

ABSTRACT

Title of Dissertation: THE EFFECTS OF SCAFFOLDED INSTRUCTION IN THE TOULMIN MODEL OF ARGUMENT ON THE PROBLEM-SOLVING STRATEGIES OF FOUR SIXTH-GRADE WRITERS

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Abstract. The purpose of this case study was to examine the effects of scaffolded instruction in the Toulmin Model of Argument on the problem solving strategies used by four sixth-grade writers while composing argumentative essays. Three major components of the Toulmin Model that were presented to participants were claims, data, and warrants. Participants for the proposed study were four sixth-grade students, two of whom were identified as “high ability” (one male and one female) and two of whom were identified as “average ability” (one male and one female). Results of the study were derived primarily from the analysis of intervention protocols and essays produced by participants. After completing a survey about their experiences with argument/persuasion, participating in a practice think aloud, and composing a pretest argumentative essay while providing a think aloud guided by the intervention protocol, participants received a total of six units of scaffolded instruction in the Toulmin Model over a period of four weeks. At the end of the instructional period, participants composed an “independent” argumentative essay under normal (non-protocol) conditions. For the posttest, participants provided a second think aloud guided by the intervention protocol while composing an argumentative essay. Pre-test, independent, and posttest prompts asked

participants to formulate and support a claim about a proposed change to a school policy and were identical in form, audience, and task demands. As a result of the intervention instruction in the Toulmin model and the scaffolds I was able to construct through the intervention protocols, participants were able to move beyond knowledge telling to engage in knowledge transforming, moving back and forth between problem spaces of content and rhetoric, and thus more effectively handling the audience-related task demands of warranting claims and providing convincing supporting data – aspects of argumentative writing that existing research suggests pose the greatest difficulties for secondary students. I had hypothesized that the intervention instruction in the Toulmin model would also enable participants to more effectively handle the argumentative writing task demand of anticipating and responding to opposition, but this hypothesis was not supported by the study data.

TRANSFORMING KNOWLEDGE: THE EFFECTS OF SCAFFOLDED
INSTRUCTION IN THE TOULMIN MODEL OF ARGUMENT ON THE PROBLEM-
SOLVING STRATEGIES OF FOUR SIXTH-GRADE WRITERS

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To my parents, T. Kenneth Wilson and Jean Holmes Wilson, who have shown me by their example what it means to be a dedicated teacher and life-long learner.

To my children, Erin Rhian Wilson and Declan Macrae Wilson, who have served as the inspiration for me to achieve this goal, and all the goals I set for myself.

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Chapter I

Introduction and Rationale

A commonly held view regarding public education in the United States is that one of its primary purposes is to produce informed citizens capable of a high level of critical thought in academic, professional, social, and personal contexts. McCann (1989) asserted that “argument is an essential instrument for a free society that deliberates about social, political, and ethical issues” (p. 63). Hernandez, Kaplan, and Schwartz (2006) argued that, because “the heart of good writing is good thinking,” it is therefore crucial for high schools to privilege argumentative writing in order to teach students “the type of analytical reasoning necessary for college success” (p. 48) and, ostensibly, for success in the careers that will follow. Researchers and policy-makers alike have recently concluded that our nation’s schools should overhaul the curriculum by placing greater emphasis on teaching students to write effectively in the argumentative mode (Hillocks, 2011; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010; Partnership for Assessment of Readiness for Colleges and Careers, 2013). Hillocks (2011) articulated this new vision of public education wherein argument should be central to all learning, stating that schools should “adopt a policy of teaching through inquiry,” thereby assuring that “making arguments would be taking place every day in every subject matter” (p. 200).

Noting what he termed the “pervasiveness of argument,” Fulkerson (1996) defined an argument as “any set of two or more assertions in which one (or more) is claimed to offer support for the other” (p. 27). This definition, which encompasses all analytical writing that aims at convincing an audience to accept the validity of the

evidence and conclusions the writer presents, is applicable to much of the academic writing secondary students are required to do in a variety of situations. Learning to write effectively in the argumentative mode is essential to developing the ability to reason intelligently across academic disciplines, as well as in broader personal and social contexts.

Efforts to increase the quality and quantity of students' argumentative writing are currently a national focus. This past fall, writing teachers in 45 of 50 states were required to adhere to a new set of standards – The Common Core State Standards for English Language Arts – in planning and delivering instruction (Common Core State Standards for English Language Arts, 2010). The authors of the standards state that “[t]he ability to write logical arguments based on substantive claims, sound reasoning, and relevant evidence is a cornerstone of the writing standards, with opinion writing—a basic form of argument—extending down into the earliest grades,” thus indicating a perceived need to provide instruction in argumentative writing throughout the school years. The premium placed upon teaching middle and high school students to compose effective arguments is also reflected by the fact that the argumentative writing capabilities of our nation's secondary students are regularly assessed as a part of the National Assessment of Educational Progress (NAEP). Persky, Daane, and Jin (2002), authors of the 2002 NAEP writing study, stated in the introduction to their report that they believe that “[a] healthy and civil society requires citizens who are able to state a case carefully and to reason with others persuasively” (p. 21).

Despite the importance of effective argumentation in academic, professional, social, and personal settings, NAEP studies of argumentative writing, as well as other

studies of middle- and high-school students' argumentative writing capabilities, have consistently found that secondary students cannot write effective argumentative essays (Crowhurst, 1988; Knudson, 1992; McCann, 1989; National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salahu-Din, Persky, & Miller, 2008; Schneider, 2008; Schultz & Laine, 1987; White & Venneman, 2000). It is, perhaps, for this reason that NAEP altered the framework for the 2011 administration so that the assessment of writing skill "focuse[d] on writing for communicative purposes and on the relationship of the writer to his or her intended audience" (NAEP, 2007).

The present case study (Stake 1995, 2010) examines the effects of providing four sixth-grade writers with an intervention consisting of six units of scaffolded instruction in the Toulmin (1958/2003) Model of Argument in the interest of determining whether and to what extent the scaffolded instruction provided, coupled with intensive work in each participant's "zone of proximal development" (Vygotsky, 1934/2006), improves the effectiveness of participants' problem solving processes and the quality of their written products. Particular attention will be given to how well participants address the audience-related task demands of warranting arguments, providing effective supporting data, and addressing opposition – the areas researchers have found to be the most problematic facets of argumentative writing for secondary students.

In Chapter 1 of this study, I will briefly overview findings of NAEP studies and selected independently-conducted studies of the argumentative writing capabilities of secondary students. This overview will serve as an introduction to the problem I address in the present study. Relevant studies of secondary students' argumentative writing capabilities will be rehearsed in detail in Chapter 2. I will also provide a succinct

description of the “SEE” model (Statement, Examples, Explanation), a model that participants regularly encountered in routine classroom instruction, and contrast it with the Toulmin model, which served as the basis for the heuristic that participants used in connection with the intervention I designed for the present study. Finally, I will provide a rationale for this study that includes descriptions of participants, tools, and procedures as well as definitions of key terms. I will conclude this rationale with a discussion of the study’s theoretical framework and potential significance.

Statement of the Problem

Despite the crucial role that the ability to argue effectively plays in social, personal, academic, and professional success, our nation’s secondary students are unable to write effective argumentative essays (Crowhurst, 1988; Knudson, 1992; McCann, 1989; National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salahu-Din, Persky, & Miller, 2008; Schneider, 2008; Schultz & Laine, 1987; White & Venneman, 2000). This inability is likely due to a lack of effective writing instruction in our nation’s schools (Applebee, 1986; Applebee, Langer, Jenkins, Mullins, & Foertsch, 1990; Bereiter & Scardamalia, 1987; Everson, 1991; Hillocks, 1986; Hillocks, 1995; Hillocks, 2011; Langer & Applebee, 1987; McCutcheon, 2006; Prichard & Honeycutt, 2006; Schultz, 2006; Smagorinsky, 1994; Swanson-Owens & Newell, 1994) and the inherent cognitive difficulty of argumentative tasks (Burkhalter, 1995; Crammond, 1998; Golder & Croirier, 1994; Graham, 2006; Kellogg, 1994; Knudson, 1992; Kroll, 1978; McCann, 1989; McCutchen, 2006). Another possible contributing factor is the fact that argumentative writing is not widely taught (Nystrand & Graff, 2000). I will discuss these factors at length in Chapter 2 of this study.

In reviewing research related to the present study, I have noted that researchers studying secondary students' argumentative writing capabilities rely almost exclusively on NAEP findings and occasional references to state-level curricula to frame and present assertions and findings. This suggests to me that little is actually known about how, and the extent to which, argumentative writing is taught in our nation's schools. In an effort to establish what these somewhat limited sources *have* revealed, I will next briefly overview NAEP findings from the last four administrations of these assessments.

Overview of NAEP Writing Assessments

According to Salah-Din, Persky, and Miller (2008), authors of 2007 NAEP writing report, the same framework and rubric have been used for three recent administrations of the NAEP writing assessment (1998, 2002, 2007). Prior to 2011, NAEP tasks and rubrics were aimed at measuring "persuasive" writing ability. I will later assert that the term "argumentative," which is featured in The Common Core State Standards, more accurately describes NAEP tasks, and will distinguish between persuasion and argumentation. In their discussion of the objectives of the NAEP Writing Framework, Salah-Din, Persky, and Miller (2008) provided the following description of persuasive writing and assessment-related tasks:

Persuasive writing seeks to influence the reader to take action or bring about change. It may contain factual information, such as reasons, examples, or comparisons; however, its main purpose is not to inform, but to persuade. The persuasive topics in the writing assessment asked students to write letters to friends, newspaper editors, or prospective employers, as well as to refute arguments or take sides in a debate. (p. 1)

An analysis of the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E) reveals an emphasis on stating a position and supporting it with examples. Writers are rewarded with a higher score if they composed essays that were organized throughout, and did not include distracting errors in grammar or spelling. The rubric also rewards students who could identify and respond to opposition, a key component of effective argumentative essays (i.e., the ability to “refute arguments” as described by Salah-Din, Persky, and Miller above). Persky, Daane, and Jin (2003), who authored the 2002 NAEP writing assessment report, claimed that only essays that “address[ed] counterarguments” were given the highest rating of “excellent;” however, very few twelfth-grade writers, the oldest and ostensibly most capable writers who took part in the NAEP writing assessments of 1998, 2002, and 2007, were able to successfully address opposition and compose essays rated as “excellent” or even “skillful.” In the paragraphs that follow, I will briefly overview the findings of these three NAEP writing test administrations, as well as data from the most recent NAEP writing assessment which was administered in 2011.

If the aim of public schooling is to prepare students for the world of college and careers, secondary students must, by the time they are preparing to graduate, be able to take a position and support it effectively (Partnership for Assessment of Readiness for Colleges and Careers, 2013). The number of twelfth graders able to compose essays rated as “skillful” or “excellent” on the NAEP writing assessments of 1998, 2002, and 2007 indicates that the writing instruction they received over the course of their public school careers did not adequately prepare them for this critical task. In their analysis of the 1998 administration of the NAEP writing assessment, White and Venneman (2000)

stated that only 10% of students composed essays rated “skillful” and a mere 3% wrote essays deemed “excellent.” Persky, Daane, and Jin (2003), authors of the 2002 NAEP writing assessment, reported that 9% of twelfth-graders composed argumentative essays that were rated as “excellent,” and 22% wrote essays found to be “skillful.” According to Salahu-Din, Persky, and Miller (2008), authors of the 2007 NAEP writing assessment, twelfth-graders throughout the country continued to struggle with argumentative writing. On the occasion of releasing the 2007 NAEP report, Schneider (2008), the Commissioner of The National Center for Educational Statistics, said that our nation’s writing teachers “still have a ways to go.” Only 5% of twelfth-graders were able to write responses that were rated “excellent,” and only 21% composed responses that were “skillful.”

The most recent administration of the NAEP writing assessment took place in the fall of 2011. All 24,100 eighth graders and 28,100 twelfth graders who took the test did so on a computer. The two highest ratings were also changed from “excellent” to “effective skill and from “skillful to “competent skill.” Scale scores were used to categorize students as “Basic,” “Proficient,” or “Advanced.” Although the test was administered online and the rating descriptors were changed, the performance of student writers remained unchanged. Only 27% twelfth graders scored “Proficient” or above, and of that 27%, only 3% earned scores that placed them at the “Advanced” level (National Center for Educational Statistics, 2012).

The number of students scoring at the highest two levels on the four most recent NAEP writing assessments indicate that secondary students struggle with argumentative writing, with only a small percentage writing essays that indicate that they could argue effectively in post-secondary academic and professional contexts. A mere 3% to 5% of

students earned “excellent” level ratings for their essays, indicating that they were able to deal with opposing viewpoints – a crucial facet of effective argumentation. Aside from NAEP assessments, research on secondary students’ argumentative writing capabilities largely takes the form of independently conducted studies. For the purpose of the present study, I have focused on studies that featured the Toulmin model. I will next briefly overview the Toulmin (1958/2003) model and the most relevant of these Toulmin-based studies of secondary students’ argumentative writing capabilities.

Toulmin-Based Argumentative Writing Studies

Consistent with the findings reported by the authors of the NAEP studies rehearsed above, other researchers investigating secondary students’ writing capabilities have also found that they struggle with writing arguments. One pattern that emerged from the Toulmin-based argumentative writing studies I reviewed is that secondary students have particular difficulty in handling audience-related task demands. The Toulmin Model of Argument (1958/2003) consists of three major components. The “claim” is the thesis the writer will support, or the position statement he or she will argue. “Data” refer to evidence that supports the claim. “Warrants” are concepts, often taking the form of some rule, definition, or guiding principle, that the writer cites to connect the data to the claim. Using the Toulmin model as a framework for analyzing and assessing the quality of secondary students’ argumentative essays, McCann (1989) and Knudson (1992), in their studies of grade-level differences of secondary students’ argumentative writing capabilities, discovered that the most problematic facets of argumentative writing for middle and high school students were the audience-related task demands of warranting arguments, providing effective supporting data, and citing and responding to

opposing viewpoints. Similarly, Burkhalter (1995), and Crammond (1998), found that the handling of audience-related task demands, especially the ability to warrant arguments, to be the greatest source of difficulty for secondary students when writing in the argumentative mode. Whether, and to what extent, participants were able to handle the audience-related task demands of warranting arguments, providing convincing supporting data, and anticipating and responding to opposition is a major focus of the present study.

Yeh (1998b) studied the effectiveness of two Toulmin-based heuristics in the context of instructing students in argumentative writing. Yeh found students in his study used the heuristics “flexibly,” thus “suggesting that students learned principles rather than rote procedures for argumentation and were able to adapt heuristics and transfer their knowledge to a range of topics” (p. 49). Yeh’s study is of particular importance to the present study in that Yeh went beyond using the Toulmin model as a basis for simply assessing the quality of participants’ written products to instead use the model to actually guide them in the writing process. That participants used Toulmin-based heuristics “flexibly” as Yeh described suggests that these tools facilitated a more sophisticated approach to problem solving task demands – an approach that Bereiter and Scardamalia (1987) termed “knowledge transforming.” The distinction between “knowledge transforming” and the less sophisticated strategy of “knowledge telling” is also of primary importance to the present study. A major aim of the Toulmin-based intervention instruction I designed was that it might similarly serve participants in learning “principles rather than rote procedures for argumentation” that they would be able to use “flexibly” as they “transfer[ed] their knowledge to a range of topics” they encountered in the study.

Lunsford (2002) also investigated how young writers used the Toulmin model. Like Yeh (1998b), Lunsford went beyond using the Toulmin model to simply assess the quality of essays produced by study participants and instead used the model to guide instruction. Citing another study by Yeh (1998a), in which he concluded that the Toulmin model provides researchers with a valid means of assessing contextual factors affecting writers' understandings of the model and "fostered integrated rather than isolated consideration of argument elements" (p. 123), Lunsford conducted a study of high school students' argumentative writing processes during a summer writing workshop held at a university in which she examined in detail how participants negotiated meanings using the Toulmin model as a guide. Lunsford concluded that the Toulmin model "is an effective tool for writing instruction" (p. 159) as well as a useful framework for evaluating study participants' written products.

Hillocks (1995, 2011) has also argued that the Toulmin model, when used in conjunction with an inquiry-based approach to learning, is very useful in "help[ing] students learn to develop arguments from existing data" (p. 16). The present study focused on providing scaffolded instruction in the Toulmin model to four sixth-grade writers. The intervention centered on an inquiry-based approach to instruction which Hillocks's (1995) termed "environmental." Although researchers have succeeded in identifying the precise areas where secondary students' performance on argumentative tasks tends to break down, what remains uncertain is *why* they experience so much difficulty when writing arguments. Two possible reasons why secondary students experience difficulty with argumentative writing, and particularly the handling audience-related task demands, may be found in two main sources: the heavy cognitive demands

of argumentative writing and ineffective writing instruction. Both of these factors have a major impact on writers' strategies for problem solving argumentative tasks. I will describe the impact of the cognitive demands of argumentative writing and ineffective writing instruction, as well as the specifics of the Toulmin model and its use in an inquiry-based learning environment, in Chapter 2 of this study.

The aim of the present study was to provide four sixth-grade writers with an effective schema for solving the ill-defined problems presented by argumentative writing tasks. More specifically, I attempted to transition participants from a widely adopted knowledge telling heuristic known as "SEE" (an acronym for "Statement, Examples, Explanation") to the Toulmin model, which I used not only to describe the components of an effective argument, but also as a heuristic to guide knowledge transforming. The protocol I designed to collect data for this study – an "intervention protocol" (Swanson-Owens & Newell, 1994) – also served as an instructional scaffold. Students were questioned before, during, and after writing. The intervention protocol thus supported students as they problem solved as well as provided me with an understanding of the following: how the writer approached writing tasks in general; what the writer knew about argumentative writing task demands; what the writer knew about the topics an argumentative piece might address; what the writer knew about his or her audience; what the writer speculated the audience may have known or believed about the topics; what content, procedural, and rhetorical goals the writer set for the argumentative piece; and, as the writer composed, how the writer assessed how well he or she met these goals. The protocol adapted for use in the present study, which is described in detail below, was used to generate data about these and other forms of knowledge as well as problem

solving strategies that participants brought with them to the writing tasks. Participants also received support as I engaged them in dialogue during the course of instruction, and as they did work on writing tasks guided by the protocol. Through this engagement with participants in their zones of proximal development, I attempted to learn how their problem solving strategies were affected by instruction in the Toulmin model. I also endeavored to determine if such instruction could not only teach participants the components of effective arguments, but also serve to reduce the cognitive load of argumentative writing tasks, and facilitate the kind of knowledge transforming effective argumentative writing demands by supporting “conceptual planning” (McCutchen, 2006). The problematic audience-related task demands of warranting claims, providing effective supporting data, and handling opposition were a particular focus of the analysis presented. In the next section, I provide a detailed description of the present study.

The Present Study

The present case study (Stake 1995, 2010) examined how four sixth-grade writers problem solved while composing argumentative essays. The intervention I designed features six units of scaffolded instruction in Toulmin’s (1958/2003) Model of Argument. Through scaffolded instruction in the Toulmin model, and the protocol used to guide participants as they composed pre- and posttest essays, I created a “zone of proximal development” (ZPD) that provided all of the instructional supports described above. I hypothesized that the scaffolds provided by the Toulmin model and the protocol I devised, which is based on Swanson-Owens and Newell’s (1994) “intervention protocol,” would permit me to collect detailed information about the problem solving strategies used by participants while composing argumentative essays. At the same time, these scaffolds

would also facilitate the knowledge transforming process for participants and reduce the cognitive load these writers would experience as they tackled argumentative writing task demands. Furthermore, the use of the intervention protocol, which is a type of semi-structured interview, would allow me to determine, at least in some instances, the source of the knowledge the writer was accessing, and thus better understand what may be attributed to the writer's prior knowledge stemming from his or her personal experiences and prior writing instruction, and what effects may be attributed to the intervention. At the conclusion of the intervention, and prior to the posttest, participants also composed an "independent essay" under non-protocol conditions that was identical in task demands to the pre- and posttest essays. They composed this independent essay in the interest of assessing what Vygotsky (1934/1986) termed "actual performance" – what a learner is able to do independent of any assistance. Actual performance on the independent essay thus served as the best indicator of gains participants made as a result of the intervention, and proximal performance on the posttest was used reveal the extent to which the intervention affected their problem solving strategies.

Rationale

The rationale for this study emanated from what I perceive to be the disparity between the importance of argumentative writing to the personal, social, and academic success of our nation's young people, and the apparent failure of prevailing practice in the teaching of writing to provide secondary students with the instructional support they need to compose effective argumentative essays. In an effort to address Smagorinsky's (1994) criticism that secondary students left to figure out how to meet the demands of argumentative writing on their own are "not up to the task" (p. 361) – I designed

“considerable instructional support” aimed at improving the “conceptual planning” (McCutchen, 2006) of the participants, and thus, the overall effectiveness of the argumentative essays produced as a consequence of engaging in knowledge transforming. Aware of the heavy cognitive demands that argumentative writing tasks place on young writers, the interventions and scaffolds I created are aimed at reducing cognitive load. In providing a rationale for the present study, I will briefly explain why the major components of the intervention – scaffolded instruction in the Toulmin model and intervention protocols – were selected. I will also justify the use of Vygotsky’s (1934/1986) “zone of proximal development,” and what Bruner (1975) has termed the Vygotskian practice of “scaffolding,” as the theoretical framework for this study. I will describe how the inquiry-based, “environmental” approach to learning espoused by Hillocks (1986, 1995, 2011) guided instruction. Finally, I will explain the reasoning behind my decision to conduct the study with sixth-grade writers, as well as my decision to compare effects of the intervention instruction in the Toulmin model – a model that facilitates knowledge transforming – with participants’ performances on argumentative tasks using the SEE (Statement, Examples, Explanation) model – a model that I argue cues for, and limits writers to, knowledge telling. Before discussing the possibilities of using the Toulmin model in instruction, I will briefly introduce the model.

The Toulmin Model of Argument

In an effort to clarify elements common to both inductive and deductive arguments, Toulmin (1958/2003) devised a model for analyzing the component parts of any argument, and the connections between them. Fulkerson (1996) described the three components that make up the “core” of the Toulmin model – data, claim, and warrant –

stating that “[t]he data are facts cited as premises for support” for the claim, which is “the argument’s conclusion,” while the warrant is “the general operating principle or rule of thumb allowing a bridge to be made between the data and the claim” (p. 18). Fulkerson (p. 19) illustrated the relationship between the three elements as follows:

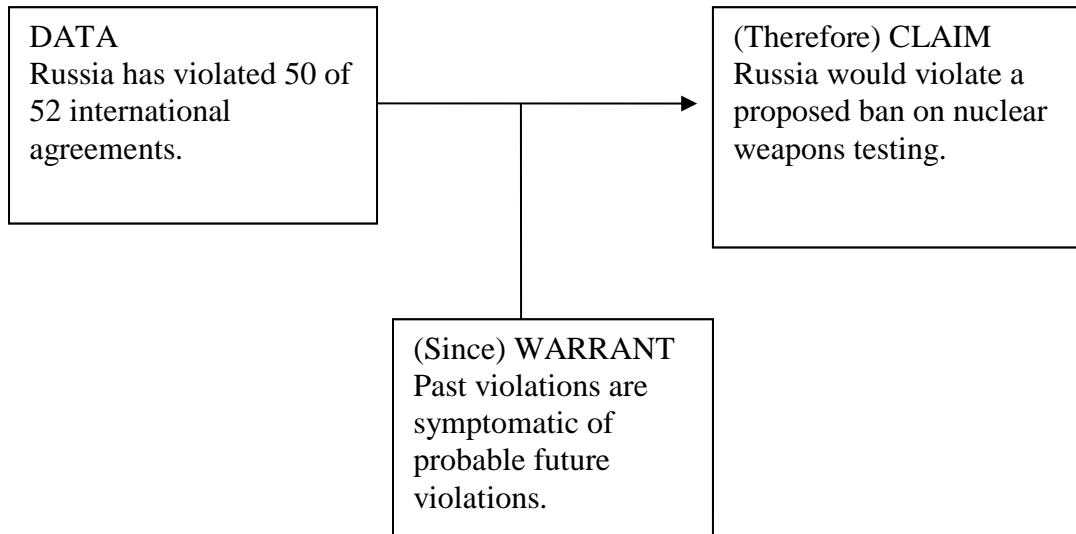


Figure 1. Toulmin’s (1958/2003) model of argument.

Fulkerson’s description of a warrant as “a general operating principle or rule of thumb” indicates that the field from which warrants are drawn may be highly formal (e.g., an established, well-defined theory) or informal (e.g., an observation based on the writer’s personal experience). Irrespective of source, warrants “represent the underlying reasoning used in an argument” (Chambliss & Calfee, 1998, p. 153).

The present study treats the Toulmin Model of Argument (1958/2003) as a complex framework (Hayes, 1996) – one that specifies “some or all of the relations among elements” which are “represented diagrammatically by lines connecting the related elements” and that uses “an arrow to indicate the direction of the relation ...” (p. 35). Instruction was focused on the three basic elements of the Toulmin model – data,

claim, and warrant – and I did not alter or modify the model in any way as some researchers have done.

Scaffolded Instruction in the Toulmin Model of Argument

Aware of the ineffectiveness of prevailing practices in writing instruction, as well as the complex cognitive demands that argumentative writing presents, researchers have investigated possible ways to improve the ability of secondary students to formulate effective arguments. In an effort to systematically acquaint students with how arguments are structured, some researchers and practitioners have recommended that students be provided with relevant direct instruction in argumentative models (Crowhurst, 1988; Crowhurst, 1991; Hillocks, 1995; Hillocks, 2011; Jolliff, 1998; Knudson, 1992; Lunsford, 2002; Pederson, 2002; Schultz & Laine, 1987; Yeh, 1998a; Yeh, 1998b). The term “direct instruction” has had various meaning in the contexts of research and practice (Rosenshine, 2008). I distinguish between the terms “direct instruction” and “scaffolded instruction” in the section on definitions later in this chapter.

The scaffolded instruction provided to participants based on Toulmin’s (1958/2003) Model of Argument was designed to provide these young writers with what Smagorinsky (1994) has termed “task-specific procedural knowledge.” Going beyond formulaic instruction based on the imitation of model essays and simply following a step-by-step set of general procedures, instruction in task-specific procedures provides writers with an in-depth understanding of genre, and how to problem solve to meet the task demands of the type of writing undertaken. Knowledge of genre was cited by McCutchen (2006) as being of use to writers when using the knowledge telling strategy. Knowledge of genre is also essential to knowledge transforming. While composing a

argumentative essay, a writer, once secure in his or her knowledge of what content an essay should include, can then focus all cognitive resources on the problem solving of audience demands – warranting arguments, generating effective supporting data, and recognizing and responding to opposition – all tasks related to rhetorical goals which, McCutchen explained, often go unaddressed as writers, in a state of cognitive overload, limit their text production, as well as any planning they may do, to knowledge telling.

I initially selected the Toulmin Model in the interest of allowing comparisons to be made to studies by McCann (1989), Knudson (1992), and Crammond (1998). When I came across the work of Hillocks (1995, 2011), who, in conducting research with his graduate students using the Toulmin model to help Chicago Public School students “learn to develop arguments from existing data” (16), I became interested in using the Toulmin model as a heuristic to impart understandings about the content, rhetorical, and procedural components of argumentative writing.

The fact that the Toulmin model was classified by Hayes (2006) as a “complex framework,” and thus one that has the potential to reduce cognitive load, further solidified my decision to build the intervention upon this specific argument model. Hayes defined “frameworks,” and differentiated between “simple” and “complex” frameworks, as follows:

Frameworks are representations designed to help us think about complex processes or situations. A simple framework may consist of nothing more than a brief list of elements or features ... More complex frameworks ... specify some or all of the relations among elements. In some cases, these relations are designated simply as present or absent, and are represented diagrammatically by lines

connecting the related elements. In other cases, the connections are characterized in more detail by using an arrow to indicate the direction of the relation or a label to indicate its type. (p. 35).

