0</td>
<td>No grounds.</td>
<td>We think that ancient Egyptians were wasteful spenders.</td>
</tr>
</tbody>
</table>

Note: This coding scheme is modeled on the framework of Clark and Sampson (2008).
Chapter 5.

Conclusion

Looking across the studies, it is clear that during enactments of the 6th-grade SoGen curriculum students engaged in argumentation at a level that may not be expected given previous studies on students’ argumentative discourse. The studies show students not only supporting their own arguments with text-based evidence and explaining how their evidence supports their claims, but also engaging thoughtfully with their opponents’ arguments. Correspondingly, the findings of the studies suggest that teachers enacting the SoGen curriculum supported their students’ engagement in argumentation. Specifically, the teachers did what I will call “supportive prompting” for claim-evidence connections and counterarguments both before and during classroom debates. This supportive prompting includes moves such as: reading aloud specific pieces of textual evidence, re-stating what a student said in a previous turn, telling students to respond specifically to a comment of another student that was just re-stated by the teacher, reminding students of their positions in the debate, making students aware of what their opponents will likely do to weaken their position, describing to students what they need to do in order to counter their opponents’ anticipated attacks, and giving students time to generate a response.

A closer look at the data in these studies revealed that the nature of students’ engagement with each other’s ideas ranged from direct to oblique and from brief to more extended engagement. It may be useful for future research to identify
teacher or student actions that correspond with longer and more direct engagement with students’ ideas. Extended two-student exchanges and out-of-turn talk, patterns identified in topical episodes containing dialogic argumentation in one of the three studies, may have affordances for such engagement.

The nature of teachers’ engagement with students’ ideas also varied from brief, non-specific feedback (e.g. “Good!”) for every student’s idea to very specific feedback on the reasoning behind one student’s idea. There were also instances in which students’ ideas were overridden by either another student’s idea or even the teacher’s idea. More research is needed to identify the affordances of these different teacher approaches, and to identify other possible ways teachers (and students) can engage with student-generated arguments so that students can strengthen their arguments and, over time, become more skilled arguers.

Yet, even if future research identifies more practices and approaches that promote argumentation skills over time, Newell et al, (2011) suggest that there are “features of classroom life that impede” (p. 297) students’ use of these argumentation skills. Nystrand and Graff (2001) elaborate on one of these features. They argue that, “the complex demands of a large modern classroom configure writing and reading activities that can inhibit the epistemology of argument as an extended, in-depth, reasoned exchange” (p. 489). The studies in this dissertation go further, showing that even when teachers and students work in small groups doing activities that are specifically designed to support argumentation among students, “extended, in-depth, reasoned exchange” remains elusive. Yet, the
studies also give hope that such argumentative exchanges are not completely unachievable. The findings suggest that teachers have the potential to model for students “extended, in-depth, reasoned exchange” by deeply engaging with their students’ arguments themselves. Teachers can also help move students toward this kind of exchange by doing some of the moves identified in one of the studies (i.e. re-stating an argument given by a student, directing an opponent to offer a counterargument to the re-stated argument, giving students time to generate a counterargument during the discussion). Of course, the above teacher actions to support “extended, in-depth, reasoned exchange” are contingent upon enough instructional time being allocated for these efforts and upon opportunities for students to argue with each other in the first place.

In speaking about the future of education research, Snow (2015) argued:

We do not need more studies evaluating impacts of add on programs to specific, targeted outcomes. We need studies of how added practices and approaches can be integrated into and thus enhance the impact of well designed core instructional programs (p. 464).

The studies in this dissertation are examples of these needed studies in that they begin to identify practices and approaches that potentially enhance argumentation skills. These practices and approaches can be integrated into any classroom across the disciplines in which argumentation is a goal.
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