The cognitive models of the writing process by Flower and Hayes (1981), Bereiter and Scardamalia (1987), Kellogg (1994) and Hayes (1996) are also examples of complex frameworks. The workings of the Toulmin model as it functions independently and in concert with cognitive models of the writing process will be discussed in detail in Chapter 2 of this study. At present, the importance of the Toulmin model to the rationale for the present study is that, as a complex framework, it has the potential to reduce cognitive load by fostering the development of task-specific procedural knowledge, thus enabling writers to engage in knowledge transforming. Among the advantages of frameworks, Hayes claimed that they can “provide a common language” and “facilitate acquiring and organizing knowledge” (p. 37). In addition to providing a genre-specific vocabulary that may aid in formulating and assessing content goals, participants benefited from the Toulmin model’s capacity as a complex framework to facilitate problem solving procedures, helping them “notice relations among items of knowledge already stored in memory and thus provid[ing] an opportunity to reorganize that knowledge” (Hayes, 1996, p. 36). As writers worked with the Toulmin model throughout this study, they were able to sufficiently internalize this complex framework to generate content and rhetorical goals that better met the task demands of the argumentative essays they composed. A working knowledge of the Toulmin model, along with scaffolds provided by instruction and the intervention protocol, provided participants with procedures that facilitated knowledge transforming and reduced cognitive load as they problem solved to

set and meet rhetorical goals. These supports facilitated conceptual planning, and resulted in more effective argumentative essays that met the audience-related task demands of warranting arguments, providing effective supporting data, and recognizing and responding to opposition.

The Intervention Protocol

The use of Swanson-Owens and Newell's (1994) "intervention protocol," which will be discussed in depth in Chapters 2 and 3 of this study, was also intended to address the problem of cognitive load. While the instruction in the Toulmin model aimed at reducing cognitive load by providing task-specific procedural knowledge that was genre-specific, thus aiding in generation of material supporting content and rhetorical goals, the intervention protocol designed for use in this study supported writers by scaffolding general procedures and cuing for goal setting. Participants were asked a series of questions before composing that prompted them to think about what they knew about the topic; what they believed their intended audience knew about the topic; what objections their intended audience might have had to their position; and, how they would go about setting content, rhetorical, and procedural goals. This approach to writing stood in sharp contrast to the stage model approach wherein the "teacher describes the four stages [i.e., planning, drafting, revising, editing], [and] students recall and rehearse the steps" to produce a finished text – an approach Pritchard and Honeycutt (2006) have described as a "simplistic pedagogy" that is "linear and prescriptive" (p. 276), and thus fails to support problem solving. Ineffective writing instruction and effective alternatives will be rehearsed in detail in Chapter 2 of this study. Alternatively, the intervention protocol, in keeping with the cognitive process models innovated by Flower and Hayes (1981),

Bereiter and Scardamalia (1987), Kellogg (1994), and Hayes (1996), was designed to accommodate writing that is goal-directed and recursive. When writers determined that they had met a goal, they paused, thus giving me an opportunity to question them as to what goals they had met thus far. According to Swanson-Owens and Newell (1994), these pauses generally occur when the writer has completed a paragraph, a phenomenon also noted by McCutchen (2006). Once writers finished the essay, I questioned them as to how well they think they had met their goals. Writers were free to make any revisions they wanted to make at any time, and to pause at any time for any other reason (e.g., to think, to ask a question, to seek clarification, etc.). As is the case with the use of the Toulmin model, by reducing cognitive load – here, associated with general procedures – as well as through direct prompting that probed but did not lead, participants were better able to set and meet content, rhetorical, and procedural goals as a result of the support they received from the intervention protocol.

Intervention protocols focus on internalization and aid in understanding how instruction can be scaffolded in order to help writers develop “more expert-like composing strategies” (Swanson-Owens & Newell, 1994). This unique quality of intervention protocols, coupled with Hillocks’ (1986, 1995, 2011) findings about the effectiveness of environmental approaches to teaching, guided me to the work of Vygotsky (1934/1986) in an effort to articulate a theoretical framework for the present study.

Scaffolding and the Zone of Proximal Development

The theoretical framework for the present case study may be most broadly described as constructivist. In describing the work of qualitative researchers, Stake (1995) characterized constructivism as an approach that has at its center “the belief that knowledge is constructed rather than discovered” (p. 99). The two major frameworks of discovery I used in carrying out this study were the Vygotskian constructivist concepts of the “zone of proximal development” (Vygotsky, 1934/1986) and “scaffolding” (Bruner, 1975). In a similar vein to contemporary researchers’ critiques of formulaic, ineffective writing instruction that neglects the needs, perspectives, and capabilities of individual students – often in the interest of preparing them to handle the task demands of high stakes assessments (Hillocks, 2002; McCutchen, 2006; Pritchard & Honeycutt, 2006; Schultz, 2006; Smagorinsky, 1994) – Vygotsky “expressed concerns about intelligence testing of children, arguing that formal testing was unlikely to capture the ways in which children respond to real world situations,” a concern that led subsequent theorists to assert that such assessments lack ecological validity (Tudge & Scrimsher, 2003, p. 210). Vygotsky, and researchers and practitioners who have subscribed to his views of teaching and learning, believe that a learner’s “actual” level, that is, what the learner can do independently, “is not a true or useful (or fair) measure of ability,” and that, especially in the current climate which privileges high stakes assessments, we do not really know what our students are, and are not, truly capable of (Everson, 1991, p. 11).

Proclaiming “[w]hat the child can do in cooperation today he can do alone tomorrow,” Vygotsky (1934/1986) criticized the instructional practices of his day which, very much like the ineffective writing instruction described above, took a deficit

approach to instruction rather than seeking to build upon what learners already know and can do with “slight assistance” in the form of “the first step in a solution, a leading question, or some other form of help” (p. 187-188). Bruner (1975) termed such assistance “scaffolding.” In cooperation with a more knowledgeable other, Vygotsky found that younger children were able to successfully perform tasks with some support that older learners were able to complete independently. Vygotsky described this “discrepancy between a child’s actual mental age and the level [the child] reaches in solving problems with assistance” as the child’s “zone of . . . proximal development” (p. 187).

The data from the most recent NAEP writing assessments (1998, 2002, 2007, 2011), as well as data from other quantitative studies of secondary students’ argumentative writing capabilities, certainly provide researchers and practitioners with valuable information that can inform instructional practice, most notably for me, knowledge as to the specific audience-related task demands of argumentative writing that present secondary students with the greatest difficulty – warranting arguments, providing effective supporting data, and handling opposition (McCann, 1989; Knudson, 1992; Crammond, 1998). All of these studies, however, measure only actual levels of performance. I undertook this study because I was interested in learning whether young writers, if provided with the “considerable instructional support” McCutchen (2006) claimed was necessary in order for them to engage in “conceptual planning,” were capable of composing argumentative essays in which they effectively handle audience-related tasks demands. The present study therefore attempted to provide scaffolds that would enable me to create a ZPD with each participant, and in doing so, to collect data on

participants' performances on tasks at proximal levels, territory that Graham (2006) has described as being "the most critical region of instructional sensitivity at which knowledge advancement can take place" (p. 214). In order to assess "actual" performance, participants also wrote an "independent" essay under non-protocol conditions.

Sixth-Grade Writers

I decided to work with sixth-grade participants in conducting the present study for a number of reasons. First among these is that sixth-grade writers have been studied by other researchers whose investigations are highly relevant to this study, most notably those conducted by Bereiter and Scardamalia (1987), McCann (1989), Knudson (1992), and Crammond (1998). Bereiter and Scardamalia determined that, as early as sixth-grade, writers given sufficient instructional support are capable of engaging in knowledge transforming. Based on the findings of their investigations of grade-level differences in secondary students' argumentative writing abilities, McCann and Knudson concluded that although sixth-grade writers struggled with audience-related task demands, and particularly with warranting arguments, they nevertheless appeared to be at a stage in their development where they could potentially improve their performances on argumentative writing tasks if given appropriate instruction. Thus, in the context of providing scaffolded instruction in an argument model with the aim of enabling participants to engage in knowledge transforming, sixth-grade writers appear to be at a stage of development Vygotsky (1934/1986) has described as a "ripe" period (p. 188). Ideally, students at this stage would participate in NAEP writing assessments, but

unfortunately, they do not, and thus no broad-based data on this critical population has been collected.

Also on the subject of readiness, Everson (1991) claimed that by age seven, children become capable of going beyond ego-centric speech, and possess inner and social speech, thus enabling them to decenter and consider the perspectives of others. This suggests that sixth-grade writers, who are typically eleven years of age, would be capable of moving beyond their “personal view of reality” (Kroll, 1978, p. 279), and thus able to enter into “a state of identification between persuader and audience member” (p. 16) which Borchers (2002) identified as being essential to effective persuasion. Wells (2000) maintained that by the time learners reach middle school, they are capable of learning and applying theoretical frameworks, and thus “the development of theoretical knowing should be given high priority in the middle years of schooling and beyond, once basic literacy and numeracy are well established” (p. 70).

My decision to study sixth-grade writers was further informed by McCutchen’s (2006) observation that most learners are fluent in the physical act of transcription by age ten, and thus participants in this study, all of whom were eleven, did not experience difficulty with writing tasks due to issues related to the physical act of writing. I predicted, however, that these sixth-grade participants would nevertheless struggle with the mental processes associated with text generation as reported by McCutchen (2006) which turned out to be the case.

In selecting sixth-grade writers to serve as participants for the present study, I attempted to connect the findings of this study with findings from other studies of the argumentative writing abilities and problem solving strategies of sixth-grade writers. I

was also able to proceed with a degree of confidence that potential participants were cognitively ready to benefit from the intervention instruction, and would not experience problems with writing tasks due to difficulties associated with the physical act of writing. I worked with the teachers of potential participants in selecting participants for the present study that met these and other relevant criteria. My plans for selecting the specific participants who took part in this study will be discussed in Chapter 3.

The Toulmin Model of Argument and the SEE Model

In studying the effects of scaffolded instruction in the Toulmin (1958/2003) Model of Argument on the problem solving strategies of four sixth-grade writers composing argumentative essays, I compared the apparent effects of the intervention instruction to participants' understandings and performances based on a model they have previously received instruction in and used regularly in their reading-language arts classes – the SEE model. SEE, an acronym for “Statement, Examples, Explanation,” is typical of the “simplistic pedagogy” that is “linear and prescriptive” described by Pritchard and Honeycutt (2006) wherein a teacher teaches the model as a series of steps to be followed in the creation of an essay that contains all required components in the order that they are to appear in the final product. Instruction typically involves the study of sample essays of varying quality as assessed by a rubric used in conjunction with a state-mandated exam. The goal of instruction is to coach students as to how to produce essays like those receiving passing scores, and is thus purely imitation-driven.

This instruction is also typical of the ineffective writing instruction critiqued by Smagorinsky (1994) that consists of the study of model essays combined with instruction in general procedures, an approach that he claimed “puts the great burden of learning

how to write on students, who are apparently not up to the task” (p. 361). Based on the “ACE” model, an acronym for “Answer the question-Cite examples-Elaborate,” which was created by a resource specialist in the interest of improving students’ performances on timed essays composed as a part of a state-mandated assessment (Miller, 2006), SEE (Statement, Examples, Explanation) is also typical of curricula Schultz (2006) claimed “encourage[d] narrow and formulaic writing, and the teaching of writing merely as a skill” (p. 359). Despite not being empirically tested, ACE and SEE were embraced by the state department of education, promoted on the state department website, and incorporated into middle and high school curricula. High school students I recently worked with claim to have been taught SEE and ACE in middle school language arts classes. Nystrand (2006), in reviewing research initiatives in writing from the past several decades, claimed that “[e]mpirical writing research ... was initially fueled by efforts to understand the nature of writing as a prerequisite to improving instruction” (p. 21). Rather than being empowered by formulaic heuristics such as SEE and ACE, which are aimed at simplifying a cognitively complex task by attempting to take the difficult and messy work of problem solving out of the learning process, teachers are actually put in a position of disadvantage as they try to implement such tools of Pritchard and Honeycutt’s (2006) “simplistic pedagogy.” I believe that supporting classroom practitioners in the difficult work they do must begin with providing them with effective, research-based practices.

In addition to typifying ineffective writing instruction, SEE (Statement, Examples, Explanation) is a “simple framework,” which Hayes (2006) defined as one that “may consist of nothing more than a brief list of elements or features” (p. 35).

Writers instructed in the SEE model pose and answer the following questions: “What is my statement?,” “What examples can I think of to support my statement?,” and, “How can I explain how these examples support my statement?”. Products are to be organized accordingly, beginning with a statement (thesis or position), followed by supporting examples, and ending with explanations as to how these examples are related to the statement. As a part of “simplistic pedagogy” that is “linear and prescriptive” (Pritchard & Honeycutt, 2006, p. 276), SEE cues for knowledge telling and supports the view of “writing as recitation” that Hillocks (2011) lamented has too long dominated writing instruction in our nation’s classrooms. The complex problem solving associated with the knowledge transforming strategy is not accommodated by this model, and may even be said to be circumvented by it.

The Toulmin model, on the other hand, is a “complex framework,” one in which relationships between elements “are represented diagrammatically by lines connecting the related elements” and furthermore uses arrows “to indicate the direction of the relation or a label to indicate its type” (Hayes, 2006, p. 35). The workings of the Toulmin model are rehearsed in detail in Chapter 2 of this study. The relevance of the Toulmin model to the rationale for the present study is that, unlike SEE (Statement, Examples, Explanation), not only does the Toulmin model accommodate knowledge transforming, it demands it. It is a complex framework designed to facilitate a complex process. Rather than eliciting instruction that is product-based and product-driven, as the ineffective writing instruction that combines imitation of model essays with instruction in general procedures does – the kind of formulaic instruction that SEE exemplifies – the Toulmin model inspires instruction that is process-based and process-driven as writers

problem solve argumentative writing task demands. Rather than following a formula, writers engage in inquiry.

In describing the process through which a less knowledgeable learner is guided through his or her “zone of proximal development” (ZPD) by an individual with some expertise, Vygotsky (1934/1986) argued that, in progressing through the ZPD, “it is necessary to possess the means of stepping from something one knows to something new” (p. 187). The intervention instruction in the Toulmin model, and the scaffolding provided by the intervention protocol, were intended to reduce cognitive load and facilitate knowledge transforming. In the present study, these were “the means.” The ability to problem solve the audience-related task demands of argumentative writing – specifically, warranting arguments, providing effective supporting data, and handling opposition – was intended to be the “something new.” In order to create a ZPD, I had to build upon the “something one knows,” and therefore, it was necessary for me to study how students understood and used SEE. In analyzing the effects of the intervention instruction, I compared participants’ processes and products before and after the intervention instruction while working under both protocol and non-protocol conditions. The design of the study, which I discuss in some detail in the overview of the method below, also permitted me to assess the effects of the intervention on participants’ performances at actual levels (the level at which they functioned when they composed the “independent essay” at the conclusion of the intervention and prior to the posttest), compared to their performances at proximal levels (when they composed pre- and posttest essays with the support of the intervention protocol).

Research Questions

According to Stake (1995), case study researchers attempt to make meaning by searching for patterns that may be newly discovered in the process of carrying out the research, or, as is the case with the present study, “known in advance, drawn from the research questions, serving as a template for analysis” (p. 78). The research questions for the present study come directly from the findings of researchers who established that the audience related task demands of argumentative writing – warranting claims, providing convincing supporting data, and addressing opposition – comprise the greatest areas of difficulty for secondary students (Burkhalter, 1995; Crammond, 1998; Knudson, 1992; McCann, 1989). A central question of the present study is, What are the effects of scaffolded instruction in the Toulmin Model on the problem solving processes of four sixth grade writers composing arguments? The instruction I provided focused on building a schema that aided participants in transitioning from the simple, knowledge telling strategies associated with SEE (Statement, Examples, Explanation) to the complex, knowledge transforming strategies facilitated by the Toulmin model. The specific research questions, drawn from the literature, are:

1. Does scaffolded instruction in the Toulmin model improve the overall quality of participants’ argumentative essays?
2. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of warranting arguments?

3. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of providing convincing supporting data?
4. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of anticipating and responding to opposition?

Definition of Key Terms and Relevance to the Study

Rhetoric/ Persuasion / Argument / Audience Authenticity

In Book I, Chapter 2 of *The Art of Rhetoric* (1991), Aristotle famously defined rhetoric as “the faculty of discovering all the available means of persuasion in any given situation” (p. 74). According to Corbett and Connors (1999), “rhetoric has traditionally been concerned with those instances of formal, premeditated, sustained monologue in which a person seeks to exert an effect on an audience” (p. 1).

Borchers (2002) described persuasion’s rhetorical aims, defining it as the use of “verbal and visual symbols of a culture – as well as audience analysis – to affect the attitudes of an audience member” and in so doing to create “a state of identification between persuader and audience member” (p. 16). According to Lunsford, Ruskiewicz, and Walters (2010), the persuader achieves this identification with the audience in an effort to “change a point of view or to move others from conviction to action” (p. 7).

Lunsford, Ruskiewicz, and Walters (2010) conceived of argument somewhat differently, stating that “the point of argument is to use evidence and reason to discover some version of the truth ... lead[ing] an audience toward some conviction – an agreement that a claim is true or reasonable or that a course of action is desirable” (p. 7).

Mapping this definition onto the Toulmin (1958/2003) model, “evidence” is convincing and relevant data, “reason” correlates with warrants that connect data to the claim, and the “version of the truth” is the claim arrived at by the writer.

Although NAEP and other studies use the term “persuasive” to describe the type of writing tasks students are asked to complete, these tasks may be more accurately termed “argumentative.” This shift in terminology is reflected by The Common Core State Standards (2011). Hillocks (1995) defined an argument using Toulmin terms, describing it as “a position with supporting data and other statements that tie the two together” (p. 118). The most essential type of statement tying position to supporting data is the warrant. The ability of participants to warrant arguments was an important focus of the present study as warrant use is a clear indicator that a writer has moved from knowledge telling to knowledge transforming.

All essays composed by participants took the form of letters written to the principal of the middle school they attend. In the interest of motivating participants and providing them with an authentic audience, I told participants that the principal had agreed to read the letters they wrote (and he did so), all of which addressed topics that had been issues at the school during the school year. Their familiarity with the principal, and desire to convince him of the validity of their perspectives, drove the setting of rhetorical goals as revealed by the intervention protocol transcripts. Evident in the transcripts is a shift from simply attempting to “create a sense of identification” (Borchers, 2002) to bring about a change in perspective – a hallmark of persuasion – to trying to succeed in using “evidence and reason to discover some version of the truth ...

lead[ing] an audience toward some conviction” – the more challenging goal of argumentation (Lunsford, Ruszkiewicz, and Walters, 2010).

“Stage Model” Approaches to Writing / Simple Frameworks / The SEE Model

A “stage model” understanding of the composing process views writing as taking place in lockstep, linear fashion. Instruction guided by stage model approaches focus on teaching a given model as a series of steps and having writers follow them in order as they work through a piece of writing. Two notable examples of a stage model approach to writing are Rohman’s (1965) “Pre-Write/Write/Re-Write” and Britton et al.’s (1975) “Conception/Incubation/ Production” (Flower & Hayes, 1981, p. 376).

Hayes (1996) coined the term “frameworks” to describe “explanatory structures ... designed to help us think about complex processes or situations,” and defined “simple frameworks” as those that “consist of nothing more than a brief list of elements or features” (p.35).

The SEE model (Statement, Examples, Explanation) is a simple framework that supports a stage model approach to instruction. Students are asked to respond to a prompt or question by making a “Statement” of their position, providing “Examples” to support their statements, and then “Explain” how their examples support their statements.

Problem Solving / Cognitive Process Models / Complex Frameworks

Arguing that linear stage models of the writing process do not adequately explain what writers do in the act of composing, Flower and Hayes (1977) asserted instead that writing should be viewed as problem solving, a field of study that “explores the wide array of mental procedures people use to process information in order to achieve their goals” (p. 450).

Flower and Hayes (1981) devised their cognitive model of the composing process, which conceives of writing as consisting of planning, translating, and reviewing, based upon the examination of protocols performed by writers at work. Rather than happening in lockstep stages, Flower and Hayes discovered that the composing process is driven by goals that demand that the writer move between components of the process throughout composing – a phenomenon that led them to describe the writing process as “recursive.”

The recursiveness of the writing process demands a more flexible representation of the various moves writers make. To this end, Hayes (1996) coined the term “complex framework” to describe representations of problem solving processes in which “some or all of the relations among elements” are “represented diagrammatically by lines connecting the related elements” and use “an arrow to indicate the direction of the relation ...” (p. 35).

Knowledge Telling / Knowledge Transforming / Conceptual Planning

Bereiter and Scardamalia (1987) documented differences in the writing processes of novices and experts, and discovered what they termed “two models of composing”: “knowledge telling” and “knowledge transforming.”

In knowledge telling, a writer retrieves topic content from his or her long-term memory and tests it for appropriateness. If the material is deemed appropriate, the writer records it, usually in the form of a sentence. As content is added, the writer’s conceptualization of the piece is altered by the emerging text, and this process of retrieving, evaluating, and recording material the writer deems appropriate continues until he or she has exhausted all relevant ideas, at which time, once all ideas have been translated into sentences, the writer considers the piece to be complete. Knowledge

telling resembles conversation in that it requires no planning. Generation of content is based on appropriateness to topic, but not audience; therefore, writers using the knowledge telling strategy are less successful in meeting rhetorical demands of argumentative writing than those who use knowledge transforming.

Knowledge transforming, on the other hand, involves engaging in problem solving prior to and throughout the act of composing. Writers employing the knowledge transforming strategy identify specific content and rhetorical task demands and solve associated problems before writing. McCutchen (2006) coined the term “conceptual planning” to describe this kind of planning that problem-solves all task demands prior to generating a draft. Unlike knowledge telling which does not require planning, knowledge transforming involves extensive planning to meet content and rhetorical goals. Writers in the knowledge transforming mode alter content to better meet the rhetorical goals they have set (i.e., those related to warrants, data, and opposition).

Zone of Proximal Development / Scaffolding / Scaffolded Instruction / Direct Instruction

In *Thought and Language*, Vygotsky (1934/1986) reported that younger learners could, with some support from an adult, solve problems that older and more capable learners could solve independently. Noting that this capability was subject to considerable variation from learner to learner, Vygotsky coined the term “the zone of proximal development” to describe the “discrepancy between a child’s actual mental age and the level he [or she] reaches in solving problems with assistance” (p. 187).

Researchers and practitioners have noted that the ZPD can be accessed for the very practical function of “mediating misconceptions and consolidating understandings” (Lee

& Smagorinsky, 2000, p. 5). As a tool for modeling complex problem solving over time, however, the ZPD has the potential for advancing a learners' problem solving capabilities. Koulzin (1986) explained that "final product of this child-adult cooperation" created by the ZPD "is a solution, which, being internalized, becomes an integral part of the child's own reasoning" (p. xxxv). Analysis of protocols from the present study focused on how, and to what extent, the Toulmin model impacted participants' "reasoning" while problem solving argumentative writing task demands.

Also in *Thought and Language*, Vygotsky (1934/1986) claimed that by offering a less able learner some "slight assistance" in the form of "the first step in a solution, a leading question, or some other form of help" (p. 187), a more capable other (an adult or another child) can create a ZPD. Bruner (1975) coined the term "scaffolds" to describe these instructional supports.

Instruction designed for the present study provided participants with scaffolds as they learned about the Toulmin model, and intervention protocols were used to scaffold general procedures and assess goal-setting before, during, and after composing argumentative essays. Participants' performances before and after instruction will be compared and analyzed at length in Chapter 4.

Unlike the ineffective prevailing practices in writing instruction that combine instruction in models with general procedures and "rarely recognize writing as problem solving" (Bruer, 1997, p.219), the scaffolded instruction I designed for the present study constituted "effective teaching" described by Hillocks (2011) as "the kind of teaching in which students learn to do, with support, what they cannot or do not already do by themselves" (p. 1). The aim of the present study was to determine if sixth-grade writers,

who typically cannot effectively handle the audience-related task demands of argumentative writing (i.e., warranting, generating convincing data, addressing opposition) could do so if guided in the use of an argument model that facilitates knowledge transforming – the Toulmin (1958/2003) Model of Argument. Intervention protocols served as scaffolds to support participants toward the highest levels of proximal performance through the creation of a ZPD. This scaffolded instruction is described in detail in Chapter 3 of the present study.

I refer to the instruction I provided as “scaffolded” instruction throughout the present study (as described immediately above). In citing the work of some researchers, I use the term “direct instruction” – a term that has had various meanings over a period of several years in the research literature. According to Rosenshine (2008) “direct instruction” has often been used generically to describe instruction characterized by the presentation of new material to students, and in some cases, particularly ineffective presentation of material. This meaning of direct instruction describes the very type of interactions that I wish to avoid in the present study as it typifies the ineffective writing instruction I discuss at length in the first two chapters. The researchers whose work I cite use the term “direct instruction” to mean “[i]nstructional procedures used by teachers when they taught cognitive strategies to students” (Rosenshine, p. 1). Although such instruction is geared toward helping learners problem solve, I refrain from referring to it as “scaffolded” for two reasons: first, I wish to be true to the terminology used by the researchers themselves, and second, I could refer to such instruction as “scaffolded” only if these researchers created a ZPD with participants which none of them reported having done.

Vygotskyan Levels of Performance

“Actual performance” refers to a learner’s performance independent of any assistance. “Proximal performance” refers to a learner’s performance with some assistance from a more knowledgeable, capable other. The present study assessed proximal performance as participants composed two argumentative essays (pre- and post) with the support of the intervention protocol. Actual performance was assessed in conjunction with the analysis of an argumentative essay composed independently (i.e., under non-protocol conditions).

Intervention Protocol

Think aloud protocols typically used in process studies require participants to articulate their thoughts while tackling writing tasks free from any cueing from the researcher aside from general solicitations as to what the writer is thinking (Steinberg, 1986). Alternatively, Swanson-Owens and Newell (1994) devised what they termed “intervention protocols” in the interest of probing writers about their thought processes and sources of knowledge they bring to writing tasks. The specific type of intervention protocol selected for the present study – “Planning and Retrospective Accounts Collected During the Problem-Solving Process” – did not ask writers to provide think alouds throughout the writing process, but rather posed questions before and after composing, and during composing when the writer signaled that he or she had just met a goal. Although they vary in this sense from those described by Steinberg (1986), I nevertheless refer to writer’s responses to protocol questions and any other interactions they had with me (or themselves) as they composed essays as “think alouds.”

Limitations

The present case study (Stake 1995, 2010) is characterized by a number of limitations shared by many qualitative studies. First, participants were not randomly selected but rather were purposively selected based upon criteria determined by me. Second, participants were enrolled in two intact classes at one of two middle schools where I was employed as a resource teacher, and thus the sample was a convenience sample. Third, only four participants were selected, and thus the sample size for this study was very small and did not permit any generalizations to be made. Fourth, pragmatic considerations limited me to a total of six weeks to conduct the study, and four weeks to provide instruction. Furthermore, although I was able to conduct member checks for written products, due to time limitations I was not able to do so for protocol transcripts. Fifth, although intervention protocols and materials used in instruction were uniform, I may have been inconsistent in delivering instruction and/or in conducting and/or analyzing protocols. Although I endeavored to provide identical instruction to all participants using the same materials, due to the nature of the investigation – a examination of how individual writers problem solve in zones of proximal development created in collaboration with me – what transpired in the course instruction and participation in the intervention protocols varied depending on the knowledge participants possessed and the directions they led. Finally, all data collected in this study was verbal data gathered from interview responses, intervention protocols, and essays composed by participants, all of which may leave findings open to the assertion that they are subjective and/or, despite efforts on my part to differentiate between pre-existing strategies and strategies gained as a result of the intervention, that effects on the problem-

solving strategies used by participants while composing independent and posttest essays could be attributed to sources other than the intervention. In an effort to address these factors, I consulted with an expert panel in creating instructional materials and protocol scripts, and made use of an independent co-rater in scoring essays and analyzing protocol transcripts.

Basic Assumptions

1. It was assumed that I could adequately teach the Toulmin model to four sixth-grade writers during six sessions held over the course of four weeks.
2. It was assumed that the four participants selected for the study could engage in metacognitive dialogue about their writing before, during, and after composing.
3. It was assumed that the intervention protocols I designed could enable me to create a ZPD with participants and collect data about their goal setting and writing processes in a manner that would not disrupt these activities, and could possibly reduce cognitive load.
4. It was assumed that the knowledge transforming strategy was superior to the knowledge telling strategy in enabling participants to handle the audience-related task demands of argumentative writing.
5. It was assumed that the Toulmin-based rubric devised by McCann (1989) and the NAEP (2007) 8th Grade Persuasive Rubric were appropriate tools for assessing the quality of participants' argumentative essays produced in conjunction with this study.

Overview of the Method

To address the research questions of this study, four sixth-grade writers, two of whom were identified as “high-ability” (one male and one female) and two who were identified as “average-ability” (one male and one female) wrote a pretest argumentative essay while providing a think aloud. After receiving six units of scaffolded instruction in the Toulmin’s (1958/2003) Model of Argument, the four participants wrote an “independent essay” (under non-protocol conditions), and a posttest argumentative essay while providing a think aloud (Appendix D). Essays were scored by me and a co-rater using the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E) and the Toulmin-McCann (1989) rubric (Appendix F). Intervention protocols were coded by me and the co-rater using a coding scheme that indicated the level of complexity of each original segment, as well as the type(s) of goal(s) reflected in each codeable segment – content goals, procedural goals, and rhetorical goals (Appendix H). I compared the problem-solving strategies used by participants while performing pretest and posttest tasks. Additionally, I compared these essays composed under protocol conditions to the independent essays produced under non-protocol conditions for the purpose of gauging differences in proximal as opposed to actual performance.

The intervention designed for use in the present study aimed at providing an alternative to prevailing instruction in writing, which has been described by Pritchard and Honeycutt (2006) as comprising a “simplistic pedagogy” that is “linear and prescriptive,” (p. 276), and denounced by Schultz (2006) as “formulaic” and concerned with “the teaching of writing merely as a skill” (p. 359). The SEE (Statement, Examples, Explanation) model, which participants regularly received instruction in as a part of

regular instruction in their reading-language arts classes, typifies a “missionary” view of knowledge (Wells, 2000). Rather than coaching writers to follow a formula, the scaffolded instruction in the Toulmin model and intervention protocols I provided were used to create a Zone of Proximal Development (ZPD) with participants that engaged them in knowledge transforming as they problem solved argumentative writing task demands. Wells has described “writing approached in this manner” as “an occasion for knowledge building as the writer both tries to anticipate the likely response of the envisaged audience and carries on a dialogue with the text being composed” (p. 72). Providing young writers with support designed to help them problem solve audience-related task demands was intended to reduce cognitive load as they worked to set and meet content, procedural, and rhetorical goals. This support enabled them to “decenter,” freeing them from being “imbedded in their personal view of reality” (Kroll, 1978, p. 279), and successfully “use evidence and reason to discover some version of the truth ... lead[ing] an audience toward some conviction – an agreement that a claim is true or reasonable or that a course of action is desirable” (Lunsford, Ruszkiewicz, and Walters, 2010, p. 7).

Significance of the Study

I used case study methodology (Stake 1995, 2010) in concert with an argumentative writing intervention protocol to collect data relevant to the problem solving strategies of the four sixth-grade writers participating in the present study. I collected this data with the aim of analyzing how, and to what extent, each participant’s problem solving processes were affected by the six units of scaffolded instruction in the Toulmin (1958/2003) Model of Argument he or she received. The scaffolded instruction

used in the present study was informed by the constructivist, Vygotskian principles of scaffolding (Bruner, 1975) and the zone of proximal development (Vygotsky, 1934/1986). The results of this study will provide researchers and classroom practitioners with information about how scaffolded instruction in the Toulmin model – a complex framework that engages writers in knowledge transforming — impacted four students’ problem solving processes. Additionally, researchers and practitioners will be able to compare these processes to problem solving carried out in association with a simple framework typically used in writing instruction that is represented in the present study by the SEE model – one which may be seen as limiting students’ problem solving to knowledge telling.

The use of a case study methodology (Stake 1995, 2010) in this study enabled me to generate a highly detailed picture of participants’ understandings of a simple framework (SEE), how that framework informed their problem solving strategies, and how they incorporated a complex framework – the Toulmin model – into their existing schemas for writing argumentative essays. Of particular interest were the audience-related task demands of warranting claims, providing effective supporting data, and handling of opposition. An extensive analysis of the essays produced by participants at proximal and actual levels permitted me to make several insights into the effects of the scaffolded instruction in the Toulmin model participants received.

Summary

In this chapter, I provided a rationale for the present study, citing the inability of secondary students to write effective argumentative essays – a finding that perhaps has its origin in ineffective writing instruction as well as in the inherent difficulty of

argumentative writing tasks. I then briefly rehearsed findings from studies of secondary students' argumentative writing capabilities conducted by NAEP and independent researchers. I also described ineffective writing instruction, and discussed scaffolded instruction in the Toulmin model as a potentially more effective instructional alternative. Finally, I provided an overview of the terms, tools, and procedures associated with the present study, as well as its theoretical framework and potential significance. In Chapter 2, I will discuss research studies of secondary students' argumentative writing capabilities in greater detail, and closely examine cognitive process models and constructivist theoretical frameworks that inform the present study.

CHAPTER II. REVIEW OF THE LITERATURE

Introduction

In Chapter 1 of this study, I established that our nation's secondary students do not write effectively in the argumentative mode despite the importance of argumentative writing in academic, workplace, social, and personal contexts (Crowhurst, 1988; Knudson, 1992; McCann, 1989; National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salah-Din, Persky, & Miller, 2008; Schneider, 2008; Schultz & Laine, 1987; White & Venneman, 2000; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010; Partnership for Assessment of Readiness for Colleges and Careers, 2013). I briefly cited research that suggests that secondary students' difficulty with argumentative writing is likely rooted in two major obstacles – the cognitive difficulty of argumentative tasks (Burkhalter, 1995; Crammond, 1998; Golder & Croirier, 1994; Graham, 2006; Kellogg, 1994; Knudson, 1992; Kroll, 1978; McCann, 1989; McCutchen, 2006), and the failure of prevailing practices in the teaching of composition to provide young writers with effective procedures for handling the complex task demands of argumentative writing (Applebee, 1986; Applebee, Langer, Jenkins, Mullins, & Foertsch, 1990; Bereiter & Scardamalia, 1987; Everson, 1991; Hillocks, 1986; Hillocks, 1995; Hillocks, 2011; Langer & Applebee, 1987; McCutcheon, 2006; Prichard & Honeycutt, 2006; Schultz, 2006; Smagorinsky, 1994; Swanson-Owens & Newell, 1994).

Studies of secondary students' argumentative writing capabilities have revealed that the greatest areas of difficulty for young writers are the audience-related task demands of warranting claims, providing effective supporting data, and predicting and

responding to opposition (Burkhalter, 1995; Crammond, 1998; Knudson, 1992; McCann, 1989). The present study examined the effects of providing four sixth-grade writers with scaffolded instruction in the Toulmin (1958/2003) Model of Argument. In carrying out this study, I was particularly interested in learning whether, and to what extent, scaffolded instruction in the Toulmin model might facilitate knowledge transforming (Bereiter & Scardamalia, 1987), thus enabling participants to better handle audience-related task demands both under protocol conditions, wherein I engaged participants in their zones of proximal development by cueing problem solving as they composed argumentative essays, and under non-protocol conditions, wherein participants composed essays independently. In doing so, I endeavored to gain a better understanding of participants' performances at what Vygotsky (1934/1986) termed "actual" and "proximal" levels as they worked to build more effective schemas for argumentative writing.

In this chapter, I will examine theoretical frameworks and data from existing research relevant to the present study. The aim of this study was to determine whether and to what extent scaffolded instruction in the Toulmin (1958/2003) Model of Argument affected the problem solving processes of study participants. Researchers studying writing and cognition have introduced various cognitive models of the writing process that provide frameworks for understanding how writers problem solve writing task demands. I used this knowledge base in planning instruction and evaluating protocols and written products, and thus will begin this literature review with an overview of cognitive models of the writing process in which I discuss how these models informed various facets of the present study.

Having examined relevant research findings about cognitive process models and explained their relevance, I will address the issue of how the cognitive demands of writing, and particularly those associated with argumentative writing, impact performance on writing tasks. I will begin by providing a more expansive discussion of the cognitive demands of argumentative writing that highlights the strategies of knowledge telling and knowledge transforming. In light of the difficulty young writers experience when writing in the argumentative mode, some researchers and practitioners have advocated reducing cognitive load by providing students with instructional interventions aimed at facilitating planning at the prewriting stage. I will examine the most relevant of these studies, and relate researchers' findings and suggestions to the present study.

Following this overview of what cognitive science has contributed to our understandings of how writers write, and why writers experience difficulty with argumentative writing tasks, I will next review findings from the four most recent administrations of the NAEP writing assessment (1998, 2002, 2007, 2011) in greater depth. I will use this review to segue into a discussion of ineffective practices in the teaching of writing that dominate instruction in our nation's schools, and then describe more effective, researched-based alternatives to prevailing practice that informed the intervention instruction I designed for the present study.

I will then turn my attention to the Toulmin (1958/2003) Model of Argument. I will discuss how practitioners have used or have suggested using the Toulmin model in research and instruction, and how the Toulmin model may be understood in the context of cognitive process models (Flower & Hayes, 1981; Hayes, 1996; Kellogg, 1994). I will

endeavor to link cognitive process models, especially Bereiter and Scardamalia's (1987) knowledge telling and knowledge transforming strategies, to the Toulmin model. I will attempt to justify my selection of the Toulmin model based on my belief that it has the potential to serve as a framework for knowledge transforming, thus enabling participants to more effectively handle the audience-related task demands of warranting arguments, providing effective supporting data, and responding to opposition.

After a thorough discussion of the Toulmin (1958/2003) model and its potential for aiding young writers in developing more effective schemas for handling argumentative writing task demands, I will next rehearse research findings of independently conducted studies of secondary students' argumentative writing capabilities. Due to the vast number of studies investigating different facets of argumentative writing, I will focus on studies that feature the Toulmin model as this model served as the basis for the intervention instruction used in the present study. I have broken these Toulmin-based studies down into two categories: *product-oriented* studies that use the Toulmin model as a framework for evaluating the quality of essays produced by students at different grade levels and discussing areas of difficulty they experienced with argumentative writing tasks (Crammond, 1998; Knudson, 1992; McCann, 1989), and *process-oriented* studies that examine the effectiveness of the Toulmin model as a heuristic for teaching secondary students how to write argumentative essays (Lunsford, 2002; Yeh, 1998a; Yeh, 1998b).

Finally, I will discuss the Vygotskian constructivist concepts of "the zone of proximal development" (Vygotsky, 1934/1986) and "scaffolding" (Bruner, 1975) which comprise the theoretical framework for the present study, and which served as the basis

for planning the intervention as well as designing tools for data collection and analysis, most notably the intervention protocol that will be administered as participants compose pretest and posttest essays.

Problem Solving, Cognitive Models of the Writing Process, and the Toulmin Model

Citing the contributions of cognitive psychology to the field of education, Bruer (1993) claimed that these contributions served as a foundation for “a new theory of learning” in which an understanding of “how problem-solving behavior changes as students acquire new knowledge and strategies” could enable researchers to “look beneath actual or desired performances and describe the underlying mental processes” learners used, and subsequently “investigate how best to teach these processes” (p. 15). Bruer went on to discuss the pioneering work of Newell and Simon who, in their book, *Human Problem Solving* (1972), asserted that understanding learning in any domain must begin with “a detailed analysis of how people solve problems in that domain,” an endeavor which entails “discover[ing] the mental processes, or programs, that individuals use to solve a problem” (p. 12). Newell and Simon advocated the use of “think aloud” protocols that required subjects to articulate their thoughts aloud while solving a problem as a means of obtaining the data necessary to carry out such a detailed analysis.

The work of cognitive psychologists cast the findings of NAEP and other studies of secondary students’ writing capabilities in a new light. According to Kellogg (1994), cognitive scientists view pieces of writing, and particularly forms of writing such as argumentative essays that place many demands on the writer, as being more than merely indicators of how well an individual writes, but also as “a window into his or her thinking

ability” (p. 14). Writers who do not perform well on writing tasks are not problem solving task demands efficiently. Instruction that aims at improving writing must, therefore, improve thinking. Bruer saw in the methods and findings of cognitive psychologists, especially those related to expert performance, a means of improving classroom instruction in all disciplines:

If we understand the mental processes that underlie expert performance in school subjects, we can ask and answer other questions that are important for education. How do students acquire these processes? Do certain instructional methods help students acquire these processes more quickly or easily? Can we help students learn better?

(p. 14).

In the field of composition pedagogy, researchers must determine what demands certain writing tasks place on writers, and, by understanding what both expert and novice writers are capable of, design instruction that addresses how to negotiate these task demands in a manner that is developmentally appropriate. The present study used the creation of a zone of proximal development with each participant to pursue these ends, evaluating the effectiveness of the intervention instruction in the Toulmin model and its potential to positively impact research and practice in the field of writing instruction.

Prior to the cognitive revolution that Bruer (1993) described, writing pedagogy was dominated by the imitation of model essays, and descriptive models of the writing process as taking place in “stages.” Both the explication of an existing text, as well as a step-by-step process for how to compose a given type of essay, may be described as “stage model” instruction. Cognitive scientists who studied writing as a type of thinking

used think aloud protocols to create cognitive models of the composing process in part as a response to what they viewed as the ineffectiveness of stage model instruction, a view that is supported by several researchers (Applebee, 1986; Applebee, Langer, Jenkins, Mullins, & Foertsch, 1990; Bereiter & Scardamalia, 1987; Hillocks, 1986; Langer & Applebee, 1987; Swanson-Owens & Newell, 1994). Kellogg (1994) believed research using cognitive models of the writing process to be essential to advancing knowledge in the field of writing research, noting that these models “can become broadened to integrate and organize what is known about the act of writing” (p. 5).

The first, and perhaps most innovative and well-known, cognitive model of the writing process was published by Flower and Hayes (1981). Citing stage model approaches to writing such as Rohman’s (1965) “Pre-Write/Write/Re-Write” and Britton et al.’s (1975) “Conception/ Incubation/Production”, Flower and Hayes argued that these “stage descriptions of writing” are inadequate because they “model the growth of the written product, not the inner process of the person producing it” (p. 367). Seeking an answer to the question, “What guides the decisions writers make as they write?”, Flower and Hayes conducted protocol studies of the writing process over a period of five years, and came to the conclusion that writing, rather than being a linear series of stages, consists of processes that the writer may engage in at any time and that are goal-directed, hierarchical, and recursive. Flower and Hayes summed up their cognitive process theory of writing in the following “key points”:

1. The process of writing is best understood as a set of distinctive thinking processes which writers orchestrate or organize during the act of composing.

2. These processes have a hierarchical, highly embedded organization in which any given process can be embedded within any other.
3. The act of composing itself is a goal-directed thinking process, guided by the writer's own growing network of goals.
4. Writers create their own goals in two key ways: by generating both high-level goals and supporting subgoals which embody the writer's developing sense of purpose, and then, at times, by changing major goals or even establishing entirely new ones based on what has been learned from the act of writing. (p. 366)

Flower and Hayes' model consisted of three major components: a "task environment" consisting of "the rhetorical problem (topic, audience, exigency)" and the emerging text; the writer's long-term memory which the writer accesses for knowledge of topic, audience, and "writing plans"; and, most importantly, the process of writing itself which involves the separate but interdependent acts of *planning* (generating and organizing ideas, and setting goals); *translating* ideas onto the paper; and *reviewing* (evaluating and revising) text produced thus far. These three processes that make up the act of composing – planning, translating, and reviewing – are done under the guidance of a "monitor" which "functions as a writing strategist that determines when the writer moves from one process to the next" (p. 374). An illustration of the model appears below:

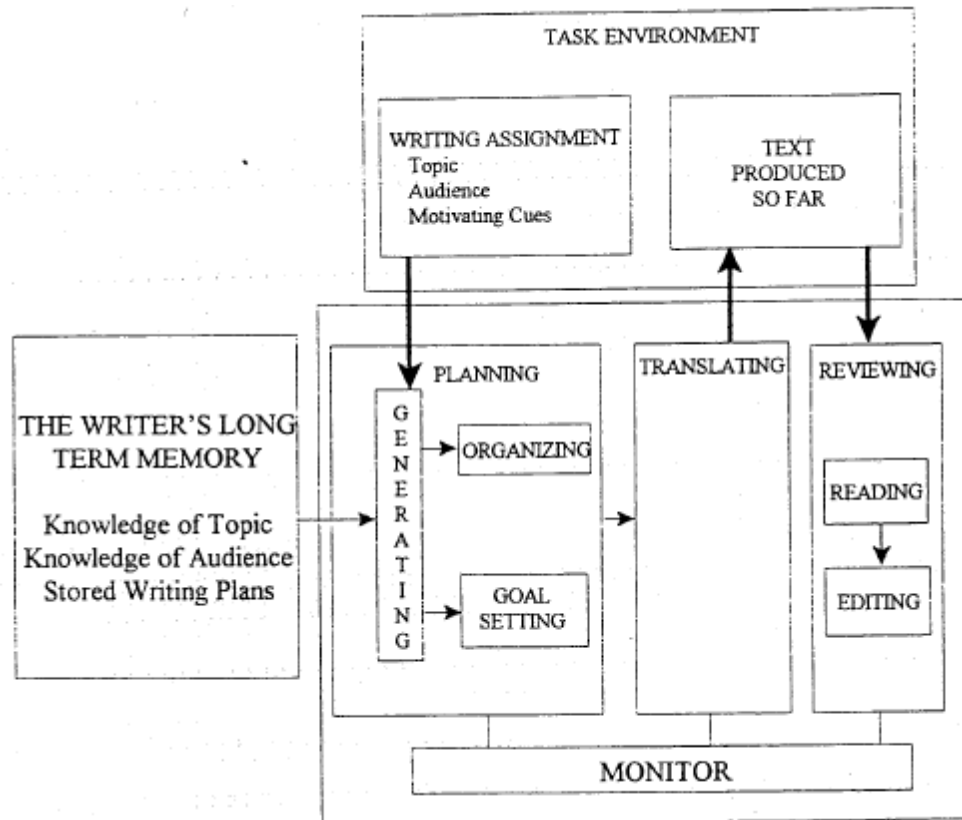


Figure 2. Flower & Hayes' (1981) cognitive model of the writing process.

The impetus for all problem solving is, of course, a problem to be solved. In the case of composing, the problem is some task that poses a rhetorical problem that the writer, given a topic, audience, and role, must “solve’ or respond to ... by writing something” (Flower & Hayes, 1981, p. 372). Defining the problem is a crucial aspect of the task environment according to Flower and Hayes as writers “only solve problems they define for themselves”, and, should their understanding of the problem be “inaccurate or underdeveloped,” they will be “unlikely to “solve’ or attend to the missing aspect of the problem” (p. 369). In the case of argumentative writing, as noted above, the aspect of the rhetorical problem that younger writers may either get wrong, or, more likely, do not address at all, are those task demands that deal with audience – warrants, effective supporting data, and handling of opposition. Along with Bruer (1993)

and many researchers who have carried out qualitative studies of the writing process, Flower and Hayes argue that an in-depth understanding of individual writers' writing processes may do much to inform instruction, claiming that "[o]ne major advantage of identifying these basic cognitive processes or thinking skills writers use is that we can then compare the composing strategies of good and poor writers. And we can look at writing in a much more detailed way" (pp. 367-368). The work of Flower and Hayes, and that of cognitive psychologists who came after, underscored the value of studying individual cases in the interest of advancing knowledge.

Bereiter and Scardamalia (1987) took on the task of documenting differences in the writing processes of novices and experts, and discovered what they termed "two models of composing": "knowledge telling" and "knowledge transforming". In the knowledge telling mode, a writer retrieves topic content from his or her long-term memory and tests it for appropriateness. If the material is deemed appropriate, the writer records it, usually in the form of a sentence. Bereiter and Scardamalia's knowledge-telling model appears below:

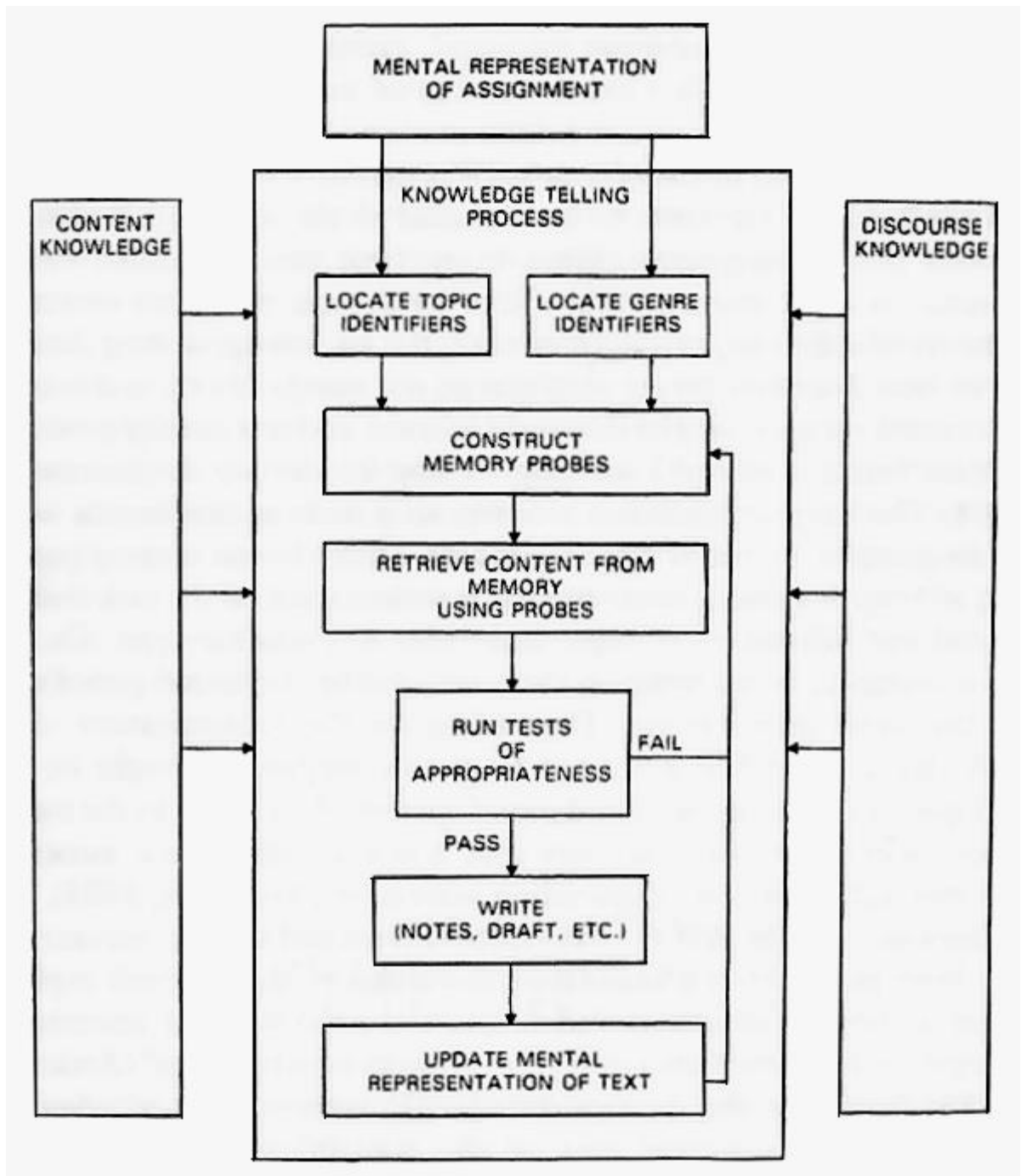


Figure 3. Bereiter & Scardamalia's (1987) knowledge-telling model.

Bereiter and Scardamalia described how writers “test” content material as follows:

an item of content, once retrieved, is subjected to tests of appropriateness. These could be minimal tests of whether the item ‘sounds right’ in relation to the assignment and to the text already produced or they could be more involved tests of interest, persuasive power, appropriateness to the literary genre, and so on. If the item passes the tests it is entered into notes or text and the next cycle of content generation begins. (p. 9)

As content is added, the writer’s conceptualization of the piece is altered by the emerging text, and this process of retrieving, evaluating, and recording material the writer deems appropriate continues until he or she has exhausted all relevant ideas, at which time, once all ideas have been translated into sentences, the writer considers the piece to be complete. Bereiter and Scardamalia (1987) related the knowledge telling strategy to the rhetorical problems posed by writing tasks, stating that knowledge telling “provides a natural and efficient solution to the problems immature writers face in generating text content without external support,” and “requires no significantly greater amount of planning or goal-setting than does ordinary conversation” (p. 9-10). In some instances, especially those where the writer is highly familiar with the content and task demands connected with a given piece of writing, using the knowledge telling strategy can produce a quality written product despite the fact that the writer did not systematically set goals and problem solve to achieve them.

In contrast to poor and/or immature writers who may be limited to using the knowledge telling strategy to transfer content material from their long-term memories directly to text, even when task demands require more of them, skillful and/or mature

writers who “actively rework their thoughts” engage in what Bereiter and Scardamalia (1987) termed “knowledge transforming.” In addition to using knowledge telling to generate, evaluate, and record relevant content material, writers who are actively employing knowledge transforming self-question and engage in internal negotiation in resolving content and rhetorical problems in a manner that permits “a two-way interaction between continuously developing knowledge and continuously developing text” (p. 12). The following diagram illustrates Bereiter and Scardamalia’s knowledge transforming model, which has the knowledge telling model as a component:

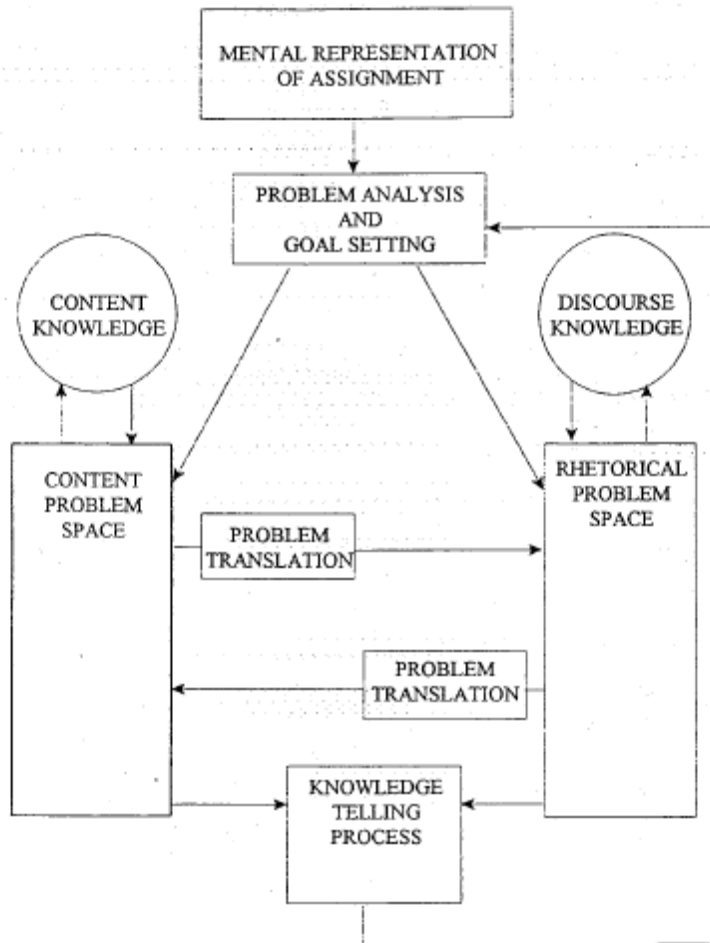


Figure 4. Bereiter & Scardamalia’s (1987) knowledge-transforming model.

Simply put, knowledge transforming involves setting goals and problem solving to meet those goals, and knowledge telling does not. With support in the form of doing think-alouds and peer teaching, Bereiter and Scardamalia reported a marked increase in the amount of reflective thinking shown by sixth-graders they studied, suggesting that, with effective instructional scaffolds, writers as young as sixth-graders are capable of knowledge transforming. Argumentative writing, with the demands it places on writers to address audience concerns, requires the kind of problem solving in the problem spaces of content and rhetoric that Bereiter and Scardamalia described. Thus, argumentative writing, due to the nature of its task demands, requires knowledge transforming in order to be deemed effective.

Kellogg (1994) incorporated the concepts of knowledge telling and knowledge transforming into his cognitive model of the writing process illustrated below:

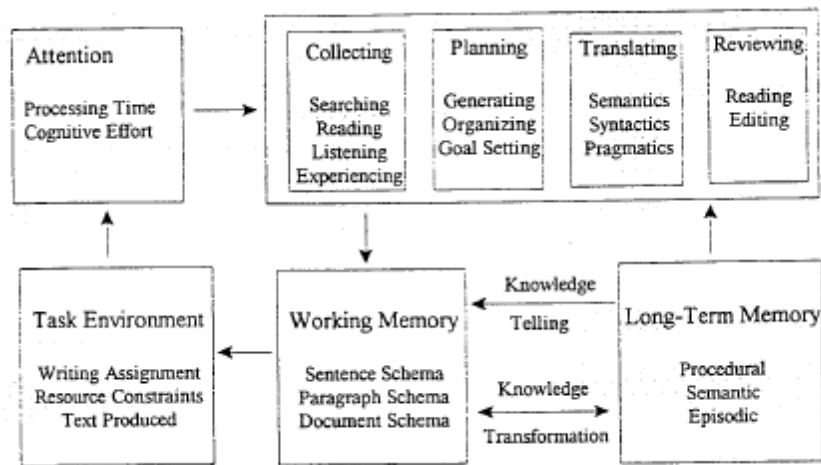


Figure 5. Kellogg's (1994) cognitive model of the writing process.

More than any researcher that came before him, Kellogg emphasized the role of working memory in composing. For Kellogg, knowledge telling is the process of moving potential material from the writer's long-term memory to his or her working memory, and

knowledge transforming entails accessing and negotiating material in working and long-term memory. To Flower and Hayes' (1981) cognitive process model, Kellogg added the category of "collecting" to the planning phase – a process that involves "gathering and scrutinizing consensual symbol systems and transforming the knowledge into personal symbols for subsequent use in thinking and writing" (p. 27). Kellogg also adds the important consideration of "attention" to his model, considering as incomplete any description or assessment of the writing process that does not account for the writer's available time to work on the piece as well as his or her level of motivation and effort invested.

In his updated version of the Flower and Hayes (1981) model, Hayes (1996), like Kellogg (1994), placed greater emphasis on the role of working memory but with one key difference. Whereas Kellogg adopted the view that only certain components of working memory were engaged when writers performed certain tasks (e.g., reading and translating draw on verbal working memory), Hayes viewed working memory as constantly available and flexible. Any aspect of working memory could be accessed while performing any component of a writing task, as illustrated below:

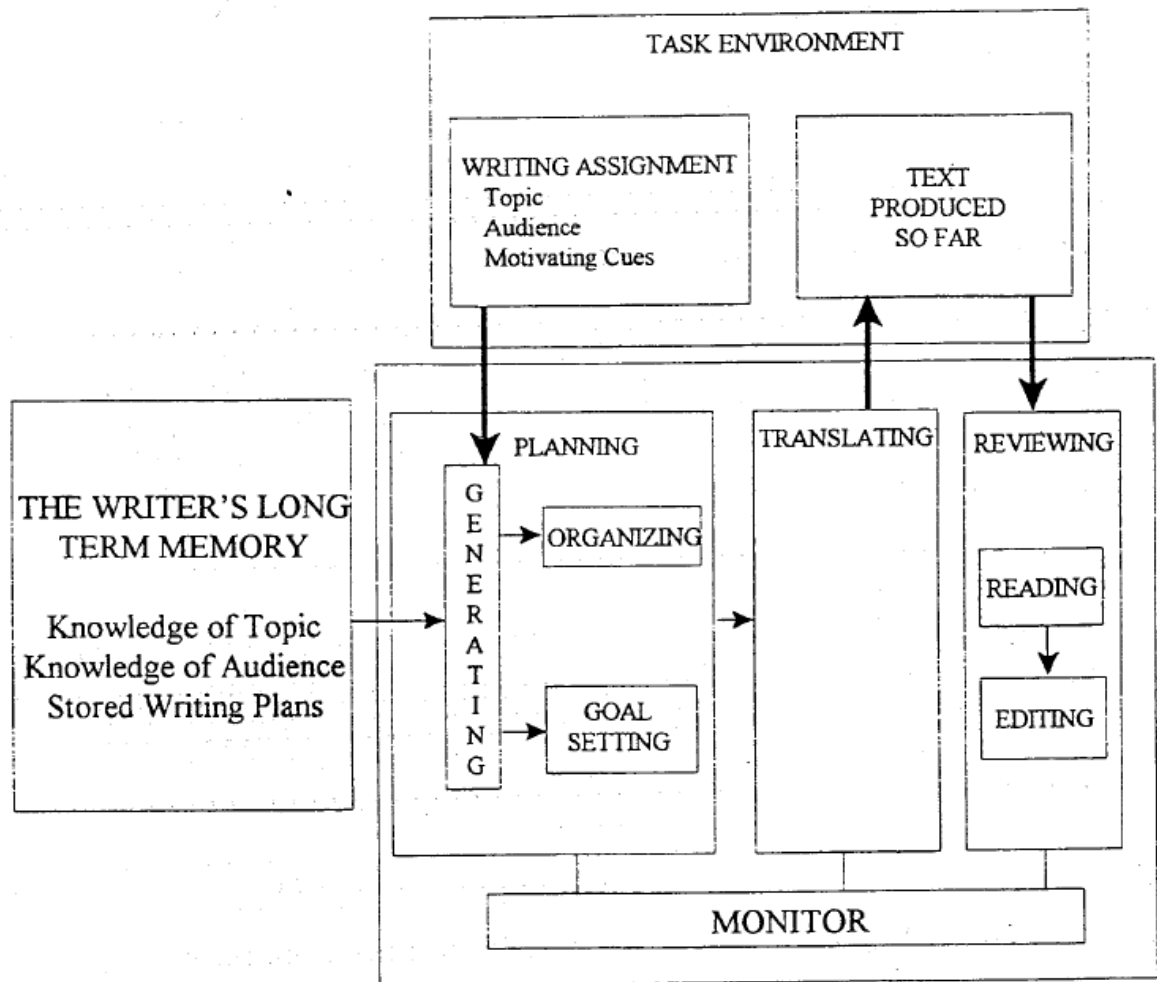


Figure 6. Hayes' (1996) cognitive model of the writing process

Although they conceived of working memory somewhat differently, both Hayes (1996) and Kellogg (1994) viewed working memory as central to the composing process.

The present study was undertaken in the interest of assessing the effects of scaffolded instruction in the Toulmin model on the problem solving strategies of four sixth-grade writers, and thus draws heavily on the cognitive models of the writing process discussed above. Flower and Hayes's (1981) model, and their assertion that writing is goal-directed and recursive, was central to this study. The work of Kellogg (1994) and Hayes (1996) were important to the present study in that problem solving and negotiating

cognitive load takes place largely in the area of working memory. Most central of all, however, were Bereiter and Scardamalia's (1987) strategies of knowledge telling and knowledge transforming as these were associated with current and intervention-related instruction. A major focus was on the extent to which participants were able to move beyond the SEE (Statement, Examples, Explanation) model, which relies on knowledge telling, to using the Toulmin model, which demands knowledge transforming.

The intervention protocol designed for use in the present study is informed by cognitive models of the writing process. The most direct connection between the intervention protocol and cognitive process models is that the protocols cue for reflection as goals related to content, rhetoric, and procedures are set and met. Witte and Cherry (1994) adapted Flower and Hayes' (1981) Cognitive Process Model to devise a coding scheme which, they claim, "permits a more detailed account of some aspects of what may be involved in the act of writing that has been offered to date" (p. 29). I used Witte and Cherry's classifications to identify the type of goals writers generated – content goals, procedural goals, and/or rhetorical goals – at the pre-composing, composing, and post-composing phases while conducting pre- and post-test intervention protocols with each of the four participants.

Now that I have overviewed cognitive process models of the writing process and briefly described their significance to the present study, I will next present research that sheds light on the question of why argumentative writing poses such difficulty for writers, especially young writers. What follows is a discussion of the cognitive demands of argumentative writing that focuses on the issue of cognitive load and how cognitive load (also referred to as "attentional overload") can be addressed by strategy instruction.

I will then present findings from studies that examine how writers are impacted by argumentative writing task demands, particularly those related to audience.

Cognitive Demands of Argumentative Writing

Audience Awareness / Knowledge Telling / Knowledge Transforming

In his discussion of changing social and historical contexts in the field of writing research during the past three decades, Nystrand (2006) attributed a new perspective on writing as a “dynamic, meaning-making process” to the work of Emig (1971), Kroll (1978), Flower and Hayes (1981), and Bereiter and Scardamalia (1987). In the context of argumentative writing tasks, this “meaning-making process” privileges the problem solving that writers must carry out in taking and supporting a position in a manner that makes sense not only to themselves, but also to an audience whose experiences, opinions, perceptions, and objections the writer must take into account. According to Lindemann (2001), many rhetoricians and composition theorists have claimed that a defining characteristic of all argumentative discourse is its emphasis on audience awareness.

In examining the cognitive demands argumentative writing places on young writers, Kroll (1978) explained that young writers, as is the case for all writers of argumentative pieces, must first “identify the kind of audience for which a composition is intended, and then shape the composition to the needs and interests of that audience” (p. 269). Kroll went on to assert that a cognitive-developmental approach to the problem of audience awareness suggests that “[w]riters who can decenter their perspectives, taking the view of a hypothetical readership, are more likely to display audience awareness than writers who are imbedded in their personal view of reality” (p. 279). The areas identified as being most in need of improvement by Crammond (1998), McCann (1989), Knudson

(1992), and Burkhalter (1995) – the audience-related components of warrant, supporting data, and opposition and response to opposition – all require writers of argumentative pieces to plan and compose while considering the needs and perspectives of the intended audience, and thus demand that writers decenter in order to contemplate viewpoints that often do not coincide with their own.

The decentering Kroll (1978) described as being necessary in order to meet rhetorical goals is a very difficult task for many writers, and particularly younger writers, as researchers conducting subsequent studies have also discovered (Burkhalter, 1995; Crammond, 1998; Golder & Croirier, 1994; Knudson, 1992; McCann, 1989; McCutcheon, 2006). The more complex rhetorical goals inherent in argumentative writing tasks bring an added dimension to all phases of the writing process as conceptualized by Flower and Hayes (1981) – planning, translating, and reviewing. As writers plan, translate those plans into text, and review what they have written, they must assess each assertion, each support, each rationale offered with an evolving concept of topic and audience in mind. The difficulty of argumentative writing tasks is even more pronounced when a writer is less strategic, as a younger writer is apt to be, and attempts to produce a finished piece using the knowledge telling strategy – that is, without paying adequate attention to predrafting processes (e.g., planning, goal-setting, gathering information, etc.).

Burkhalter (1995), like Kroll, claimed that consideration of audience makes argumentative writing more difficult than other modes, especially for younger writers, arguing that “taking the perspective of the reader is a highly demanding task” as they “not only have to come up with good reasons to convince their readers, but they must

also consider what objections their readers will have” (p. 193). The “good reasons” cited by Burkhalter refer to the use of warrants and relevant supporting data on the part of writers that are sufficiently effective to “convince their readers.” The need to “consider what objections their readers will have” requires that writers recognize and respond to opposition. Thus, writing instruction aimed at improving the effectiveness of secondary students’ argumentative essays must provide them with the support they need to consider the perspectives of their intended audiences as well as their own perspectives, and to use knowledge of these perspectives to convincingly warrant and support their arguments, as well as to predict and address audience opposition.

In her discussion of the cognitive factors that impact children’s writing development, McCutcheon (2006) asserted that argumentative writing places a heavy cognitive load on young writers who must predict and address the concerns of an audience that is “only immediately present as the writer’s imagination, knowledge, and experience allow” (p. 115). McCutcheon further argued that young writers’ capacity for planning was affected by working memory demands related to transcription and text generation, and attributed this dynamic to the tendency of younger writers to “rely on the knowledge-telling strategy” described by Bereiter and Scardamalia (1987), a procedure used by less skilled, often younger writers wherein the writer accesses relevant information from long-term memory and translates those thoughts directly to the emerging text without working through problems in the areas of content and rhetoric in a manner that facilitates the handling of audience-related task demands. When writers employ the knowledge telling strategy, knowledge of content and rhetoric (“discourse”) are brought to bear as the writer tests ideas for appropriateness. Ideas deemed

appropriate are added to the emerging text. The writer proceeds in this manner until ideas are exhausted at which point the writer deems the piece of writing to be finished. In knowledge telling, any planning beyond simply testing for appropriateness is absent.

For young writers employing the knowledge telling strategy, McCutcheon (2006) claimed that “knowledge of topic and genre” found in long-term memory “can be especially helpful” (p. 123). However, a lack of familiarity with the conventions of argumentative writing and, in some instances, assigned topics that students know little about, can compound the cognitive demands of addressing audience concerns, thus making argumentative writing extremely difficult, especially for younger writers who typically, in the course of planning an argumentative essay, must generate “reasons, counter-reasons, examples, and elaborations” (Graham, 2006, p. 190) – activities that require knowledge transforming. McCutcheon noted that young writers often do not address rhetorical concerns as their “planning” (such as it exists using the knowledge-telling strategy) “is dominated by text generation, and planning and text generation are tightly intertwined” (p. 117). This inability of young writers, who generally limit planning to tests of appropriateness while using the knowledge telling strategy to address rhetorical task demands, renders their argumentative writing ineffective, as indicated by the most recent NAEP writing assessments (National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salah-Din, Persky, & Miller, 2008; White & Venneman, 2000) and other studies of secondary students’ argumentative writing capabilities (Crammond, 1998; Knudson, 1992; McCann, 1989; Schultz & Laine, 1987).

Elaborating further upon how young writers are often limited to the knowledge telling mode, McCutcheon (2006) also asserted that when young writers are engaged in

complex writing tasks, “[i]nefficient process at one level can consume resources that might otherwise be devoted to higher level processes such as planning and revising” (p. 122). Here, by “planning,” McCutcheon is referring to the elaborate strategizing more skillful writers use to problem solve task demands of content and rhetoric prior to generating a draft, the kind of planning associated with Bereiter and Scardamalia’s (1987) concept of “knowledge transforming” which was rehearsed in detail above. In a state of attentional overload, secondary students will fall back on knowledge telling rather than problem-solve the genre- and audience-related task demands associated with knowledge transforming. What McCutcheon (2006) has termed “conceptual planning” – the kind of elaborate planning associated with knowledge transforming that must be carried out in advance of composing and address all tasks demands – is difficult even for older students, perhaps in part because instructional attempts at improving students’ conceptual planning “often meet with limited success ... unless accompanied by considerable instructional support” (p. 117). The kind of “considerable instructional support” students need in order to handle the cognitively complex demands of argumentative writing is all but absent from our nation’s classrooms. I will discuss the ineffective practices that dominate writing instruction as well as viable alternatives to these practices below. First, however, I will examine the work researchers who have studied the effects of cognitive load, and looked to prewriting strategies as a possible means of reducing it.

Prewriting Strategies and the Cognitive Demands of Argumentative Writing

One feature of argumentative writing noted by researchers is the heavy cognitive load, also referred to as “attentional overload,” that writers experience when trying to

address content and rhetorical task demands. Kellogg (1994) explored the cognitive demands that writers face before, during, and after drafting. Basing his conceptualization of the writing process on the work of Flower and Hayes (1981), Kellogg asserted that the act of composing is comprised of collecting, planning, translating, and reviewing. In carrying out each of these tasks, a writer must successfully meet "the challenge of creating coherent ideas in the private realm of thought and mapping those ideas onto the public world of linguistic symbols" (p. 3). Thus, a writer must possess procedural knowledge of how to tackle demands related to content ("creating coherent ideas") as well as demands related to rhetoric (making private ideas meaningful in "the public world of linguistic symbols"). If an individual fails to make personal, idiosyncratic ideas meaningful to others, he or she has failed to communicate.

Having explained the complex cognitive demands that argumentative writing entails, Kellogg (1994) recommended that writers make use of prewriting strategies in the planning phase of composing, arguing that, "[b]y planning extensively before drafting, the writer can concentrate on translating and reviewing while composing drafts" (p. 123). The resulting reduction in attentional overload in all phases of writing would permit writers to focus on meeting their objectives which, in the case of argumentative writing, would consist of generating "clear, orderly, convincing arguments [that] show respect for evidence, build in refutation, and accommodate their audience" (Fahnestock & Secor, 1983, p. 20). Any scheme for planning an argumentative essay that provides a writer with procedures for problem solving all facets of the writing task thus has the potential to facilitate knowledge transforming as described above. In the present study, both the instruction in the Toulmin model and the intervention protocol I designed facilitated

extensive planning prior to drafting. One purpose of this study was to determine whether, and to what extent, the prewriting strategies learned in the intervention instruction and the questions posed by the protocol would impact the assertions participants generated and their ability to effectively handle argumentative writing task demands. In analyzing participants' performances, I considered the role that reduction in cognitive load resulting from extensive planning may have played.

Glynn, Britton, Muth, and Dogan (1982) also studied the effects of cognitive load created by argumentative task demands. Addressing the issue of attentional overload, the researchers hypothesized that "attempts to satisfy content and structure demands simultaneously [would] tax a writer's processing capacity . . ." (p. 557) thus reducing the number of propositions a writer could generate in a given period of time. Glynn et al. observed that writers composing argumentative pieces engage in four distinct tasks: "(a) generation of arguments, (b) sequencing of arguments, (c) placement of arguments into sentences, and (d) compliance with punctuation and spelling mechanics . . . , " noting that "[t]he first operation satisfies a content demand; the latter three satisfy structure demands" (pp. 557-558). In carrying out the present study, I viewed argumentative writing tasks as consisting of problems of content and problems of rhetoric (Bereiter, Scardamalia, & Steinbach, 1984). The structure-related tasks of sequencing arguments and translating ideas into sentences using precise wording as described by Glynn et al. engaged writers in the problem space of rhetoric.

Participants selected for Glynn et al.'s (1982) study, which was conducted at the University of Georgia, consisted of professional educators taking an educational psychology class (n=40; 18 men, 22 women). The assigned argumentative writing task

was to compose a letter to their professor in which they were to argue in favor of using an upcoming class session to either conduct research in the library or view a film relevant to the field of educational psychology. Participants were required to write a "preliminary draft" and a polished draft in the course of two ten-minute writing periods with a five-minute break between drafts. In an effort to motivate participants, who appeared on previous occasions to have found both class activities enjoyable and worthwhile, the researchers told them that the future class session activity would be selected solely on the basis of the arguments they presented. Participants were assigned randomly to one of four preliminary draft conditions: an "unordered proposition format" which demanded that the writer attend to content concerns only (generating arguments); an "ordered proposition format" which required that the writer not only formulate arguments but also impose a sequence upon them; a "mechanics-free sentence format" which added the condition that ordered arguments be translated into sentences but that the writer should not attend to issues of mechanics; and a "polished sentence format" that required all of the above as well as the proper use of mechanics in attempting to "produce a finished product on first draft" (pp. 558-559). These last three conditions require varying attention to rhetorical concerns as well as to those related to content. For the final draft, all four groups were instructed to attend to all the requirements of the polished sentence condition, and were permitted to use their initial drafts as a resource. In assessing content, Glynn et al. gave credit only for "plausible and logical arguments" included in the final drafts, and in terms of structure, evaluated "sentence production (total number of sentences produced), syntactic complexity (average number of clauses per sentence), mechanics (average number of punctuation and spelling errors per sentence), and

argument-presentation efficiency (average number of arguments per sentence)" (p. 559). Interrater reliability for content (plausible and logical arguments) was high at .92.

In their discussion of results, Glynn et al. (1982) reported that their hypothesis was supported, finding that "significant increments of argument production accompanied the elimination of the sentence-formation and sequence demands imposed by the preliminary-draft formats" (p. 560). With a reduction in attentional overload, participants in the unordered proposition group also produced more arguments than those in either of the groups required to generate sentences. Participants assigned to the mechanics-free and polished sentence groups each produced about the same number of arguments, and formulated fewer new arguments when completing the final draft than either of the proposition-only groups. By way of structural characteristics, only argument-presentation efficiency was influenced by the preliminary draft condition. Writers in the polished sentence format generated fewer arguments per sentence than participants in the other three conditions, all of whom performed about the same.

This study by Glynn et al. (1982) would seem to suggest that although structural concerns unattended to in earlier drafts may be successfully addressed upon producing a final draft, the higher number of concerns to be dealt with in taking a polished sentence approach, and the attentional overload that accompanies this approach, has a negative impact on the quantity (and also, perhaps, quality) of a writer's thoughts that cannot be easily compensated for later. If these researchers' findings may be found to hold true for adult writers who have a great deal more experience with writing in all modes, they are likely to be true for younger, less experienced writers like the sixth-grade students who took part in the present study.

Glynn et al.'s (1982) study was of particular interest to me because the different conditions under which participants composed cued for problem solving in either the knowledge telling mode or the knowledge transforming mode. The two groups of writers required to produce sentences were clearly being limited to knowledge telling, translating ideas directly to emerging texts. What was not as apparent at first is that the "ordered proposition group," although not dealing with the constraint of producing sentences, was also limited to knowledge telling as they had to record ideas in order and thus were also working with an emerging text. Participants who merely had to record propositions in any order that occurred to them were relatively free of rhetorical constraints and could focus on content. This freedom to problem solve content demands is characteristic of knowledge transforming. Free from the lower level rhetorical concerns of ordering and editing/polishing writing produced, writers can concentrate on evaluating the effectiveness of content on an intended audience. Students taking NAEP writing assessments, SAT and AP exams, and state-mandated tests write under very challenging time constraints and generally do not believe they even have time to plan. As a consequence, they rely on knowledge telling, needing to "produce a finished product on first draft" as did some of the participants in Glynn et al.'s study.

What was especially striking to me was that writers in Glynn et al.'s (1982) study, once in knowledge telling mode, had difficulty making the move to knowledge transforming. I observe this all the time in my own work as a classroom teacher, and see this illustrated in this study, evidenced by the fact that writers composing under the sentence generating constraint did not produce additional propositions from the initial draft to the final draft. Although the task was simple – writing a letter (a familiar format)

to the instructor (a familiar audience) about a simple, straight forward position on one of two familiar activities – I have doubts about the quality of data Glynn et al. could have gleaned from a mere 10 minutes of writing. Had participants had more time to write and had tackled more complicated tasks, the findings by Glynn et al. might have been more convincing. I have, nevertheless, taken away from Glynn et al. (1982) the idea that the fewer constraints a writer must contend with at any given time, the more free that writer is to problem solve whatever facet of a given writing task that presents itself at any given moment. This freedom and flexibility characterize the knowledge transforming strategy – a strategy that I believe is essential for writers to use in order to problem solve the complex task demands of argumentative writing, specifically those audience related task demands identified by McCann (1989), Knudson (1992), and Crammond (1998).

Participants in the present study were given a freedom akin to individuals in the unordered proposition group of Glynn et al.'s (1982) study. The intervention protocol designed for the study probed participants about a controversial issue (content), the knowledge and opinions of the intended audience (rhetoric), and their plans for meeting goals (procedures). I believe that this extensive planning prior to drafting did reduce cognitive load, allowing participants to "concentrate on translating and reviewing while composing drafts" as Kellogg (1994) found (p. 123). They were free to generate material (data, claims, warrants) in any order they chose, and did not deal with the constraints of composing sentences until they began drafting. I believe that this may have increased the number and quality of propositions they generated, thus improving the overall quality of the essays they produced in connection with the present study.

Crowhurst (1988) conducted a meta-analysis of persuasive/argumentative discourse studies in which she concluded that “many young students do not appear to have an appropriate schema for written argument” (p. 36-37). Crowhurst (1991) built upon her previous research by conducting a study aimed at determining whether instruction could improve students’ argumentative writing and exploring possible reading-writing connections in the field of argumentation. Participants were sixth-graders selected from two suburban, middle-class schools (n=100). Using Gates McGinitie reading comprehension scores, Crowhurst categorized students by ability (high, medium, and low) and then used a stratified random assignment procedure to create one control group and three instructional groups – a writing group, a reading group, and a single-lesson-model group. Each of the four groups taking part in the study was comprised of 25 students. Students in all groups were given a pretest one week before the instructional period, and a posttest one week after, consisting of one reading task and two writing tasks. Tasks were administered on separate days and students were given 45 minutes to complete each task. Over the course of five weeks, the writing group and the reading group received instruction two times per week for 45 minutes. Students in both groups were provided with a structural model of argumentative texts on the first day, and then asked to apply the model in analyzing a short argumentative text. Thereafter, students in the writing group reviewed the structural model each day, and then wrote a pro or con piece on a controversial topic-of-the-day. After participating in peer review sessions, students wrote final drafts. Students in the reading group focused upon structure and content in the course of carrying out guided readings of short argumentative texts arranged in pairs (a pro and a con piece on five argumentative

topics). Following the readings, students offered possible counter-arguments for each text and discussed each reading's persuasiveness. Students in the control group wrote reports based on books they were reading, and had no exposure to the argumentative model. During the last few days of the instructional period, students in the single-lesson-model group were given the same first-day instruction in the persuasive model as participants in the other two instructional groups. Aside from this one lesson, these students engaged in the same activities as participants assigned to the control group.

Crowhurst (1991) divided her discussion of findings into two categories: evidence that argumentative writing can be improved by instruction, and evidence of reading-writing connections in the study. Crowhurst, who made use of both holistic ratings and structural element tallies, reported that students in the writing group demonstrated a 30 percent increase in the quality of their writing from the pretest to the posttest, and students in the reading group recorded a 23 percent increase. Both the reading group and the writing group outperformed the control group and the single-lesson-model group, neither of which showed any significant change. Crowhurst noted that perhaps due to direct instruction in the use of text-markers and conclusions, students in the reading and writing groups wrote longer responses on the posttest than did students in the other two groups. Also, students in the reading group and the writing group devoted considerably more text to elaboration than did students in the other two groups, and their elaborations were better organized on the posttest than they were on the pretest.

Crowhurst (1991) concluded that “[t]he types of instruction which produced improvement in writing quality were presentation of the persuasive model together with practice either writing or reading persuasive pieces” whereas “[p]resentation of the model

alone – without either writing or reading practice, as in the single-lesson-model group – was not successful in producing improvement” (p. 330). As to reading-writing connections, Crowhurst found nothing to support the notion that writing persuasive texts improved students’ reading of persuasive texts; however, Crowhurst did discover that “reading of persuasive readings exemplifying the model played a significant role in the writing improvement of the reading group, and that both instruction in the model and experience reading helped with the development of a schema for persuasion which students were able to use in their writing” (p. 331). Crowhurst stated that this last finding was particularly surprising given that the significant gains in writing quality made on the posttest by the reading group occurred despite the fact that these students did no writing whatsoever during the instructional period.

As is the case with nearly all of the studies I have read, Crowhurst (1991) provided little to no information about context. Nothing is revealed about the socio-economic circumstances of students and community, or the work students performed in the classroom prior to the treatment instruction. Particularly puzzling to me is that Crowhurst reported using “a structural model” to teach the components of an argument, but does not specify which model she used much less provide a detailed account of how it was used. I was not surprised that Crowhurst found that participants in the single-lesson-model group experienced no improvement because these participants experienced what our nation’s students so often experience in writing classrooms – a model is presented to them naming the component parts of a piece of writing of a particular mode, and then are expected to imitate it following the “steps” laid out for them. This is writing “instruction” with no real instructional component that does not effectively cue for

knowledge telling much less facilitate knowledge transforming. On the other hand, I do see in Crowhurst's finding that both groups that had extensive exposure to the model ("reading" and "writing") demonstrated sizeable gains in essay quality on the posttest as possible evidence of knowledge transforming. Both groups excelled in composing longer, more elaborate, and better organized essays. The present study similarly combined instruction in a model – the Toulmin model – with experiences with both reading and writing argumentative essays.

Crammond (1998) and McCutchen (2006) have both noted that prior knowledge of content can make writing tasks for manageable for young writers. Scardamalia, Bereiter, and Steinbach (1984) examined how additional structures guiding procedures might benefit sixth-grade students, enabling them to move from knowledge telling, which tends to focus on content exclusively, to knowledge transforming, which expands consideration of content into the domain of rhetorical concerns (i.e., audience-related task demands). Scardamalia, Bereiter, and Steinbach investigated whether sixth-grade students were capable of independently engaging in the reflective, problem-solving monologues often employed by expert writers. This "reflective activity" consisting of "elaborating and reformulating goals and plans for achieving goals, critically examining past decisions, anticipating difficulties, [and] reconciling competing ideas" (p. 174), while important in all modes of writing, is particularly valuable in considering audience when writing arguments. According to these researchers, most young writers, although capable of reflective thought, tend to "generate texts through [a] primarily linear, non-reflective [process]" which they termed "the knowledge telling strategy" (p. 174). It is only when writers write strategically in order to achieve goals that they have set for a

piece of discourse that they succeed in the transformation of knowledge that characterizes reflective thought.

Rejecting the idea that writers in the process of composing carry on a conversation with a hypothetical other, Scardamalia, Bereiter, and Steinbach (1984) asserted that an expert writer's thought process bears a greater resemblance to a problem-solving session carried out internally. At work in the problem solving process are two "problem spaces": the "content space ... in which one works out opinions, makes decisions, generates inferences about matters of fact, [and] formulates causal explanations," and the "rhetorical space" which is comprised entirely of "mental representations of actual or intended text ..." (p. 176). While thought may be limited to one space or another at different points in the composing process, these two spaces often interact, engaging the writer in reflective thought. Expert writers more readily move between questions of content ("What do I mean?") and questions of rhetoric ("What do I say?"); however, less mature writers limited to the knowledge-telling mode "possess productions for transferring information from the content space to the rhetorical space, but [lack] productions for the return trip" (p. 178). The instructional strategy employed by the researchers, which they refer to as "assisted monologue," was aimed at providing novice writers with a method for moving back and forth between content and rhetorical concerns while composing.

Participants in Scardamalia, Bereiter, and Steinbach's (1984) study consisted of grade 6 students enrolled in a public, urban school system with middle to high SES. Students were divided into two groups: a control group (n=32), and an experimental group (n=30). Over the course of fifteen weeks, students in the experimental group

received direct instruction twice a week for 45 minutes in the use of dialectic to resolve conflicting arguments, methods of self-questioning, and modeling of thought processes used in planning. In addition to composing pre- and post-test opinion essays, students in both groups concentrated on writing a number of argumentative pieces for the first 10 weeks, and on composing fact-based expository pieces for the last five weeks including a major expository essay on a topic of their own choosing. Students in the control group, who took notes and conducted library research, were given the same amount of time to work on essays as was devoted to providing direct instruction to students in the experimental group.

Students in the experimental group were introduced to the various types of thinking they needed to employ when stuck at different points in the composing process: generating a new idea, elaborating, improving existing text, directing their discourse toward their goal, and organizing text. Students were given different sets of specific cues associated with each type of thinking for opinion essays and expository pieces. Once they were familiar with the purpose of each set of cues and had had the use of the cues modeled several times by the instructor, students were asked to perform think-alouds about the piece of writing that they were currently working on in front of the class, selecting a cue card from the appropriate category when stuck and then responding verbally to the cue they selected. Students also received direct instruction in use of dialectic. When they encountered conflicting ideas while writing, students were encouraged to use dialectic "to successfully [reconcile] thesis, opposing argument, and supporting argument" (p. 181).

In their discussion of results, Scardamalia, Bereiter, and Steinbach (1984) first revealed that students in the experimental group showed significant gains in reflectiveness while planning compared to students in the control group. To rate the major essay, the researchers used a 9-point scale representing a continuum of thought from knowledge-telling (on the low end of the scale) to reflective (on the high end). Control group participants averaged a score of 3.35 on this scale whereas the experimental subjects scored significantly higher, averaging 5.43. The differences between pre- and post-test scores for the opinion essay were slightly greater for the experimental group, but were not statistically significant. Students in the experimental group, however, did make great improvements in the area of "resolv[ing] opposing viewpoints instead of simply stating pros and cons" (p. 183). The researchers also noted that students in the experimental group used a wide array desirable strategies, including the ability to "sustain planning," "recogni[ze] ... problems at the planning level," "monitor and analyze thinking," and "[use] goals as criteria for selecting ideas," as well as demonstrating the "[b]eginnings of a dialectical process" (pp. 185-187). Scardamalia, Bereiter, and Steinbach concluded their study by claiming that their analysis of participants' planning and think aloud protocols indicated that the sixth-grade students in their study, while tending to focus reflective activity at the "local level", nevertheless began to demonstrate "that some two-way traffic between content space and rhetorical space had been established" (p. 188).

As is almost always the case with the relevant studies I have uncovered, I found Scardamalia, Bereiter, and Steinbach's (1982) study lacking in detailed information about participants, school, community, instruction, and other factors influencing context that

would have permitted me to have a full understanding of their results. Aside from this common complaint, this study provided me with a great deal of material and inspiration for the present study. These researchers use the term “reflectiveness” to describe behaviors associated with knowledge transforming. Their finding that reflectiveness can be taught, and that young writers can develop a schema for writing that is goal-directed (i.e., guided by “cues”) as a result of instruction that models the use of these cognitive strategies inspired my decision to examine the possible effects of scaffolded instruction in the Toulmin model on sixth-grade writers’ problem-solving strategies. The scaffolded instruction they provided suggested a Vygotskian approach that featured learning from an adult who engages them in their zones of proximal development. Most importantly, Scardamalia, Bereiter, and Steinbach provided me with the understanding of argumentative writing as consisting of problems of content and problems of rhetoric, and demonstrated that providing young writers with strategies that allow them to move between these problems spaces is essential to developing an adequate schema for argumentative writing.

The studies reviewed here Glynn et al. (1982), Crowhurst (1998), and Scardamalia, Bereiter, and Steinbach (1984), all point out that argumentative writing places a number of cognitive demands on writers, and suggest that attentional overload may be reduced through the use of prewriting strategies. In utilizing these strategies, writers may also “decenter” (Kroll, 1978) their writing in ways that help them to take their intended audiences into consideration in collecting, planning, translating, and reviewing.

As I have mentioned throughout this study thus far, researchers studying the cognitive demands of argumentative writing have reported that audience-related task demands account for much of the difficulty secondary students experience when writing in this mode (Kroll, 1978; McCann, 1989; Knudson, 1992; Golder & Croirier, 1994; Burkhalter, 1995; Crammond, 1998; McCutcheon, 2006). These difficulties are clearly evident in the results of the four most recent administrations of the NAEP writing assessments (1998, 2002, 2007, 2011). What is also clearly evident is that prevailing practice in writing instruction does not provide young writers with effective strategies for handling argumentative writing task demands. I will next review the findings of these NAEP assessments in greater detail, and then discuss how they may be viewed as reflecting ineffective approaches to writing that dominates instruction in our nation's schools.

NAEP Writing Assessments

The premium placed on argumentative writing in our country is apparent based on the number of high stakes tests that secondary students are expected to take in the interest of determining if they are ready for college and careers. Argumentative tasks appear on the SAT, a variety of AP exams, state-generated assessments created in response to No Child Left Behind, and assessments that are currently being designed in connection with The Common Core State Standards. The most comprehensive data on secondary students' argumentative writing capabilities, however, is collected by the National Assessment of Educational Progress (NAEP) which conducts such studies every five years, and has done so for decades. In the NAEP writing assessment report they co-authored, Salah-Din, Persky, and Miller (2008) explained that the same framework and

rubrics were used for the 2007 NAEP writing assessment and the two prior administrations (1998 and 2002). This uniformity makes comparisons between and among assessments for these years particularly strong.

In their analysis of the 1998 administration of the NAEP writing assessment, White and Venneman (2000) reported that 25% of twelfth grade students wrote responses judged to be “unsatisfactory” or “insufficient,” 30% composed essays deemed to be “uneven,” and a mere 13% were capable of writing responses assessed as being “skillful” (10%) or “excellent” (3%) as assessed by the NAEP 8th Grade Persuasive Rubric (Appendix E) used to score participants’ argumentative essays. That 32% of students in the study produced essays evaluated as being “sufficient” offers no reassurance that students are ready to perform well in college or the workplace as responses at this level may be merely “generally organized ... [having] few or no transitions among parts” (p. 89). Persky, Daane, and Jin (2003), authors of the 2002 NAEP writing assessment, reported that 9% of twelfth-graders composed argumentative essays that were rated as “excellent,” and 22% wrote essays deemed to be “skillful.” The remaining 69% of participants, however, composed essays that were, again, rated as “sufficient” at best, and could be merely “generally organized” with “few or no transitions,” and were characterized by sentence structure that was often “simple and unvaried.” Again, these descriptors are not indicative of college- and/or career-ready writing skills.

According to Salah-Din, Persky, and Miller (2008), authors of the 2007 NAEP writing assessment, twelfth-graders throughout the country continued to struggle with argumentative writing. Schneider (2008), Commissioner of The National Center for Educational Statistics, stated in the Executive Summary that our nation’s writing teachers

“still have a ways to go.” After what appeared to be an upward bump in 2002, the number of twelfth-graders able to write responses that were deemed “excellent” dropped to 5%, and only 21% composed responses that were “skillful.” In terms of what this means for college and career readiness, I derive from the data from the 2007 NAEP writing assessment that only one in twenty students graduating from our nation’s high schools is prepared for the demands of writing in the college classroom, and only roughly one in five is prepared to handle the basic task demands of argumentative writing in the workplace, and in personal and social contexts. On the other end of the spectrum, 27% wrote essays that were “uneven,” and 3% wrote essays that were deemed “unsatisfactory”. Again, that 34% wrote essays rated “sufficient” is hardly an indication that students have learned to write effective arguments as these essays may provide only “some support” for the position taken by the writer, may “lack transitions” entirely, and “sentence structure and word choice [may be] often simple and unvaried” (p. 44). Thus, students who are incapable of composing essays that are “excellent” (or, at the very least, “skillful”) appear to have failed to develop “the type of analytical reasoning necessary for college success” (p. 48) that Hernandez, Kaplan, and Schwartz (2006) claimed to be an essential objective of public schooling.

The most recent administration of the NAEP writing assessment took place in the fall of 2011. All 24,100 eighth graders, and 28,100 twelfth graders who took the test did so on computers. I am discussing these results separately because, in the words of National Center for Educational Statistics Commissioner, Jack Buckley, the fact that “the 2011 assessment uses new technologies that differ significantly from those used in previous assessments” means that researchers and practitioners “can’t make comparisons

to past results” (National Center for Educational Statistics, 2012). Additionally, students taking the 2011 assessment would have had fewer days of instruction with their current teachers and at their current grade level than students who took prior NAEP writing assessments which have historically been administered in the spring. Ratings were also changed to “effective skill,” “competent skill,” “adequate skill,” “developing skill,” “marginal skill,” and “little to no skill.” Scale scores were used to categorize students as “Basic,” “Proficient,” or “Advanced.” Although the test was administered online, the ratings were changed, and direct comparisons cannot be made to prior administrations, it is apparent nevertheless that secondary students continue to experience difficulty with argumentative writing. Only 27% twelfth graders scored “Proficient” or above, and of that 27%, only 3% earned scores that placed them at the “Advanced” level (National Center for Educational Statistics, 2012).

The four most recent NAEP writing assessments demonstrate that secondary students struggle with argumentative writing, with only a small percentage writing essays that indicate that they could potentially compose effectively in the argumentative mode in post-secondary academic and workplace contexts. This inability of secondary students to handle the task demands of argumentative writing is likely due at least in part to ineffective writing instruction that limits students to knowledge-telling that currently prevails in our nation’s schools – instruction that does not take into account what research has revealed about how the cognitive processes writers engage in while composing.

Ineffective Writing Instruction – Models and General Procedures

Researchers examining how writers write have devised cognitive models of the writing process that, although differing in some regards, share a view of writing as a

goal-driven, recursive process (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981; Hayes, 1996; Kellogg, 1994). For over twenty years, researchers investigating how writing is taught in our nation's schools have reported that educators have failed to effectively translate theory into classroom practice (Applebee, 1986; Applebee, Langer, Jenkins, Mullins, & Foertsch, 1990; Bereiter & Scardamalia, 1987; Bruer, 1997; Everson, 1991; Hillocks, 1986; Hillocks, 1995; Hillocks, 2011; Langer & Applebee, 1987; McCutcheon, 2006; Pritchard & Honeycutt, 2006; Schultz, 2006; Smagorinsky, 1994; Swanson-Owens & Newell, 1994).

Despite the wide acceptance of the view that writing is a dynamic, meaning-making process, Smagorinsky (1994) characterized the writing instruction students typically receive as consisting of a combination of instruction in model essays to be imitated coupled with general procedures associated with a process approach to writing – planning, drafting, revising, and editing – that are taught in a way that is consistent with a lockstep, stage-model understanding of the writing process that cognitive process models have effectively refuted. This ineffective approach to teaching writing results in what Pritchard and Honeycutt (2006) have described as a “simplistic pedagogy” that is “linear and prescriptive” wherein the “teacher describes the four stages, students recall and rehearse the steps” (p. 276), and then follow the steps to produce a finished piece of writing. The instruction that Pritchard and Honeycutt (2006) critiqued as insufficient was designed to support writers composing narratives, a type of writing that has fewer audience demands and is less cognitively demanding than argumentative writing (Kellogg, 1994). The failure of such instruction to support writers composing argumentative essays even more pronounced. The instruction described by Pritchard and

Honeycutt limits writers to the knowledge-telling mode. It can support only the kind of “writing as recitation” Hillocks (2011) claimed dominates prevailing practice wherein students compose narratives and summaries limited mostly to the rehearsal of facts. The instructional support teachers must provide is minimal. The considerable cognitive demands of argumentative writing, however, require teachers to provide much more. Effective writing instruction must provide students with a schema that facilitates knowledge transforming.

Lacking the “considerable instructional support” that McCutchen (2006) claimed was essential to facilitating the kind of complex problem solving writers must carry out in the process of conceptual planning, students are forced to tackle argumentative writing tasks with understandings derived solely from the imitation of model essays and instruction in general procedures. Smagorinsky (1994), in evaluating the impact of such instruction, concluded that

model essays alone [do] little to help students improve their process of essay production. While economical for time-pernicious teachers, the study of models puts the great burden of learning how to write on students, who are apparently not up to the task. Teachers would benefit from providing some sort of procedural instruction to give students a method for transforming their content knowledge into coherent written expression. (p. 361)

Smagorinsky’s assertion here points to the two major problem spaces of content and rhetoric (i.e., making the writing “coherent” to an intended audience). Instruction in argumentative writing that focuses on models and general procedures is ineffective

because it cues for knowledge telling when knowledge transforming is required to adequately handle task demands.

It could be that the “simplistic pedagogy” described by Pritchard and Honeycutt (2006) is so prevalent because teachers, as Smagorinsky has speculated, may be “time-pernicious;” however, another factor influencing how writing is taught is state-mandated exams. Pritchard and Honeycutt (2006) have asserted that “the emphasis today on state academic standards is influencing how the process model is implemented and tested” (p. 276). Schultz (2006) has echoed this concern, claiming that “many writing tests – and the curriculum that prepares students to take them – encourage narrow and formulaic writing, and the teaching of writing merely as a skill,” and that beyond instruction of this kind, “it may be difficult to find writing instruction in schools” (p. 359). Hillocks (2002) turned attention to the flawed nature of the assessments themselves, pointing out that state assessments required by No Child Left Behind as well as those administered by NAEP do not ask writers to “attend to evidence or show how the evidence relates to claims” (p. 200). Thus it well could be that even if students improved their performances on such assessments, they still would not have learned to effectively handle the task demands of argumentative writing to a degree that would enable them to succeed in college and workplace settings.

In addition to failing to provide the kind of instruction in procedures that would facilitate knowledge-transforming thus enabling students to transform what they know about a subject into “coherent written expression” (Smagorinsky, 1994), a major shortcoming of prevailing practice in writing instruction is its failure to consider the crucial dynamic of context, which, in the case of argumentative writing, is particularly

important as context includes the writer's "particular biographically formed stances, values, and practices" (Prior, 2006, p. 55). What a writer knows and thinks about a topic, and what the writer believes an intended audience knows and thinks about that topic, is an essential starting point for the conceptual planning of an argumentative essay that will address the audience-related task demands of warranting arguments, generating convincing supporting data, and recognizing and responding to opposition found to be so problematic, especially for younger writers (Burkhalter, 1995; Crammond, 1998; Knudson, 1992; McCann, 1989). Bound by the constraints of time demands and high stakes testing, our nation's teachers limit writing instruction to the imitation of models and instruction in the general procedures of planning, drafting, editing, and revising. These practices support knowledge telling, but fall short of engaging students in the knowledge transforming that more complex writing tasks demand.

If they are to write effective argumentative pieces, writers must be taught how to systematically generate and evaluate text expressing their perspectives, as well as the possible perspectives of their intended audiences. Teaching young writers how to engage in this kind of conceptual planning that enables them to do the kind of problem solving associated with knowledge transforming (Bereiter & Scardamalia, 1987) requires modeling that goes beyond the analysis of model essays and instruction in general procedures to demonstrate procedures associated with adult reasoning. Such practice requires teachers to engage students in dialogue, teaching them to "learn to write by talking together while working through problems that provide rehearsals for the kind of thinking they will have to do when they are composing" (Smith, 2011). Knowledge transforming, thus, requires scaffolded instruction that engages students in what

Vygotsky (1978) termed the “zone of proximal development.” Such instruction, however, is not widely found in our nation’s schools.

Hillocks (1986, 1995, 2011) closely analyzed nearly 200 studies of writing instruction and found that instruction fell into three major categories – “presentational,” “natural process,” and “environmental.” Hillocks concluded that the instructional mode used had a significant impact on the quality of students’ compositions. The “presentational mode” describes instruction that relies heavily on the analysis and imitation of model essays described and critiqued above. Students learn with no support from peers, nor do they get any support from the teacher beyond what has been presented to them. Hillocks emphasized that the presentational mode does not touch upon process, particularly in the form of feedback, as it “assumes that knowledge can be imparted by teacher or text directly to students prior to engagement in writing and that mastery can be achieved without the support of special teaching structures, such as peer group collaboration, even when the knowledge imparted involves learning the use of complex strategies” (p. 55-56). In other words, instruction is not scaffolded and students do not receive the support they need to engage in the adult reasoning that characterizes knowledge transforming. The “natural process” mode is strongly associated with instruction in general procedures – planning, drafting, revising, editing – also discussed and critiqued previously. Direct instruction in text structures is abandoned as students are encouraged to discover their own organizational schemes. Teachers endeavor to provide feedback as students produce multiple drafts, but the feedback is entirely idiosyncratic. In the absence of a shared understanding of demands relating to form, content, and rhetoric, peer feedback is limited largely to matters of clarification and editing. As was

the case with presentational instruction, natural process instruction does not provide the scaffolds young writers need to engage in the more adult reasoning needed to problem solve the content and rhetorical demands of argumentative writing. According to Hillocks, only a third mode – the environmental mode – accommodates the cognitive demands of argumentative writing because it approaches the writing process for what it is – complex problem solving.

An Alternative Writing Pedagogy –Writing as Problem Solving

Bruer (1997) examined possible ways advances in the field of cognitive science could transform learning in our nation’s classrooms. In his discussion of writing, Bruer attributed the lack of progress in the teaching of writing to a “naïve” understanding the composing process that “rarely recognize[s] writing as problem solving” (p.219). If teachers are to help students solve the “ill-defined problems” posed by writing tasks – problems “for which there is no ready-made, best initial representation and no standard solution method” (p. 218) – they must provide them with schemas for writing tasks that go beyond asking students to imitate model essays or follow a lock-step set of general procedures. Although the “cognitive revolution” in the field of education led a number of researchers to construct cognitive process models of the writing process (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981; Hayes, 1996; Kellogg, 1994), this research has not been effectively translated into widespread instructional practice. Bruer speculated that this may be the case largely because even though cognitive process models provide educators with knowledge of general processes that guide writing, these models “might not have been sufficiently detailed or inclusive to guide teaching” (p. 232). Essentially, classroom instruction has not effectively integrated knowledge of the

cognitive processes involved in composing and the task demands of various types of writing. In carrying out the present study, however, I examined in detail how cognitive process models, especially Bereiter and Scardamalia's (1987) knowledge telling and knowledge transforming models, impacted how participants made meaning and use of Toulmin's (1958/2003) Model of Argument.

Smagorinsky (1994) tasked educators with devising "procedural instruction [that] give[s] students a method for transforming their content knowledge into coherent written expression" (p. 361). Although many researchers have examined the effectiveness of a variety of argument models and procedures, only one researcher, Hillocks (1986, 1995, 2011), has presented a clear, cogent approach to the teaching of argumentative writing that addresses its complex task demands, provides an effective model that incorporates elements and procedures, and supports knowledge transforming. The argument model he deemed to be most effective is the Toulmin (1958/2003) model, and he has used the term "environmental" to describe his inquiry-based method of teaching.

Hillocks's (1986, 1995, 2011) "environmental" approach to teaching views writing as problem-solving and guides students in knowledge transforming through scaffolded instruction. Hillocks (2011) defined "effective teaching" as "the kind of teaching in which students learn to do, with support, what they cannot or do not already do by themselves" (p. 1). This approach is clearly rooted in the Vygotskian (1986) concept of the "zone of proximal development." Going beyond prevailing practice which is dominated by a combination of presentational and natural process teaching, environmental teaching demonstrates procedures associated with adult reasoning. It is dialogic in that it teaches students to "learn to write by talking together while working

through problems that provide rehearsals for the kind of thinking they will have to do when they are composing” (Smith, 2011). In taking an environmental approach to teaching the Toulmin model wherein I provided students with support through dialogue, I attempted to do what Bruer (1997) claimed has not been done effectively on a widespread basis – I endeavored to implement a cognitive process approach to handling the audience- and genre-related task demands of argumentative writing that was “sufficiently detailed [and] inclusive to guide teaching” (p. 232).

Aside from NAEP assessments, the only other research on secondary students’ argumentative writing capabilities takes the form of independently conducted studies. For the purpose of the present study, I focused on studies that advocate direct instruction in argument models, and particularly those which used the Toulmin model. In keeping with the work of researchers who studied the relationships between the cognitive task demands of argumentative writing and interventions at the prewriting phase that may reduce cognitive load, the present study treated scaffolded instruction in the Toulmin model as a prewriting strategy that has the potential to provide young writers with a more comprehensive schema for argumentative writing.

In the following section, I overview the Toulmin (1958/2003) Model of Argument, how the model has been used in ineffective writing instruction, and how the model can be taught using an environmental approach (Hillocks, 1995) to facilitate knowledge transforming. I then review product- and process-based Toulmin-based studies of secondary students’ argumentative writing capabilities.

The Toulmin Model, Environmental Learning, and Toulmin-Based Studies of Argumentative Writing

The Toulmin Model of Argument

Dissatisfied with what he perceived to be often faulty distinctions between inductive and deductive reasoning, and the failure of formal logic to adequately address the kinds of practical arguments that are a part of everyday life, Toulmin (1958/2003) devised a model (overviewed in Chapter 1 of this study) designed to identify the various parts of an argument, irrespective of type, and explain their functions. The Toulmin model has been used by researchers and practitioners for a variety of purposes. For example, Evers and Houssert (2004) used the Toulmin model to evaluate the quality of middle school students' responses when asked to explain whether or not a claim about a given number sequence was true or false. Jolliff (1998) utilized the Toulmin model as a method for conducting conversations about literary texts in an introductory literature course in which students had to make claims, support them with data, and state the warrants that justified connections between data and claims. Hernandez Kaplan and Schwartz (2006) instituted a school-wide literacy program based on the Toulmin model with the aim of improving students' critical thinking abilities. For the most part, however, the Toulmin model has been used in the fields of speech and composition. As the present study examined how scaffolded instruction in the Toulmin model affected the problem solving strategies of participants, I have limited all discussion and analysis of the Toulmin model to the context of teaching argumentative writing.

Citing the decision of many professors of speech and composition to desert instruction in syllogisms and fallacies, an approach that "fails to provide a sense of the

necessary constituents of an argument” (p. 237), Kneupper (1978) examined the applicability of the Toulmin model to the teaching of college composition. Kneupper explained the “working logic” of the basic elements of the Toulmin model – data, claim, and warrant – saying:

An explicitly developed argument must exhibit these three elements. The claim is the conclusion of the argument and the point at issue in a controversy. The data is evidence for the claim. The Warrant provides the link which shows the relation between data and claim Arguments are not always explicitly developed in rhetorical discourse. Warrants, in particular, are frequently implicit. Yet in controversial arguments, implicit warrants are likely to be challenged to become explicit and to be defended (p. 238).

Kneupper’s emphasis on the importance of explicitly stating warrants points out both the importance of warrants in constructing effective arguments, and the challenge writers face in articulating warrants that will be deemed valid to an audience, especially one that disagrees with the writer’s claim. In addition to using the Toulmin model to teach students argument by labeling the parts of existing argument, or applying the model in carrying out a discourse analysis, Kneupper claimed that the Toulmin model could be useful in generating claims and constructing support for those claims. If writers also addressed the more sophisticated facets of the model – qualification, reservation, and backing – Kneupper argued that “by explicitly following the model, a qualified and supported argument results” (p.239). Kneupper also described his vision for how writers might make use of the model for longer, more complex arguments by developing a “chain of arguments” in an essay that develops “each of the functional elements of the

Toulmin model in the kernel argument and from tying the interrelated claims together in a conclusion” (p. 239). In analyzing protocol transcripts for the present study, I found many instances where participants constructed a “chain of arguments” in planning, translating, and reviewing with the guidance of the intervention protocol.

Fulkerson (1996) claimed that “Toulmin logic,” although having replaced the study of syllogisms in speech courses, “has not yet been widely adopted, or even attended to, in composition studies, but is currently becoming a common feature in textbooks on argument and composition ...” (p. 18). Several years earlier, Fulkerson (1988) attributed the popularity of the Toulmin model at least in part to the fact that an assignment in most composition classes, as is the case with all or nearly all academic writing, “involves argument because it involves the attempt to support some claims (such as theses or topic sentences) with other claims (such as details, examples, and quotations)” (p. 436). Referring to Kneupper’s (1978) assertion that the Toulmin model can aid writers in the process of generating and supporting claims, Fulkerson cites the problem that all model-focused instructional methods share, namely, “the difficulty of getting from a model of a finished product to a process by which a student can create one” (p. 23). Fulkerson sees Toulmin’s view of arguments as field-dependent to be problematic as composition courses often have students compose essays on general topics. Despite these reservations, Fulkerson (1988) suggested that the Toulmin model had “a unique potential” in that it “could be converted into heuristic questions” as follows:

1. “What is my claim?”
2. “What grounds do I have to support it?” ...
3. “What statement could warrant my move from the grounds to the claim?”

4. “How can I back up that warrant?”
5. “How much must I qualify my conclusion as contingent?”
6. “What counter-arguments that would weaken my conclusion do I need to acknowledge?” (p. 446)

Noting that “[n]o book currently available turns Toulmin’s model into an invention scheme,” Fulkerson cites Winterowd (1981) who asserted that the Toulmin model “provides a guide to *prewriting* the persuasive essay” (p. 248).

Overall, however, Fulkerson (1996) challenged the idea that the Toulmin model is an effective means of generating arguments. Fulkerson did, however, make the following concession: “We want students to be able to produce effective arguments. Whether understanding the Toulmin model can help to achieve that goal is as yet an open question, one on which we need considerable research” (p. 28). I disagree with Fulkerson’s criticisms of the Toulmin model, and even with his suggestions for how it could be used to generate arguments. I will address below what I perceive to be the faults in how Fulkerson and Kneupper envision how the Toulmin model could or would be used in instruction as well as providing a rationale for using the Toulmin model in the intervention instruction.

Fulkerson (1996) and Kneupper (1978) provided many useful insights about the possibilities of using the Toulmin model to teach writers how to compose arguments. However, both Fulkerson and Kneupper share one flaw in their view of the Toulmin model, namely that their perspectives are informed by the ineffective practices in the field of teaching writing discussed above. This ineffective instruction is basically a combination of what Hillocks (1995) termed “presentational” and “natural process”

approaches to teaching wherein students are presented with model essays, explicitly instructed in content and structure, and then tasked with creating an essay that meets all of the criteria of the model essay using general procedures of what is commonly termed “the writing process” – planning, drafting, revising, and editing. Such an approach constructs the Toulmin model (or any model for that matter) as a heuristic that cues for knowledge telling. Fulkerson’s “heuristic questions” above start with, “What is my claim?” and follows this with questions that cue the writer to come up with data, and warrants. From a cognitive process perspective, this is backwards. Participants in the present study were taught to examine a range of possible data, look for reasoning that connect data, and then base a claim on data they had warranted. Also, these “heuristic questions” separate components of an argument rather than integrating them as Yeh’s (1998b) Toulmin-based heuristics do.

Like participants in the study by Glynn, Britton, Muth, and Dogan (1982), writers should rather generate content free from all rhetorical restraints, then work with data and warrants to refine the claim. By planning in this manner, cognitive load is reduced and writers can address audience-related task demands (rhetorical concerns) while simultaneously working through content. The result is a claim that is supported by warranted data that the intended audience would find convincing. Scardamalia, Bereiter, and Steinbeck (1984) described how mature writers carry on problem solving sessions internally as they write, moving back and forth from the problem spaces of content and rhetoric. Knowledge telling consists merely of testing an idea for appropriateness and then adding it to an emerging text if the idea passes the test. Knowledge transforming, on the other hand, allows a writer to problem solve whether relevant content is acceptable

and coherent not only to the writer, but to an audience as well, and thus can facilitate the handling of audience related task demands associated with argumentative writing.

Knowledge transforming cannot be supported by instruction that is rooted in presentational or natural process modes, but rather requires Hillocks's "environmental approach."

Hillock's (1995) description of environmental learning in carrying out instruction in argumentative writing with public school students in Chicago informed the intervention instruction for the present study. Given the importance of context, before discussing how the Toulmin model could work in concert with how writers write as revealed by various cognitive models of the writing process, I will first discuss in more detail Hillock's (1986, 1995) concepts of presentational, natural process, and environmental instruction and the impact they have on the quality of student writing.

Hillocks (1986, 1995) presented research findings on three major instructional modes and their impact on the quality of students' compositions. Hillocks described traditional teaching wherein the teacher focuses on imparting content to students directly through texts, analysis of models, and lecture as the "presentational mode." In this mode, students learn with no support from peers, nor from the teacher beyond what has been presented to them, and are expected to produce effective products based on this instruction alone. Hillocks emphasized that the presentational mode does not touch upon process, particularly in the form of feedback, as it "assumes that knowledge can be imparted by teacher or text directly to students prior to engagement in writing and that mastery can be achieved without the support of special teaching structures, such as peer group collaboration, even when the knowledge imparted involves learning the use of

complex strategies” (p. 55-56). Simply presenting students with model essays that demonstrate the structures of finished products does not adequately prepare them to use the complex strategies needed to produce effective writing in that mode.

Hillocks (1995) next described the “natural process mode” which was largely a reaction to perceived inadequacies of the presentational approach to teaching. Practitioners of the natural process approach rejected the overt teaching of the structures of various text types, preferring to allow students to discover their own structures. Similarly, natural process teaching abandoned the practice of determining topics for students to write about, instead encouraging students to choose their own subject matter. In lieu of direct instruction in text types and features, natural process teaching centered on teaching general procedures – planning, drafting, revising, and editing – and, unlike the presentational approach, emphasized providing students with a lot of peer and teacher feedback as writers work through several drafts of each piece. A major focus of natural process teaching was getting students to engage in writing throughout the process and empowering them as writers.

Hillock’s (1995) concept of environmental teaching draws upon some practices associated with the presentational and natural process modes. First, as is the case with the natural process mode, environmental teaching engages students in writing throughout the process, and does encourage the use of general procedures. Second, like the presentational mode, the environmental approach does privilege knowledge of text type and associated structures; however, environmental teaching does not rely on lectures and models to impart knowledge, but rather “provides environments that support students in learning strategies for developing both the content and the form of discourse” (p. 56-57).

What truly sets environmental teaching apart from the other modes is how it handles the relationship of content and form, which must be worked out through the skillful use of complex strategies. Two of Hillock's protégés, Smagorinsky and Smith (1992), claimed that effective writing teachers taking an environmental approach fully understand "the processes entailed in a particular writing tasks" or "task-specific knowledge" and "develop materials and activities that will engage students in processes requisite to particular writing tasks" (p. 56). Finally, Hillocks identified environmental teaching as Vygotskian in its assumptions that, when working to learn complex strategies with informed peers and knowledgeable adults, "students may operate ... well above their normal levels when provided with support appropriate to their current understanding" (p. 57).

Hillocks (1995) asserted that the three different instructional modes he identified –presentational, natural process, and environmental – produced "sharp differences in the quality of student writing" (p. 57) as revealed in a meta-analysis he conducted of nearly 500 experimental studies of the teaching of writing (1986). In order to allow comparisons to be made between and among groups in his synthesis of studies, Hillocks reported results in the form of a standard score expressed in standard deviations above and below the mean. Students in studies of presentational learning environments generally scored only slightly higher on posttests, showing gains of a mere 0.02 SD. Students in studies evaluating natural process approaches showed gains of 0.19 SD. At 0.44 SD, the gains in quality of writing were most pronounced by far for students taught by teachers taking an environmental approach to the teaching of writing.

Hillocks (1995) attributed these positive effects of the environmental mode to the fact that teachers engage students in learning complex strategies “by providing a variety of supports at the outset and gradually withdrawing the supports as students appear to become more fluent in the use of the strategies” (p. 61-62). Environmental learning combines two types of supports which Hillocks has termed “structural” and “small-peer group.” Hillocks defined a structural support as “the provision of aid or restructuring of the task so as it reduces its complexity while retaining its essential features” (p. 62). In my study, the Toulmin model functions as a structural support, or, in Vygotsky’s terms, a scaffold, that will help students to work through persuasive task demands involving content and rhetoric while reducing cognitive load. Hillocks cited the Vygotskian concept of the ZPD, saying that “[b]ecause the task is slightly beyond what students can do independently in the ‘zone of proximal development,’ coaching must be readily available” (p. 65).

Hillocks (1986) also reported on various practices associated with presentational, natural process, and environmental modes of instruction. One of the most central features of presentational writing instruction – the use of model essays – resulted in a weak gain of a mere 0.22 SD. Free writing, which is a staple of the natural process approach, showed an even weaker gain of 0.16 SD. At the heart of the environmental mode is inquiry. Hillocks noted that, at 0.56 SD, instruction based upon an inquiry approach to learning resulted in by far the strongest gains of any instructional practice he analyzed (p. 220).

Hillocks (1995) asserted that past twenty-five years have witnessed considerable improvements in the teaching of writing, particularly due to the introduction of the

teaching of writing as a process that involves the general procedures of planning, drafting, revising, and editing; however, he goes on to argue that “substantial growth in writing” must involve “learning the more specific procedures required in a full range of writing tasks” (p. 76). Argumentative writing, as is the case with any other form, requires writers to understand the structural features of an argument, and more importantly, the specific procedures that facilitate the production of an effective argumentative piece. This emphasis on task-specific procedures sets environmental teaching apart from the presentational and natural process modes. Pointing out that an understanding of an intended audience’s “knowledge, interests, and dispositions” is central to effective argumentative writing, Hillocks underscored the importance of learning task-specific procedures from a skilled teacher who can engage students in inquiry as such procedures are “never the focus of serious attention in school and college textbooks” (p. 82). Such texts merely focus on learning the characteristics of what the text defines as types of writing” then “asks students to generate those characteristics with little to no attention to procedures for generating them” (p. 91).

Perhaps textbooks do not take on the assessment of audience perspectives and the complex strategies to effectively address them simply because they *cannot*. Such learning, Hillocks (1995) argued, must take place in a learning environment that focuses on the problem “as understood by the participants” and that provides them with opportunities to not only generate and revise their own positions on issues but also “to respond to other arguments and perspectives and to reformulate ideas” (p. 86). In describing this learning environment, Hillocks articulated the kind of support young writers need to learn how to handle the complex, audience-related task demands of

argumentative writing: generation of effective supporting data, warranting arguments, and identifying and responding to opposition. In carrying out the present study, I attempted to create this environment in the course of providing scaffolded instruction in the Toulmin model, and support students through the setting and assessing of content, rhetorical, and procedural goals through the use of an intervention protocol I designed for the study. I will discuss how the intervention protocol supported participants as they problem solved argumentative writing task demands at proximal levels later in this review of literature. Next, I will examine in detail independently conducted Toulmin-based studies of secondary students' argumentative writing processes.

Independently Conducted Studies of Argumentative Writing Capabilities

Almost without exception, independently conducted studies of secondary students' argumentative writing abilities begin with assertions about the value of argumentative writing and rehearsals of current NAEP writing assessment data, and end with theories put forth by the researchers as to why secondary students struggle with argumentative writing accompanied by recommendations for addressing perceived areas of deficiency. In her meta-analysis of 47 research studies on "persuasive/argumentative discourse" published in 1988, Crowhurst made an important, overarching assertion that even though young writers encounter and use argumentative discourse in their day-to-day interactions, and appear to be ready developmentally to tackle the content and rhetorical task demands of argumentative writing, research nevertheless reveals that "many young students do not appear to have an appropriate schema for written argument" (p. 36-37). Many studies conducted after 1988 echoed this conclusion, and, in trying to pinpoint specifically what was missing from secondary students' argumentative writing schemas,

researchers revealed one major area of recurring difficulty – addressing concerns related to audience.

Argumentative writing poses more challenges for secondary students than exposition or narration. Citing a four-year study conducted by Applebee, Langer, Mullins, and Jenkins (1990), Bruer (1993) noted that although 53% could compose a factual report and 69% could write a personal narrative at the proficient level, “only 27% of eleventh-graders could write an adequate persuasive essay, and only 1 percent qualified as expert persuasive writers” (p. 5). Similarly, in a study they conducted analyzing the performance of 1,892 students who took part in a district-wide argumentative writing assessment, Schultz and Laine (1987) found that 51% were unable to use evidence and warrants effectively to support a claim, 42% provided “adequate or better than adequate” support and received middle scores on the instrument they used, and only 7% received the highest rating, providing “exceptionally well-elaborated evidence” (p. 3). Given the persistence of the difficulties secondary students experience with argumentative writing, the following observation made by Bruer twenty years ago regarding NAEP scores in all disciplines appears to be valid today:

Many if not most students have difficulty using what they know to interpret an experiment, comprehend a text, or persuade an audience. They can't rise above the rote, factual level to think critically or creatively. They can't apply what they know flexibly and spontaneously to solve ill-structured, ambiguous problems that require interpretation. (p. 5)

The present study aimed at determining whether scaffolded instruction in the Toulmin model and work with each participant within his or her zone of proximal

development could enable students do what Bruer describes above – “apply what they know flexibly and spontaneously to solve ill-structured, ambiguous problems that require interpretation” – a description that very aptly articulates the problems posed by argumentative writing tasks and what a writer must do to successfully solve them. Students who attempt to merely imitate model essays by following a step-by-step simple framework are limited to “the rote, factual level” that often characterizes knowledge telling. Successfully handling the complex task demands of argumentative writing, and particularly those related to audience, require the ability to think “critically and creatively,” and thus require knowledge transforming. One means of improving student performance on argumentative writing tasks is to provide them with scaffolded instruction in cognitive strategies during the prewriting phase as discussed above (Crowhurst, 1991; Glynn et al., 1982; Kellogg, 1994). The present study treated the Toulmin model as a cognitive strategy. Instruction aimed at building a schema for argumentative writing sufficient to enable participants to compose essays that successfully tackled the audience-related task demands of warranting arguments, providing effective supporting data, and addressing opposition. The studies that follow – McCann (1989), Knudson (1992), and Crammond (1998) – share a focus on the cognitive development of students at different grade levels. In each case, the researcher(s) concluded that student writers, even as young as those in upper elementary, show some ability with argumentation and could benefit from instruction in argumentative writing. Due to the large number of studies of argumentative writing, and the fact that the present study will focus on using the Toulmin model as a heuristic for helping participants build

more effective schemas for writing in the argumentative mode, the following review will be limited to studies that feature the Toulmin model.

**Product-Based Studies: Grade-Level Studies of The Toulmin Model as
Evaluative Framework**

McCann (1989) studied the abilities of students in grades 6, 9, and 12 to determine whether a given text is an argument, and to compose an argument in response to a prompt. Students who took part in the study were enrolled at schools in a large, suburban district in the United States. 22 twelfth-graders, 40 ninth-graders, and 33 sixth-graders participated (n=95). McCann constructed seven passages (Appendix A) about different topics for the study, three of which qualified as arguments. Participants were asked to rate the quality of any passage that they had judged to be an argument using a five-point scale. Any passage that was not identified as an argument by participants was given a rating of zero by the researcher. McCann solicited the participation of 22 adults (NCTE writing committee members and university professors) whose evaluations of the sample passages were used as a standard to which student responses were later compared. Having gathered responses from all participants, McCann determined the frequency of positive responses to the question, "Is the above passage an argument?," as well as the percentage of positive responses for each passage. To determine whether a significant difference in responses existed between groups, McCann conducted chi-square tests.

To assess students' argumentative writing capabilities, McCann (1989) asked them to respond to a prompt which required them to take and support a position on the question of whether high school students should be allowed to leave campus during lunch periods (Appendix B). The Toulmin model of argument was used to construct a scoring

guide which assessed “six argumentative traits: claims, data, warrant, proposition, recognition of opposition (qualification), and response to opposition (rebuttal)” (p. 67).

A graduate assistant and a high school English teacher who taught at the school where the study was conducted were instructed in the use of the scoring guide and served as raters in the study. Checking interrater reliability on three occasions using Pearson product-moment correlations, McCann determined an overall reliability factor of .825 .

McCann (1989) concluded that students in grades 6, 9, and 12 possess a high degree of knowledge about arguments. Both the adults, and the students at all three grade levels, succeeded in identifying the three persuasive texts, ranking them as the top three in terms of quality. His analysis of the sample argumentative essays he collected led McCann to conclude that students at all grade levels were capable of making claims and stating propositions. Although the older students generally outperformed the sixth-graders on the writing task, McCann found that all students performed very poorly overall, especially when it came to providing support for arguments, and recognizing and responding to opposing arguments. Students at all three grade levels were equally inept at providing supporting data. Ninth- and twelfth-graders were better at stating claims and using warrants than sixth-graders, but all three groups struggled in these areas, especially warrants which McCann found to be “almost non-existent” among the sixth-graders and “rarely used” by the older students. That participants in McCann’s study could state claims but could not warrant them and provide effective supporting data suggests to me a reliance on the knowledge telling strategy (Bereiter & Scardamalia, 1987) which is instantiated and reinforced by the ineffective instructional practices discussed in detail in Chapter 1. Participants likely generated ideas, and after testing them for appropriateness,

simply added them to the emerging text. Lacking a schema for argumentative writing and effective procedures for conceptual planning, participants could not transform knowledge – that is, they could not render content in a rhetorically effective manner by addressing the audience-related task demands of warranting arguments and addressing opposition in a manner that made supporting data convincing to an intended reader. In conducting the present study, I was especially interested in determining whether, and to what extent, scaffolded instruction in the Toulmin model carried out in each participant's ZPD might facilitate knowledge transforming, thus enabling the sixth-graders I worked with to write more effective arguments wherein they will use warrants to explain data.

McCann summarized his findings, stating that “students in this study have difficulty providing their own prompts to guide the elaboration that will assist the reader in understanding an argument...” and suggested that teachers seeking to improve students' persuasive writing abilities “need to think about ways to instill in students an awareness of the needs of the audience and an ability to be self-critical in developing support” (p.71). McCann proposed that further research in instruction be geared toward helping students rebut, qualify, use warrants, and supply supporting data for their arguments. The present study attempted to engage participants in their zones of proximal development thereby helping them to build schemas for argumentative writing through scaffolded instruction in the Toulmin (1958/2003) model and the intervention protocol I created.

I used McCann's study extensively in designing the present study. The sample arguments used in instruction were taken directly from McCann with only minor adaptations. Participants were asked to identify which passages were arguments, and these

passages informed the intervention instruction in the Toulmin model participants received. Prompts for the pre- and posttest argumentative essays were modeled on McCann's. I used McCann's Toulmin-based assessment rubric, as did Knudson (1992), as one of the scoring rubrics to assess essays for the presence and use of Toulmin-related elements.

Although I used McCann's (1989) study extensively in designing the present study, it is certainly not without flaws, some of which I will try to address in my own study. First and foremost, as is the case with all the quantitative studies I review here, McCann's study may be seen as coming up short of revealing what participants were truly capable of because it measured only actual performance. McCann's study also shares with other quantitative studies a paucity of information about what instruction students have received in argumentative writing. McCann actually provided no information whatsoever about instruction participants received, and this fact might shed some light on his findings. For example, McCann reported that ninth-graders outperformed sixth-graders in the areas of qualification and rebuttal, which makes sense developmentally, but they also outperformed twelfth-graders. What accounts for this? It is possible that ninth-graders received some instruction in argumentative writing that addresses qualification and rebuttal that sixth-graders had not yet received and twelfth-graders, if they attend the same high school, may have received but was not reinforced during the intervening years? That McCann used nearly double the number of ninth-graders (40) as twelfth-graders (22) may also have skewed results. Although interrater reliability was high (.825), one of the raters was a teacher at the high school which may have influenced this rater's perceptions about the quality of essays produced. Another

factor that may have affected essay quality is familiarity with the essay topic – whether or not students should be allowed to leave campus during lunch. The ninth- and twelfth-graders would have had a much better understanding of context and thus could have produced more claims, data, and warrants than the sixth-graders. Finally, beyond identifying the schools as “suburban,” it should be noted that McCann does not provide any information about the school or participants. Students’ socio-economic circumstances, whether or not they qualify for free or reduced meals, and other such factors limit understandings of the context in which the study was conducted, and thus the results of the study itself.

Knudson (1992), like McCann (1989), conducted a study in which she compared the argumentative writing abilities of students at various grade levels. To measure the performance of participants in her study, Knudson used a holistic scoring instrument to rate overall essay quality, as well as the Toulmin-based scoring rubric devised by McCann in order to assess the presence and quality of argumentative writing elements. In an effort to build upon previous research, Knudson then focused upon specific grade-level differences in the sample essays she analyzed and possible reasons for those differences. Participants in Knudson’s study, all of whom were enrolled at schools in an urban sprawl area of southern California and came from lower-middle to middle-class homes, consisted of 65 twelfth-graders, 43 tenth-graders, 41 sixth-graders, and 53 fourth-graders (n=202). Students were asked to respond to two prompts which were administered at a two-week interval. Both responses took the form of a letter written to a school principal. One prompt asked students to argue for or against having more holidays, and the other to propose and support making a change to an existing school

policy. Writing time for each prompt was limited to twenty minutes. Scorers were asked to assess essays using McCann's Toulmin-based rubric (Appendix F). Holistic scoring was carried out using a six-point scale (Appendix E).

Knudson (1992) began the discussion of her findings with results of the holistic assessment which revealed that fourth-graders did not write arguments as well as sixth-, tenth-, or twelfth-graders, and that students overall experienced "difficulty with argumentation and persuasion" (p. 176). Knudson next addressed the specific nature of these difficulties by grade level in terms of the Toulmin model. As did McCann (1989), Knudson found that the ability to state claims and propositions was present at all grade levels, but that these claims were generally not supported, nor were data connected back to claims using warrants. Knudson also discovered that the quality of arguments written by tenth- and twelfth-graders did not differ significantly, but were superior to the quality of the samples composed by fourth-graders. Sixth-graders included more claims than did fourth-graders, and the responses of tenth- and twelfth-graders in turn contained more claims, warrants, and data than did those written by the sixth-graders. Knudson also found, as did McCann, that students at all levels generally failed to state or respond to opposing views.

Concluding that the ability of students to write arguments improves with age, Knudson (1992) offered three theories aimed at explaining the differences she discovered: older students have had more training in writing effective arguments; older students have gained more knowledge about conventions of argument in both written and oral modes; and, older students have a greater knowledge of the prompts and cues that take place in conversation, and have translated that knowledge into their argumentative

writing. To help increase students' competence in writing arguments, Knudson made three suggestions for further research. First, Knudson recommended that connections between students' abilities to write arguments and the logical thinking skills they possess be clarified. Second, Knudson advocated adapting classroom activities to incorporate discussion in order to determine "what kinds of oral language experiences increase children's ability with oral and written argument ..." (p. 179). Third, Knudson proposed that direct instruction in persuasive writing focus more upon instilling in students an awareness of the audience for whom they are writing, especially in terms of generating and addressing opposing viewpoints.

Knudson's (1992) study is important to the present study in several ways. First, her study builds on the work of McCann (1989) in that she, too, examined grade-level differences, studied sixth-graders, used the Toulmin-based rubric devised by McCann to assess essays composed by participants, used a holistic rubric to assess overall quality of essays (the present study used both McCann's Toulmin-based rubric and the NAEP 8th Grade Persuasive Rubric which is holistic), and reported results in terms of the elements of the Toulmin model. Second, her findings are similar to McCann's and indicate an inability on the part of participants to handle the complex task demands of argumentative writing. Knudson stated that although all participants could generate claims that they "do not, however, support their Claims with Data, nor do they link Claims and Data ... with Warrants" (p. 177). Commenting on participants' difficulty with synthesizing the various components of an argument, Knudson elaborated further saying, "these student writers are relatively competent at providing all elements of an argument, but not at providing all elements of an argument and tying these elements together" (p.177). Finally, she cited

difficulty with audience-related task demands as a major reason why students struggle with argumentative writing, attributed the problems in part to lack of effective instruction, and proposed exploring connections between successful handling of task demands and interactions with a conversational partner which, in the present study, was a focus of scaffolded instruction as well as the intervention protocol which was used to create zones of proximal development with each participant.

Although it did much to inform my own work, Knudson's (1992) study nevertheless does have facets that I believe are flawed and that I attempted to address in the present study. First, limiting participants to twenty minutes of writing time skews results in favor of older students who are more fluent in the physical act of writing. According to McCutchen (2006), students are not fluent in transcription until age 10. Differences between the fourth-graders and the older students may be attributed in part to greater writing fluency – both in terms of the physical act and experience in responding to prompts. Also, given the task demands of argumentative writing, expecting participants to process the prompt, do even cursory planning, and produce an essay in 20 minutes seems to me to be an unreasonably short period of time. Second, although the writing tasks are identical in that both instruct students to write a letter to the principal of the school in regards to a matter of school policy – changing a school rule, or whether there should or should not be more school holidays – the task demands do not appear to be equal in difficulty. The pretest demands that writers first access “rules” in long-term memory, evaluate each one to determine whether or it they believe it needs to be changed, and come up with convincing reasons that support their position. Writers are locked into arguing for change, thus putting at a disadvantage students who may not

believe any school rules need to be changed. The posttest task seems to present far fewer challenges, giving writers the option of arguing that there should or should not be more school holidays. Holidays appear to me to be a far more accessible category than “rules,” and writers can support a change or not. These differences indicate to me a failure to consider the matter of cognitive difficulty in writing tasks – a failure that I have seen in other studies as well. Finally, as is true of McCann’s (1989) study, Knudson’s study leaves a lot unexplained. By focusing exclusively on written products, only actual performance is measured and what students might be able to produce at proximal levels is not explored. Nothing is known about participants beyond the fact that they come from lower-middle or middle-class families, and no description of instructional contexts is provided. The theories Knudson offers – all of which amount to asserting that older students have had more exposure to argument – are purely speculative and need not be. Observations of instructional contexts, protocols, interviews, surveys – a host of data sources – could have been used to verify these theories (Stake 1995, 2010). The assertion that students’ argumentative writing improves as they are exposed to its conventions in the course of instruction runs counter to claims that argumentative writing is generally not taught in secondary classrooms (Nystrand & Graff, 2006). I would argue that, especially given how little time participants had to write, grade level differences may be due simply to experience with any type of writing. Older students performed better than younger students, but their essays still were not of a particularly high quality.

For the purposes of the present study, I found Knudson’s description of differences between fourth- and sixth-graders to be of particular interest. Sixth-graders do no better than fourth-graders in the area of audience-related task demands, but do

produce more claims. Sixth-graders thus appear to me to simply be more productive knowledge-tellers. In conducting the present study, I made an effort to learn whether sixth-graders, with the support of scaffolded instruction in an argument model (the Toulmin model) and work in their zones of proximal development, would be able to move from mere knowledge telling to knowledge transforming, that is, to develop the ability to generate convincing supporting data, warrant claims, and recognize and respond to opposition. These findings are rehearsed at length in Chapter 4.

Unlike participants in Knudson's study who had a mere 20 minutes to plan and compose an argumentative essay, students taking part in the present study did not have any time limits imposed on their processes. Pretest, posttest, and independent essay tasks were designed to be identical in audience (the school principal), form (a letter), and task demands (arguing for or against a proposed change to school policy). Written products (pretest, posttest, and independent essays as well as writing produced in conjunction with the intervention instruction) were supplemented with protocol data to inform assertions made about the effects of scaffolded instruction in the Toulmin model on participants' problem-solving processes. Pretest and posttest essays composed under protocol conditions aimed at revealing what participants could do at proximal levels within their zones of proximal development, and the independent essays allowed me to assess what these four sixth-grade writers could do at actual levels after all six units of the intervention instruction had been delivered. Central to the present study was how participants understood the elements of argumentative discourse, and how these elements worked together as they problem solved task demands and engaged in knowledge transforming.

As did McCann (1989) and Knudson (1992), Crammond (1998) also studied grade-level differences in the abilities of students to compose arguments. Participants in Crammond's study consisted of students in grades 6, 8, and 10, and seven professional writers. Focusing on various argument structures employed by "expert writers" and students, Crammond made a few alterations to the Toulmin model, one of which was to include "instances of the arguer's rebuttal of potential threats to the claim" which she terms "Constructed Rebuttals" (p. 235). Using an assessment tool based on her more elaborate conceptualization of Toulmin's model, Crammond set out to determine how the argumentative writing abilities of students develop as they mature, and to compare persuasive pieces composed by student writers to texts generated by "expert writers" performing the same task.

Participants in Crammond's (1998) study consisted of 7 professional writers who regularly wrote persuasive pieces for newspapers or magazines. These experts had as many as 18 and as few as 3 years of experience on the job. Students selected for the study attended public schools in a large, suburban school system. One class of tenth-graders (n=27), one class of eighth-graders (n=28), and two classes of sixth-graders (n=56) took part. All participants were given the same task: to write an opinion piece on whether or not they are in favor of human beings training animals to serve a variety of purposes. To counteract the possible lack of prior knowledge on the part of some younger students, and to increase possible content for the essay, Crammond provided each participant with a collage depicting the use of trained animals by humans. Expert writers completed the persuasive essay at their places of employment, devoting anywhere from 20 to 60 minutes to the task. Experts were also asked to perform think-alouds as

they wrote. Students in grades 8 and 10 wrote the argumentative piece as a graded class assignment, and sixth-grade participants completed the task as a component of a system-wide assessment of students' reading and writing abilities. Student taking part in the study took anywhere from 30 to 50 minutes to finish the essay. In addition to receiving the written prompt and being encouraged to use the collage to generate ideas, students at all grade levels had the prompt read aloud to them prior to writing.

Crammond (1998) randomly selected 12 student texts, two from each of the sixth-grade classes and four each from the eighth- and tenth-grade classes, to compare with the 7 essays composed by the expert writers. Using the modified Toulmin schematic she created, Crammond assessed whether, and to what extent, student and expert essays included "argument substructures," among which were claims, data, warrants, and constructed rebuttals. Crammond quantified the argument structures present in the sample essays by analyzing the "(a) number of texts in each group containing at least one argument structure, (b) proportion of text accounted for by argument structures, (c) total number of arguments per text, and (d) density of argument structures in each text (argument structure per clausal segment)" (p. 241).

Having applied these criteria, Crammond (1998) concluded that all participants, with the exception of one eighth- and one sixth-grade student, included one or more argument structures in their essays. Furthermore, expert texts consisted entirely of argument structures, and student texts were comprised almost entirely of such structures. Experts also created texts with a greater number of arguments, and their essays were characterized by greater argument density. Like McCann (1989) and Knudson (1992), Crammond discovered that student writers in her study at all grade levels did not make

effective use of warrants. Crammond's findings, however, differed greatly from those of McCann and Knudson in that 80% of student writers in her study used some form of opposition – a component that McCann and Knudson found lacking in the texts produced by participants in their studies. In terms of opposition, the essays written by grade 10 students in Crammond's study most closely resembled the expert essays in that the tenth-graders included more Constructed Rebuttals – a more sophisticated form of opposition that experts used more than any other type.

Crammond's (1998) study suggests that attentional overload experienced by students may be reduced by generating or furnishing prior knowledge, and that in doing so, the quality of students' persuasive writing may be improved. By asking students to engage in thought about the use of trained animals prior to writing, Crammond eliminated much of the work involved in the collecting phase and got them off to a good start with planning. That students could benefit from this prewriting activity even though they made no written record of their thoughts is supported by Kellogg (1994) who discovered that outlining prior to writing is equally beneficial whether performed internally or externally. The collage depicting trained animals used by humans in a number of contexts may also have helped each participant to determine his or her position on the issue (e.g., arguing that the use of trained animals is acceptable in some circumstances but not others).

Crammond's (1998) study was significant to the present study in that she, like McCann (1989) and Knudson (1992) also examined grade level differences in students' argumentative writing capabilities, and used the Toulmin model as a means of analyzing the presence and quality of argumentative writing elements. Crammond classified an

essay as an argument if it contained what she termed a “claim-data complex,” and, in noting that all but two students participating in the study composed an argument by her definition, concluded that “the ability to produce a basic written argument is acquired at a relatively early age – at least by grade 6” (p. 249). Crammond thus may be added to a list of researchers who have found that sixth-grade students are capable of benefitting from instruction in argument (Bereiter & Scardamalia, 1987; Knudson, 1992; McCann, 1989). This finding influenced in part my decision to select sixth-grade writers for the present study. Crammond also found that students participating in her study were capable of stating claims and providing at least some supporting data, but did not connect data and claims through warrants. McCann (1989) and Knudson (1992) also found this to be the case. Crammond associated warranting arguments with rhetorical effectiveness, saying that writers who warrant arguments are “engaging in a type of audience-centered activity that involves recognizing the need to explain or justify the link made between the data and the claim” (p. 250). Warranting arguments is thus a key indicator that a writer has gone beyond knowledge telling – which can be used to produce essays that simply state claims and data – and has engaged in knowledge transforming – a strategy that demands moving back and forth between the problem spaces of content and rhetoric.

One point on which I disagree with Crammond is her classification of warrants as “optional or elaborative” (p. 236). Although the Toulmin model is a framework that can accommodate informal arguments, and it is sometimes the case that a warrant may be implied rather than explicitly stated, warrants make up one-third of the core of Toulmin’s model of data-claim-warrant and, especially when a task is deliberative, are in no way optional. A writer seeking to convince an audience to accept his or her position on a

deliberative claim must provide warrants, and convincing and relevant ones at that. Failure to do so does not simply render the argument ineffective, it often reduces the essay a series of groundless assertions and supports. An essay must do more than this to be considered an argument. Crammond's categorization of warrants as optional is especially difficult to understand given her statement that "establishing mutually agreed on premises, beliefs, and feelings of a shared context with the audience" is not only rhetorically effective, but failing to warrant arguments "explicitly in the text may indicate that the author is not sufficiently aware of the audience's needs or background to make that decision" (p. 250-251). A writer employing the knowledge telling strategy can take a position and list evidence to support a claim. Knowledge transforming, however, requires an awareness of audience and is essential to writing successful arguments wherein the audience-related task demands of warranting claims, providing convincing supporting data, and recognizing and responding to opposing viewpoints is handled effectively by the writer.

In addition to differing with Crammond (1998) on the matter of warrants being optional, I found some other aspects of her study to be problematic. First, as is the case with the studies conducted by McCann (1989) and Knudson (1992), Crammond's study focused exclusively on analyzing written products and thus measures only actual performance levels. Also, Crammond, like McCann and Knudson, provided no information about participants or instructional contexts, thereby limiting the meaning to be made from the data she presented. It cannot be ignored that potentially confounding differences exist in the conditions under which participants performed writing tasks. The eighth- and tenth-graders, who composed the essays as a graded assignment, may have

had different levels of motivation to perform successfully than sixth-graders, who completed the essay as part of a standardized test. It is unclear whether or not sixth-graders had the same teacher and thus performance among these participants may have varied due to differences in instruction. Expert writers provided think alouds while composing and student writers did not. The time range given for student writers of 30-50 minutes does not clearly indicate constraints. Did all students have unlimited time? Were students writing in class given more or less time than students completing the task for the standardized assessment, or vice-versa? Students taking part in the present study wrote under the same constraints and conditions. I will discuss at length below the contextual factors related to participants and instructional contexts both in the classroom and those that shape the intervention instruction. Finally, and most importantly, the argumentative writing capabilities of participants were thoroughly analyzed at both actual and proximal levels of performance.

The three studies of grade level differences of students' argumentative writing capabilities reviewed above – McCann (1989), Knudson (1992), and Crammond (1998) – used modified versions of the Toulmin model to analyze and discuss the features and qualities of argumentative essays composed by study participants. All three found that students struggle with providing effective supporting data and warranting arguments. McCann and Knudson found students also struggle with opposition and response to opposition. Crammond's finding that 80% of participants used some form of opposition is unusual and may be due to differences in how she classified this argument feature. The present study built on the work of these researchers in that whether participants could generate convincing data, connect data to claims with warrants, and anticipate and

address opposing viewpoints as a result of scaffolded instruction in the Toulmin model, were major areas of focus. These researchers also confirmed Bereiter and Scardamalia's (1987) finding that sixth-grade writers are developmentally ready to benefit from instruction in argumentative writing. The instruction in the Toulmin model, along with the intervention protocol, aimed at instantiating and building a schema for argumentative discourse by engaging participants in their zones of proximal development.

An important feature of the present study is that, unlike the studies conducted by McCann (1989), Knudson (1992), and Crammond (1998), it did not adapt or alter the Toulmin model in any way. Instruction and evaluation of essays was based on the three core aspects of the model as conceived of by Toulmin – data, claim, and warrant. Whereas McCann, Knudson, and Crammond limited their use of the Toulmin model to analyzing essays produced by participants and presenting theories as to why students struggle with argumentative writing, Yeh (1998a, 1998b), and Lunsford (2002) examined the viability and effectiveness of using the Toulmin model as a heuristic to teach study participants how to write argumentative essays. In the following section, I will discuss studies by these researchers in detail.

Process-Based Studies: The Toulmin Model as Heuristic

Yeh (1998a, 1998b) investigated how the Toulmin model might be used in actual instruction. His interest in understanding how elements of the model might interact in the writer's mind constitute a departure from the work of McCann (1989), Knudson (1992), and Crammond (1998) whose interest in the model was limited to using it to evaluate written products. In his study, "Validation of a Scheme for Assessing Argumentative Writing of Middle School Students," Yeh (1998a) reported the results of two studies he

conducted in an effort to account for unexplained variance in holistic scoring of argumentative essays using Toulmin-based rubrics. Each study focused on different factors that impacted the evaluative processes of raters. According to Yeh, the first study, CLAIM-CLARITY, assessed the effects of claim clarity, reason strength, strength of rebuttals to counterarguments, the rater's personal values, and the rater's topic knowledge. Finding that only 33% of holistic score variance could be attributed to these factors, Yeh designed and ran a second study, DEVELOPMENT, that assessed the effects of development, voice, and conventions. In this second study, 63% of variance in holistic scores could be accounted for, a result that Yeh concluded was due to a scheme (i.e., the Toulmin model) that "fostered integrated rather than isolated consideration of argument elements" (p. 123).

Yeh (1998a) designed his Toulmin-based rubrics while preparing to do a study of seventh-grade students' argumentative writing capabilities ("Empowering, 1998b, discussed below). Yeh found the Toulmin model to be a viable alternative to commonly used approaches to teaching and assessing argumentative writing, most notably those that privilege teaching students about various fallacies, for the following reasons: the Toulmin model is not too complicated for younger writers; it addresses the kind of everyday, informal arguments middle-school students engage in; it is widely accepted and used in both speech and writing contexts; and, perhaps most importantly given the focus of the present study, it "suggests both goals and procedures for writing a simple argument, facilitating instruction of novices" (p. 127). This capacity of the Toulmin model to serve as a framework for setting content, rhetorical, and procedural goals suggests to me that it thus has great potential for engaging participants in knowledge

transforming. Yeh envisioned the Toulmin model as being useful to writing teachers who could translate the component parts into “steps” that can be used to guide students through the procedures involved in writing an argumentative essay. Similarly, the Toulmin model permits raters to analyze the effectiveness of an argumentative essay by evaluating the extent to which the writer has fulfilled each argument function. Although other researchers have conducted evaluative studies that used the Toulmin model to assess the quality of argumentative essays produced by study participants (Crammond, 1998; Knudson, 1992; McCann, 1989), Yeh claimed that his scheme differs from theirs in that it accounts for how argument components work together rather than assessing them individually. Yeh underscored the importance of devising a valid, widely usable scheme for assessing the argumentative writing of secondary students, claiming that the lack of such a scheme is an obstacle to conducting a variety of studies in this area. As a consequence, Yeh believed classroom practitioners could not provide the most effective instruction to their students, a failure that would have a negative impact on their future success in college and career contexts.

Yeh’s (1998a) theoretical framework for his studies was based on the Toulmin (1958/2003) model. The analytical tools focused on logical appeals, and also the *ethos* and *pathos* of classical rhetoric which he termed “credibility appeals” and “affective appeals” respectively. For my purposes, I privileged here the Toulmin-related components of “claim clarity” (claims), “reason strength” (warrants), and “rebuttal to counterargument” (opposition) of the CLAIM-CLARITY study for the following reasons: the present study focused primarily on the effects of scaffolded instruction in the Toulmin model, and I was therefore concerned almost exclusively with how the

scheme assesses logical appeals; Yeh's scheme for CLAIM-CLARITY (Table 1, below) includes only ratings for logical appeals — "claim clarity," "reasons," and "rebuttal"; Yeh found raters' values to be so inconsequential that he decided to "disregard" them; and finally, Yeh's finding that a rater's topic knowledge must be "sufficient" to adequately evaluate an argument is neither informative nor useful to me in conducting this study.

Table 1

*Yeh's Scheme for CLAIM-CLARITY Study***Claim Clarity Rating Scale**

- 1 point: No claim can be identified.
- 2 points: The argument contains conflicting claims and it isn't clear which claim is intended to be primary.
- 3 points: The argument contains conflicting claims, but the primary claim seems clear.
- 4 points: The argument contains several consistent claims, but it isn't clear which claim is intended to be primary.
- 5 points: The argument clearly contains one primary claim, but this claim may be interpreted in more than one way.
- 6 points: The argument clearly contains one primary claim that may only be interpreted in one way.

Reasons Rating Scale

- 1 point: The reasons appear to contradict the claim.
- 2 points: The reasons do not contradict the claim, but are not relevant to the claim.
- 3 points: The reasons are relevant but unimportant, relative to other reasons, providing only weak justification for the claim.
- 4 points: The reasons are relevant and important, but weakly stated, providing only weak justification for the claim.
- 5 points: The reasons are relevant, important, and strongly stated, but not in a way that provides the strongest possible justification for the claim.
- 6 points: The reasons are relevant, important, and strongly stated in a way that provides the strongest possible justification for the claim.

Rebuttal Rating Scale

- 1 point: No rebuttals have been mentioned.
- 2 points: Some relatively unimportant rebuttals are stated but not refuted.
- 3 points: One or more important rebuttals are stated but not refuted.
- 4 points: Some relatively unimportant rebuttals are stated and convincingly refuted.
- 5 points: Some, but not all, important rebuttals are stated and refuted.
- 6 points: All important rebuttals have been convincingly refuted.

Similarly, I focused only on the Toulmin-based “development” portion (claims supported by data and warrants) of the DEVELOPMENT study. Yeh found “development” to be the strongest factor influencing a rater’s scoring, and although I agree with Yeh that voice and conventions are most certainly important factors in composing and evaluating

argumentative essays, these factors were not relevant to the present study due to the incompatibility of the evaluation instruments.

For his first study, CLAIM-CLARITY, Yeh (1998a) selected the criteria of claim clarity and reason strength based on the findings of Knudson (1992) who discovered these factors accounted for 28%, 39%, and 44% of holistic scoring variance on three sample essays composed by participants in her study of the grade-level differences in argumentative writing abilities of fourth-, sixth-, tenth-, and twelfth-graders. Because he deemed rebuttals to be an important component of an effective argumentative essay, Yeh added rebuttals to his rubric, but only, he said, as “an exploratory variable” (p. 131).

Yeh (1998a) used a 2 x 2 x 2 x 2 factorial design to assess claim clarity (“clear or unclear”), reason strength (“strong/true or weak/untrue”), and counterargument refutation (“strong or weak”), with qualitative holistic rating of essays as the dependent variable. Yeh composed 16 argumentative essays covering 8 controversial topics designed to correspond to the factors and qualities to be assessed. Yeh selected five individuals who had coached or judged debate, and writing teachers from three different levels (high, middle, and elementary) to serve as raters for this study. To assess raters’ values, Yeh administered surveys based on a six-point Likert scale that asked them to indicate degree of agreement or disagreement with statements relevant to the eight essay topics (e.g., “Children should be taught not to interrupt adults,” p. 133). A second questionnaire, identical to the first in terms of the eight essay topics, elicited true/false responses in order to determine how much topic knowledge raters possessed. As mentioned above, I will not focus here on Yeh’s analysis of values or topic knowledge because Yeh did not include these in his rubric, and his findings about these facets were neither informative

nor relevant to the present study. By way of procedures, each rater independently read and scored eight essays using a holistic rubric. Yeh did not provide this rubric, making comparisons between the holistic rubric and the rubrics he created impossible, thus preventing readers from arriving at the fullest possible understanding of his data. After giving each essay a holistic score, each rater then scored each essay again using the six-point rubric Yeh devised (Table 1, above) that asks them to use rating scales to assess the quality of claim clarity, reasons, and rebuttal.

In reporting the results of CLAIM-CLARITY, Yeh (1998a) stated that the five factors studied “explained only about a third of the total variance in holistic scores, suggesting the need to identify additional factors” (p. 136). He noted significant effects for claim clarity and counterargument rebuttals which accounted for 20% of total variance. Interestingly to me, however, he makes no mention of reason strength whatsoever. Given that Yeh stated that he would report only significant effects, I am left to conclude that no significant effects for reason strength were found. This could mean that essays did not provide strong reasons, or that raters had difficulty using the rubric to identify them. A major focus of the present study was determining if, and to what extent, participants could provide strong supporting data, and connect this data to claims using warrants. Yeh’s rubric for CLAIM-CLARITY thus could not be of use to me in carrying out the present study as a compliment or alternative to McCann’s (1989) Toulmin-based holistic scoring rubric used by both McCann and Knudson (1992). As did McCann and Knudson, Yeh separated the Toulmin elements here. The rubric he designed for his study, DEVELOPMENT, however, does integrate these elements, and thus was a viable option for use in this study.

Yeh (1998a) ran his study, DEVELOPMENT, in an effort to account for the two-thirds of variance in holistic argumentative essay scores unaccounted for in his study, CLAIM-CLARITY. In the course of conducting interviews with raters from the CLAIM-CLARITY study, Yeh determined that the following factors could explain the variance – “the development, organization, focus, and clarity of the essays,” “voice or use of language for rhetorical effect,” and “conventions regarding correctness, that is, mechanics, usage, grammar, and spelling” (p. 138). Yeh’s scheme once more utilized a rubric based on Toulmin’s (1958/2003) model of argument to assess the quality of logical appeals. Yeh reiterated that his decision to use the Toulmin model was due to its wide acceptance and use, age-appropriateness, capacity for indicating both goals and procedures for writers, and the fact that it is applicable to the day-to-day, informal arguments middle-school students routinely participate in. I will focus here on Yeh’s discussion of development as this facet of his study was relevant to my Toulmin-based study, and the other two aspects – voice and conventions – although important factors in composing and assessing argumentative essays, was nevertheless irrelevant to the present study.

Yeh (1998a) once again used a 2 x 2 x 2 x 2 factorial design, this time to assess essays as follows: development (“strong or weak”), voice (“strong or weak”), and conventions (“correct or incorrect”) (p. 142). Yeh composed eight essays for this study, this time modeled after actual student essays, which were designed to reflect different combination of the factors and qualities he targeted. Yeh then asked his raters to score the essays once again using the six-point Toulmin-based rubric he created (Table 2, below)

Table 2

Yeh's Toulmin-Based Rubric

Points	Development, Organization, Focus, and Clarity	Voice	Conventions
1	No single identifiable primary claim or proposal (which might be: "In this essay I will argue that the arguments for X are inconclusive...").	No voice (credibility or emotional appeal).	Continual errors in usage, grammar, punctuation, and spelling
2	Definite, well-qualified claim or proposal unsupported by identifiable premises connected to the claim by a warrant	Extremely immature voice/language for the audience.	Many errors confuse the reader (4 types).
3	Definite claim supported by a weak premise and warrant; overlooks stronger arguments, important objections or alternatives.	Moderately immature voice/language.	Many errors (3 types).
4	Definite claim. Strong but undeveloped reasons: reader must infer subarguments for premises and warrant, and against objections or alternatives.	Somewhat immature voice/language.	Occasional errors (2 types).
5	Definite claim supported by strong, developed arguments. Clarity could be enhanced through definition, elaboration, illustration, explicit connections, and conciseness.	Mature but bland voice/language.	Infrequent errors (1 type).
6	Starts with a clear statement of problem, importance, and definite, well-qualified claim or proposal. Chooses and develops one or two strongest supporting arguments, stating and defending each premise with evidence or examples and, if not obvious, how it supports the claim. Responds to major objections and alternatives and the arguments on which they are based. Conclusion punctuates the argument. Each section and paragraph is clearly, if not explicitly, related to thesis. Arguments given one by one; generally one point per paragraph, without repetition, in a logical order, and weighted by importance. Key terms, ideas, and connections are defined, elaborated, and illustrated to avoid misinterpretation. Little knowledge is presumed. Sentences build on each other through connecting words or ideas. Wording is clear, concise, and consistent.	Mature voice—defined as: appropriate, sophisticated, audience-centered, vivid language filled with conviction.	Virtually error-free

Yeh instructed raters to follow a uniform set of procedures that asked them to begin at the top of the rubric, deciding if an essay should be awarded even 1 point for a given factor, and then work downward to determine how many points should be given for each factor. Whereas the rubric for CLAIM-CLARITY separated the Toulmin elements, the DEVELOPMENT rubric integrated the elements of claims, warrants, rebuttals (“objections or alternatives”), and data (“reasons,” “premises,” “arguments” inextricably connected to warrants to support claims). Yeh explained his rationale for an integrated rubric, explaining that “a rating scheme that focuses on individual elements in isolation from each other may not accurately evaluate the strength of the argument as a whole” (p. 139).

Using an ANOVA, Yeh (1998a) found significant effects for all three factors – development, voice, and conventions. Yeh also noted a significant interaction between development and conventions that showed “errors in mechanics, usage, grammar, and spelling have a disproportionately negative effect on holistic ratings when development is strong, versus essays where development is weak” (p. 144). Additionally, Yeh found voice did not have a significant effect on holistic ratings, but did have a significant effect on development.

In his discussion of DEVELOPMENT, Yeh (1998a) stated that results “suggest that scales for development, voice, and conventions measure important factors influencing overall ratings of arguments written by middle school students” (p. 144), and, coupled with post-study interviews conducted with raters, support the validity of the three-factor rubric he designed for use with students who fall within the range of that scale (i.e., are not functioning well-below or well-above grade level). Development,

voice, and conventions accounted for 63% of holistic scoring variance, with development being the strongest influence. Yeh emphasized that the validity of his scheme for DEVELOPMENT rests on two major aspects – the integration of related argument components in the rubric, and the uniform procedures used by raters that was guided by priorities. Yeh believed the rubric used by raters in the study could also be used by students to assess the quality of their own argumentative writing.

Yeh's (1998a) "Validation" study provided some very useful tools and rationale material for the present study. First, Yeh presented a convincing argument that the Toulmin model may be used not only as a basis for devising valid assessment rubrics, but may also serve as a framework for devising effective instruction in argumentative writing with middle school students. Second, although his rubric for CLAIM-CLARITY is unusable for the present study due to a complete lack of data on reason strength, his rubric for the development facet of his DEVELOPMENT study is superior to any others I have come across in the research literature in that it does, indeed, reflect how the components of the Toulmin model work together. A major focus of this study was determining if, how, and to what extent participants moved from the SEE model – a "simple framework" (Hayes, 2006) that prompts for and limits writers to knowledge telling – to using the Toulmin model – a "complex framework" (Hayes, 2006) that prompts writers to engage in knowledge transforming. Third, Yeh outlined scoring procedures that I could use with the co-rater for the present study that may allow us to do a better job of ensuring accuracy than if we had no uniform scoring procedures.

Yeh's (1998a) "Validation" study, as useful as it is, is not without flaws. Although Yeh did conduct post-scoring interviews with raters, he did not do so with the

student writers, and thus, as was the case with McCann (1989), Knudson (1992), and Crammond (1998), Yeh is able to report only on actual performance levels and can only speculate about possible proximal performance. This is, however, understandable as Yeh's focus was determining the validity of a scheme for rating middle school students' argumentative essays. Another study, "Empowering" (1998b, below), examined how seventh-grade participants used the heuristics he tested, one of which was Toulmin-based. Second, although Yeh was able to present an assessment scheme that reflects an understanding of the complexities of argumentative writing, his recommendation that the Toulmin model can be broken down into "steps" for young writers to follow reflects principles of ineffective writing instruction that cues for knowledge telling rehearsed at length in Chapter 1 of this study, and does not reflect a perspective on writing as recursive and goal-directed. Finally, as was noted above, Yeh limited the meaning to be made from this study by failing to provide the holistic rubric he used and not reporting on all findings, even those that were not significant, necessitating speculation on the part of readers.

Having determined that the Toulmin (1958/2003) model could be used as a valid scheme for assessing middle school students' argumentative essays, Yeh conducted a second study (1998b), "Empowering Education: Teaching Argumentative Writing to Cultural Minority Middle School Students." Using both quasi-experimental and case study methodologies, Yeh examined the effects of direct instruction in two argumentative writing heuristics on the quality of seventh-grade students' argumentative essays. Participants assigned to an experimental group received a total of two hours of instruction over the course of six weeks in two argumentative writing heuristics – one based on

Toulmin's (1958/2003) Model of Argument and the other a simplified version of classical stasis theory. The control group received writing instruction in general procedures with a focus on using webbing to plan essays. Students in both groups read brief articles and responded to prompts about some controversial topic every two to three days over the course of six weeks. Yeh composed both the articles and the prompts. Students in both groups also participated in debates about the topics, and engaged in peer response to essays – both practices identified by Yeh as being associated with an “immersion” approach to teaching and learning. At the conclusion of the six-week instructional period, Yeh also interviewed 36 participants – 18 from each group – and questioned them about the qualities of a strong argumentative essay, and the strategies and procedures used to compose such an essay.

In designing a study where the only difference between the experimental and control groups was the pre-writing instruction they received, Yeh's primary objective was to examine the effects of direct instruction in heuristics on the quality of argumentative essays composed by seventh-grade students participating in the study. A secondary objective was to address the criticism that teaching minority students heuristics designed to aid them in composing essays with a thesis-support pattern was culturally intrusive and would result in “stilted” writing.

Study participants attended two schools in two different cities in the San Francisco Bay area. Both schools were located in low-income communities, and of the 116 students who took part in the study, 74% qualified for free or reduced-price lunches. As the title of his article suggests, most of the participants in Yeh's study were “minorities”: Hispanics made up 71% of participants, African-Americans comprised

14%, 9% were white, and the remaining 6% were Asian-American. Using the Stanford Achievement Test (SAT) and the Comprehensive Test of Basic Skills (CTBS) to assess students' level of preparedness to handle the demands of study-related tasks, Yeh determined the reading levels of participants to be "low and unequal" with participants in the experimental group having lower scores overall.

Yeh (1998b) selected two teachers, one from each of the two schools, each of whom provided instruction to one experimental group and one control group. By way of a pretest, participants were asked to read two short articles – one pro, one con – on the subject of dumping toxic waste in the ocean, and then compose an essay that asked them to take and support a position on the issue. At the conclusion of the six-week instructional period, participants again read two articles – one pro, one con – on the topic of whether or not people should drink alcohol, and were then asked to write an essay taking and supporting a position. Yeh selected these two subjects because he deemed them to be "unfamiliar" to students. In evaluating posttest essays about alcohol consumption, Yeh noted stronger voice.

Yeh (1998b) devised two argumentative writing heuristics. Explicit instruction in these heuristics was provided to the experimental group during the six-week duration of the study. The first (Figure 7, below), which Yeh termed "the pyramid heuristic," is based on Toulmin's (1958/2003) Model of Argument. The slot for "OPINION" corresponds to "claim;" boxes labeled "REASON" correspond to "warrants," and those labeled "WHY?" appear to be supports combining "data" and "backing" (information that supports a warrant). Unlike the Toulmin heuristic I use in my study, Yeh's modified heuristic has a slot for "counterargument." Yeh stated that he believes that the Toulmin

model is valuable in the teaching of argumentative writing because “it goes beyond models that simply suggest that writers support their claims” and rather “delineates three different kinds of support: reasons, connections (warrants and backing), and responses to counterarguments” (p. 59).

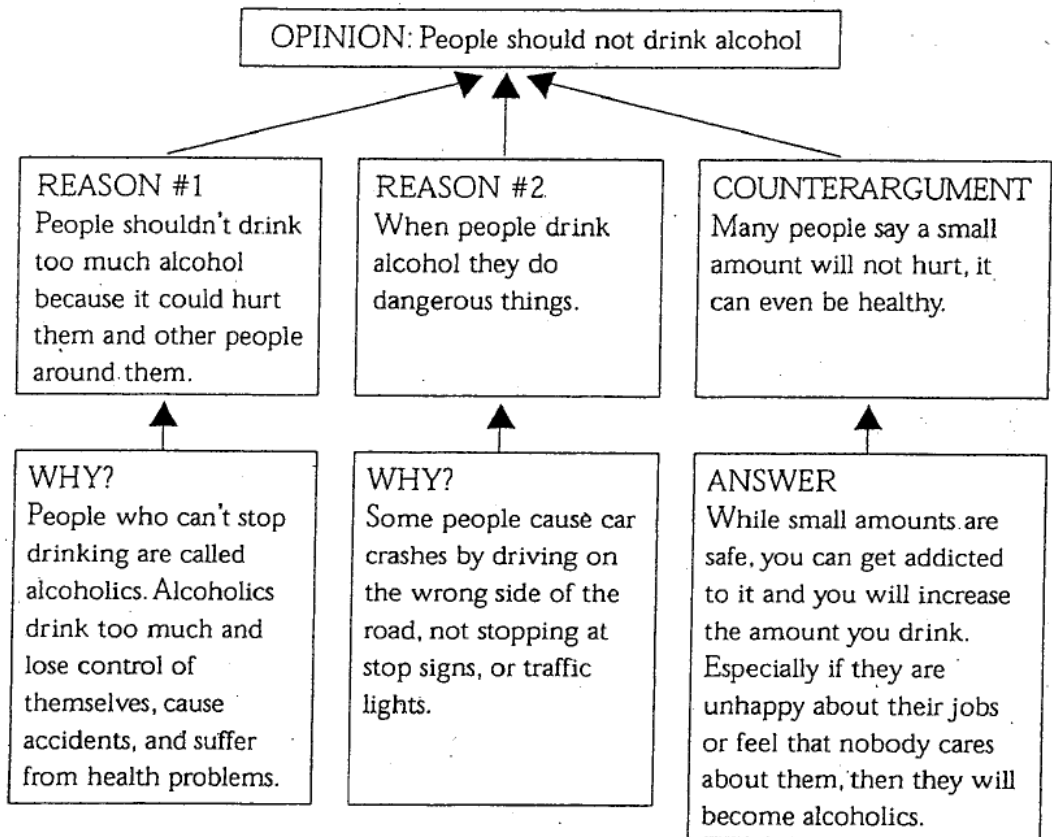


Figure 7. Example of an experimental student’s pyramid (with corrected spelling).

Students in the experimental group also received instruction in a “bridge heuristic” based on classical stasis theory (Figure 8, below), the purpose of which was to “scaffold students as they learned to reason by supporting and defending premises that connected reasoning to their claims” (p.60).

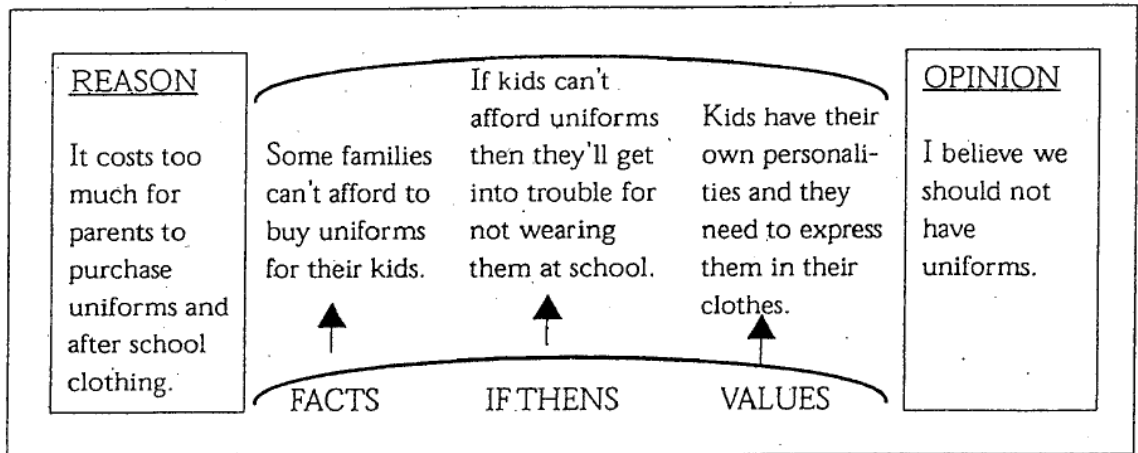


Figure 8. Example of an experimental student’s bridge (with corrected spelling).

Although the bridge heuristic appears to be a very useful tool for teaching young writers to compose well-supported argumentative essays, I did not make use of it in my study which aimed at examining the effectiveness of the Toulmin model alone and did not address stasis theory. Unfortunately, because Yeh’s experimental group received instruction in both models, and Yeh did not at any point in his study assess the effects of the Toulmin-based pyramid heuristic in isolation, I cannot draw any conclusions about the effectiveness of the Toulmin model as gains may be due to instruction in the bridge model or the combination of instruction in both models. Yeh does introduce here the role of scaffolding in writing instruction. Vygotsky’s (1986) zone of proximal development provided the theoretical framework for the present study. Rather than using a second heuristic to assist students in working through the audience-related task demands of argumentative writing, I used an intervention protocol to create a ZPD to guide students through the process of problem-solving the audience-related task demands of argumentative writing.

Yeh (1998b) and two trained ETS co-raters scored pre- and post-test essays using rubrics designed to assess three areas – development, voice, and conventions. Inter-rater reliability was .95 for development, .89 for voice, and .85 for conventions. Given the focus of my study, gains in the area of development were of greatest interest. Yeh and his co-raters found statistically significant gains for minorities as a group in the area of development. White students showed no gains, and, in fact, actually showed losses from pre- to post-test, although these losses were not found to be statistically significant. The data showed the same trend in the area of voice. Yeh also assigned essays to one of four categories assessing how students in the experimental group utilized the heuristics. To Yeh, the most interesting finding was that 43.6% of participants composed posttest essays wherein “all pyramid elements were included” and “modified in order and in number” (p. 68). Yeh found this to be of great importance because he believed this indicated that, rather than simply applying heuristics in a rote fashion, writers were using them “flexibly.” This finding countered the frequent criticism that explicit writing instruction tends to restrict writers, and thus the essays they produce, to the format of heuristics they are taught.

In addition to assessing pre- and post-test essay data, Yeh (1998b) also conducted interviews with 36 participants – 18 from the experimental group and 18 from the control group – about what constituted a “strong argument.” Upon questioning the control group participants, Yeh found 78% gave responses that “focused on conventions regarding spelling and punctuation, provided vague answers, or indicated that they did not know the answer” and only 22% “focused on how reasons support or were connected to the claim” (p. 75). In contrast, 61% of experimental group participants “focused on how reasons

supported or were connected to the claim” (p. 75). When questioned about procedures, 61% also responded that writing effective arguments demands making strong connections between reasons and claims as well as the “organization of these elements into a coherent argument structure” (p. 75). Once again addressing the issue of flexibility and the potential for writers to transfer procedures learned from the heuristics to other tasks, Yeh concluded that “[q]ualitative analysis also showed that students did not merely follow rote procedures but learned to apply the principles underlying the pyramid and bridge heuristics” (p. 71).

Yeh (1998b) concluded his study by reasserting that instruction in heuristics for argumentative writing enabled seventh-grade minority students to write argumentative essays wherein they provided strong support, connected that support to their claims, and did not sacrifice voice or produce “stilted” writing, a finding that contradicts the opinions of opponents of explicit writing instruction. In an effort to establish a cause-effect relationship between instruction in argumentative heuristics and gains in posttest essay quality, Yeh argued that because the pre-writing instruction was the only difference between the experimental and control groups, that “[t]herefore, it can be inferred that the heuristic caused the observed improvement in the support and voice of the argumentative essays” composed by participants in the experimental group who “were concerned about connecting their reasons to their claims rather than merely focusing on procedures” (p.76).

Yeh’s (1998b) study is relevant to the present study in several ways. First, the present study examined the problem-solving processes of four sixth-graders. Yeh’s seventh-grade participants are close enough in age to the students I worked with to

provide me with reason to believe that they, too, are developmentally ready to benefit from scaffolded instruction in the Toulmin model. Second, Yeh's study provides evidence that writers, even at a young age, can understand and meaningfully use the Toulmin model to produce more effective essays than they were able to produce prior to instruction. The participants in Yeh's study appear to be able to "apply what they know flexibly and spontaneously to solve ill-structured, ambiguous problems that require interpretation," thus realizing Bruer's (1993) vision of what schooling should provide our nation's young people. As a result of instruction, participants in Yeh's study appear to have made the transition from knowledge telling to knowledge transforming. McCann (1989), Knudson (1992), and Crammond (1998) all noted an inability of young writers to warrant claims. Yeh's participants, however, were able to show a concern "about connecting their reasons to their claims rather than merely focusing on procedures" (p. 76). Yeh also commented on the value of direct instruction, claiming that "knowledge of argument structure improved students' judgment regarding the content and organization needed to generate strong, logically connected arguments" (p.79). Yeh provided more information about participants than any researcher whose work has been reviewed thus far. In addition to general descriptors of the community, he also informed readers many students qualified for free and reduced meals and the percentage of participants by race.

Although Yeh's "Empowering" study (1998b) was used extensively to inform the present study, it nevertheless was characterized by two drawbacks. First, Yeh admitted that due to a disproportionate number of white versus minority students, no claims could be made to the effect that instruction in heuristics was more beneficial to minorities than whites. This imbalance in the makeup of participants existed because Yeh did not intend

to contrast performance of minorities to whites, yet he shaped his data *post facto* in a manner that suggests that this was an aim of the study. A second and, I believe, important flaw is that pre- and posttest essay topics were not sufficiently similar. Yeh noted gains in voice for the posttest, which was on the subject of whether or not people should drink alcohol. Yeh asserted that this topic was equally “unfamiliar” to participants as the pretest topic of whether or not toxins should be dumped in the ocean. Both topics would seem to lean toward a negative response. School children are taught about the evils of pollution and the dangers of drinking alcohol. To claim that problems created by alcohol consumption are as distant from the day-to-day lives of students as problems arising from water pollution struck me as out of touch. It thus seems very reasonable to conclude that gains in voice from pre- to posttest essays was perhaps due to the posttest essay topic being far more personally meaningful to participants.

Lunsford (2002) conducted a study of how high-school-aged writers made meaning of the Toulmin model. Lunsford credited Yeh (1998a, 1998b) for attending to the neglected dynamics of context in conducting his “Validation” and “Empowering” studies; however, she was quick to point out three shortcomings of Yeh’s work that she sought to remedy in her study. First, Yeh’s consideration of context was limited to examining the knowledge and beliefs of raters, which, although an important area of inquiry, did not address the role of contextual factors in shaping how participants made meaning of, and with, the Toulmin model. Second, although Yeh gathered some qualitative data, and he was concerned about how participants applied instruction in the Toulmin model in their own writing, analysis in both his studies consisted almost exclusively of examining products using the Toulmin model as an “evaluative tool,” and

thus his studies, like those carried out by McCann (1989), Knudson (1992), and Crammond (1998), examined participant performance only at actual levels and did not assess performance at proximal levels. Third, Yeh's interviews did not pose specific questions to the participants about their individual essays but rather asked only general questions about procedures ("steps") they took in writing their essays as well as asking them to identify qualities of effective argumentative pieces. Thus, no insights about how participants incorporated the Toulmin model into their problem-solving processes were derived. Concluding her critique of Yeh's studies (1998a, 1998b), Lunsford (2002) pointed out that Yeh "does not report on students' various understandings of the assigned scenario-based task or the classroom context(s) in which they argued, nor does he examine why students believe that certain statements in their essays fulfill the Toulminian functions they assigned to them" (p. 116-117). The present study attempted to take the best from both product- and process-based studies, using both holistic and Toulmin-based rubrics to score essays as well as analyzing protocol data to examine differences in performance on pretest (actual), and independent and posttest (proximal) tasks in an effort to make meaning of how participants' problem-solving processes were affected by scaffolded instruction in the Toulmin model.

Lunsford (2002) conducted her study at a large mid-western university. Participants in Lunsford's study were 10 high-school-aged students taking part in a six-week summer writing workshop. Nine students were rising seniors, and one was a recent graduate who would attend a different university in the fall. Lunsford and another researcher, "Kevin," both of whom were recent graduates of the university, served as TAs for the workshop which was designed and supervised by the director of writing programs.

In addition to providing high school students with an experience with college-level writing, another purpose of the workshop was to pilot materials for teaching the Toulmin model that were to be included in a composition textbook written by the director of writing programs at the university.

The class met two times per week for six weeks. Each session was 3 hours long, consisting of ninety minutes of lecture on the Toulmin model followed by ninety minutes of workshop and peer critique. Lunsford (2002) described the instruction as “highly scripted” (p. 125). Students taking part in the workshop wrote drafts of five essays, and were encouraged to write “thick arguments,” that is, arguments that included the Toulminian elements of “Claims,” “Reasons” and “Evidence” (i.e., Data), “Warrants,” and “Acknowledgments/Responses” (i.e., Rebuttals and Qualifiers) that were introduced in the lectures and applied during instructional sessions. “Backing” was dropped from the adaptation of the Toulmin model used in the study. Lunsford explained that, in the instructional scheme devised for the study, “whenever someone questions a Warrant, it becomes a claim that must be proven” and thus “[a]rguments become nested within arguments as authors provide Reasons and Evidence to convince readers to accept the Claim as a Warrant for some of the text’s other argumentative steps” (p. 127).

Lunsford’s (2002) used Wenger’s (1998) theories of “reification” and “communities of practice” as well as Bahktin’s (1986) concept of “response” to analyze the evolving understandings of the Toulmin model of both student writers and instructors. Data were drawn from course materials, drafts of essays, peer critiques, comments from both TAs, audiotapes of lectures and participant interviews, emails, course evaluations, and field notes. Faced with a considerable amount of data, Lunsford decided to look at

the work of only 5 of the participants, and concentrated especially on a particular incident involving one writer, “Emily,” whose essay on an excerpt from *The Declaration of Independence* created a controversy. Peers believed Emily made a claim in the introduction of her paper that she contradicted in her conclusion. Lunsford described how she gradually shifted her viewpoint, siding first with Emily, but eventually agreeing with peers. Lunsford believed the incident exemplified how complex the dynamics at work are in negotiating meanings of something as complex as an argument model. Her shift in viewpoint led her to the realization that “there are multiple explicit or tacit expectations informing our mutable responses to and negotiations over what utterance(s) might count as an appropriate claim” (p. 130). That such complexities could be at work in determining what constitutes a claim was particularly striking to me as the claim component of the Toulmin model is, in my experience, the least problematic component to identify, define, or generate.

Aside from the fact that it is a qualitative study of the Toulmin model, Lunsford’s (2002) study is so different from the present study that I cannot claim to have built on Lunsford’s work in any way. Lunsford’s close examination of how her theoretical framework illuminated the dynamics at work as participants made meaning of the Toulmin model has no direct relevance to this study. Lunsford focused on classroom and peer response. The present study used individualized instruction and a one-on-one intervention protocol. Lunsford’s reliance on theories of Wenger (1998) and Bahktin (1986) indicate a concern with the social construction of meaning. I, on the other hand, relied on the Vygotskian practices of scaffolding and constructing zones of proximal development, both of which privilege how individuals make meaning. Some of

Lunsford's conclusions, however, are important to my study and I will briefly rehearse those here.

First, Lunsford concluded that, in composing "thick arguments" that incorporated all components of the Toulmin model, participants were "motivated through complex interactions rather than through a reliance on a simple argumentative model" (p. 160). Lunsford's accounts of how participants understood and used the Toulmin model support the hypothesis that the model has strong potential to facilitate knowledge transforming, and can serve as a heuristic for composing more effective arguments than those composed using the SEE (Statement, Examples, Explanation) model. Yeh's (1998b) finding that participants in his study used the Toulmin-based heuristic "flexibly" was echoed in Lunsford's observation that her study participants – students and instructors alike – conceived of the Toulmin model as a heuristic or analytical tool "depending on their goals at any single time" as they engaged in writing processes that were "recursive and interactive" (p. 160) – a description that suggests participants engaged in knowledge transforming. Citing evaluative studies that limit its use to an analytical tool, Lunsford asserted that the Toulmin model cannot be reduced to "a fill-in-the-blank formula" (p. 160). Next, in a similar vein, Lunsford argued that her study revealed that the Toulmin model cannot be meaningfully used to assess writing independent of the context in which it is learned and applied. Finally, Lunsford asserted that researchers and practitioners are taking the wrong approach to teaching writers how to warrant arguments. Citing Toulmin's assertion that warrants should be stated when they are likely to be challenged, participants were asked to "articulate their warrants explicitly," a task that they found "difficult" (p. 153). In much of the research literature as well as in instructional texts, the

task of warranting is often limited to guiding students in identifying relevant, field-specific principles and selecting those which establish a connection between data and claims. Lunsford found that generating warrants could not be effectively carried out in isolation from other components of the model. Writers should, instead, be guided in “understand[ing] how all of these elements are continually redefined” (p. 162) as they problem solve all facets of argumentative writing tasks. Although Lunsford does not use this terminology, I derive from her conclusions that the Toulmin model cannot be effectively taught as a simple framework supporting knowledge telling – one where writers are taught the component parts and then asked to create an essay following “steps” – but rather it must be taught as a complex framework supporting knowledge transforming if it is to serve as a means for writers to produce more effective arguments.

As mentioned above, Lunsford was primarily concerned with how the Toulmin model is mediated by teachers and students in a classroom context. The present study was grounded in the Vygotskian (1934/1986) practices of “scaffolding” (Bruner, 1975) and the creation of “zones of proximal development” (Vygotsky 1934/1986) with individual writers, and thus Lunsford’s theoretical framework is almost entirely irrelevant. A shared area of interest, however, is Toulmin’s (1958/2003) notion of the “challenger,” an imagined other “whose queries and challenges can be used to build an argument” (p. 112). The “challenger” is the imagined audience whose perspectives the writer must consider in addressing the audience-related task demands of warranting arguments, providing relevant and convincing supporting data, and anticipating and responding to opposition – the problem areas established by McCann (1989), Knudson (1992), and to a degree, Crammond (1998), which was a focal point of the present study.

Also of interest to me is Lunsford's observation that evaluative studies fail to address "the fact that other writing instruction must mediate Toulmin's model ... Students and teachers ... bring different personal experiences with previous instruction to bear when they interpret and co-construct the expectations that will apply in a particular classroom" (p. 118), or, in my case, in interactions with individual learners. In assessing the effects of scaffolded instruction in the Toulmin model, I used SEE (Statement, Examples, Explanation), a heuristic for argumentative writing familiar to both participants and myself, as a foundation to guide instruction as well as a reference point for examining changes in problem-solving strategies. In this way, I attempted to do what Lunsford set out to accomplish in her study – to "examine the dialogic uptake of the model, noticing when Toulminian elements displaced, redefined, were displaced by, or were redefined by other writing instruction" (p. 130). Finally, Lunsford's qualitative study of the Toulmin model offered me further reason to believe that it has the potential to positively impact the problem-solving strategies of young writers, especially when it comes to the difficulties they experience when wrestling with audience-related tasks demands. Lunsford observed that "when writers imagine readers' voices, a Toulminian model becomes more than a formula for naming various argumentative elements. Rather, the model is construed here as indexing a way of thinking that influences the writing process throughout" (p. 134). Lunsford's study suggests to me that providing participants with an argument model coupled with scaffold that will engage them in consideration of audience may be the key to moving them from knowledge telling to knowledge transforming.

As illuminating as Lunsford's (2002) study is in some ways, certain facets of it are open to criticism. First, and perhaps foremost, is the exigence of the study itself. The

purpose of the study was to pilot instructional materials to be included in a textbook written by the director of writing programs at the university where the study was conducted. This fact certainly does not call all of Lunsford's findings into doubt, but there may have been a tendency to exclude from her report aspects of the materials and/or instruction that did not work. There is no mention of any aspect of either materials or the "highly scripted" instruction producing undesirable results. Second, in taking a qualitative approach to her examination of how student writers make meaning of the Toulmin model, Lunsford attempted to set her work apart from previously conducted studies, all of which were "evaluative" in nature. There is nothing wrong about this. In fact, I, too, will be using qualitative methods for the present study due to what I perceive to be limitations of these product-oriented studies, most notably their inability to examine what participants can do at proximal levels. Lunsford, however, takes her criticism of these studies a bit too far, stating that "because rating rubrics are focused on products, they obscure the complicated processes through which raters/teachers and students negotiate how the model applies to particular circumstances" (p. 118). Furthermore, she asserted that the need to establish interrater reliability resulted studies that "often construe Toulminian models as formulaic scoring rubrics and treat classroom/assessment contexts as stable, homogeneous, and measurable by already known standards" (p. 116). I believe that Lunsford, here, is overstating her case. It is true that product-based studies that use the Toulmin model primarily as a means of evaluating the quality of participants' essays do not address how the model is used and understood, but I do not believe that they necessarily "obscure" these processes nor do I believe that they necessarily reduce the Toulmin model to a "formulaic" function. Were this the case, participants in Yeh's

(1998b) study would not have demonstrated an ability to use the Toulmin-based heuristics in a flexible manner, “not merely follow[ing] rote procedures but learn[ing] to apply the principles underlying the ... heuristics” (p. 71). Also, I do not believe that simply because a researcher does not report on the dynamics at work in a classroom context that the researcher is necessarily guilty of presenting “classroom/assessment contexts as stable, homogeneous, and measurable by already known standards.” Finally, Lunsford’s decision to focus on the particular incident of “Emily,” who may or may not have contradicted a claim from her introduction in the conclusion of the paper, suited Lunsford’s theoretical framework very well, but it ultimately resulted in a loss of focus on the broader project of reporting on how participants made meaning of all facets of the Toulmin model.

In conducting the present study, I intended to carry on Lunsford’s (2002) project of examining how writers make meaning of the Toulmin model within the context of their prior knowledge about argumentation and composing in the argumentative mode, but endeavored to give a more thorough and balanced account of the effects of scaffolded instruction in the Toulmin model on participants’ problem-solving processes. Lunsford provided readers with an overview of instruction participants received in the Toulmin model, and described interactions that took place between and among researchers and participants, as all attempted to make meaning of the model. In doing so, Lunsford has certainly provided readers with more information about instruction and the contexts in which it took place than any researcher I have encountered. I likewise attempted to provide detailed descriptions of instruction and learning with an eye toward achieving a better understanding of if, and to what extent, the Toulmin model facilitated the building

of more effective schemas for argumentative writing. McCann (1989), Knudson (1992), and Crammond (1998) found that audience-related task demands pose the most difficulty for young writers, and therefore improvements in the handling of warranting arguments, supporting data, and opposition served as indicators that participants were building more sophisticated schemas for argumentative writing. Yeh (1998a; 1998b) demonstrated that the Toulmin model is a valid scheme for assessing the quality of secondary students' argumentative writing, and that Toulmin-based heuristics can be successfully used to teach students how to handle content, rhetorical, and procedural problems as they compose. I derived from the work of these researchers as well as from the work of Kellogg (1994), Glynn, Britton, Muth, and Dogan (1982), Crowhurst (1991), and Scardamalia, Bereiter, and Steinbeck (1984) that the Toulmin model, as a complex framework (Hayes, 2006) that can be used in handling all task demands in a flexible manner, has the potential to reduce cognitive load and facilitate knowledge transforming. The present study used the Toulmin model as a cognitive strategy. Most of the instruction in the Toulmin model impacted the prewriting operations of collecting and planning, but also impacted translating and reviewing as well.

The present case study (Stake 1995, 2010) relied heavily on data collected from participants in the act of composing in order to establish possible effects of the intervention on their problem solving processes. I will, therefore, include a discussion here of the protocol I created to collect this data.

Intervention Protocols

I selected an intervention protocol for the present case study because it was a tool that not only had the potential for reducing participants' cognitive load, but also because

it permitted me to learn about understandings writers had about argument and argumentative writing tasks based on their personal experiences, as well as from prior and current writing instruction. In reviewing the efforts of composition theorists and practitioners to apply research findings about how writers problem solve while composing to actual classroom contexts, Swanson-Owens and Newell (1994) observed that

To a large extent, process and instructional research have operated on parallel and not intersecting empirical tracks, with process studies being largely detached from instructional issues, and instructional studies ignoring how individuals internalize instructional lessons and incorporate them into their own composing strategies (p. 144).

They note particularly the need for “instructional scaffolds teachers can offer students to help them incorporate their knowledge of topic or audience or purpose into more expert-like composing strategies” as well as “methodologies driven by theoretical frameworks and procedures that are sensitive to writing processes in school contexts” (pp. 142-143).

The use of protocols in writing research has been widely debated. With few exceptions, controversies over the use of protocols have been limited to “think-aloud” or “concurrent” protocols that require the subject to articulate any thought that comes into his or her mind while solving a problem. The major source of conflict is whether articulating ideas aloud distracts the writer-in-process. This particular source of controversy, however, was not relevant to the present study as the specific type of intervention protocol selected – “Planning and Retrospective Accounts Collected During

the Problem-Solving Process” – did not require participants think aloud while problem-solving.

Swanson-Owens and Newell (1994) claimed that on-line think-aloud protocols typically used in process studies to gather verbal data wherein writers provide all the information, free from any cueing from the researcher (as described by Steinberg, 1986), although adequate in meeting some research objectives, have two major limitations. First, traditional on-line think-aloud protocols do not allow researchers to probe writers about goal-setting and other strategic decisions they make while composing, thus preventing researchers from achieving a more in-depth understanding of how writers make use of strategies while in the act of writing. Second, traditional protocols do not permit the researcher to gauge the effects of instruction by differentiating between knowledge gained as a result of treatments and knowledge already possessed by the writer – a process that also requires questioning the writer at various phases of the writing process. Swanson-Owens and Newell address these perceived inadequacies with their alternative instruments which they term “intervention protocols.”

One type of intervention protocol – “Planning and Retrospective Accounts Collected During the Problem-Solving Process” – demands that the researcher periodically probe writers about how they are applying strategies or some other relevant form of knowledge while composing. In order to avoid interrupting writers while in the midst of problem-solving some facet of their composition in progress, Swanson-Owens (1987) had students signal when they had completed a paragraph – a time when they reported they were likely to return to thinking about more general goals for their piece of writing. Unlike standard, on-line think-aloud protocols which require participants to

articulate everything that comes to minds while writing, participants providing think alouds while participating in an intervention protocol are free to work quietly on the writing when not responding to the researcher's questions and probes.

Although yielding less data, particularly data related to the translating phase, Swanson-Owens and Newell (1994) claimed that this type of intervention protocol is better suited to working with participants who are "less inclined to use metalanguage *during* composing than when talking *about* composing" and is one that still yields "rich data about the ways students, without procedural or substantive support from the researcher, construe and go about tackling the task before them", thus permitting a researcher to better examine "the direct effects of classroom instruction on composing processes ..." (p. 147). I selected this type of intervention protocol for the present study for two main reasons: first, sixth-grade students are often reticent; second, my primary interest was to determine the impact of instruction – both prior instruction and instruction given as part of the intervention – on the problem-solving processes of sixth-grade writers while composing argumentative essays. In addition to the aforementioned advantages, intervention protocols boost the ecological validity of findings as they allowed me to examine how actual students in actual classroom contexts applied pre-existing knowledge as well as knowledge gained as a result of instruction given as part of the intervention.

The Need for Further Research

The rationale for conducting the present case study (Stake 1995, 2010) emanated from a disparity I perceived between the importance of argumentative writing to academic, social, and personal success, and the inability of our nation's secondary

students to write effective arguments. NAEP studies of secondary students' argumentative writing capabilities clearly indicate that very few (generally only 3% to 5%) can write convincingly in the argumentative mode. Independently conducted studies reveal that audience-related task demands – warranting arguments, presenting effective and relevant supporting data, and anticipating and responding to opposition – present the greatest areas of difficulty.

Prevailing practice in writing is generally limited to the presentational mode and relies heavily on having students imitate model essays following general procedures (“steps”) despite the fact that researchers have learned that writers do not write following a lock-step, stage model process, but rather compose in response to goals that they set and monitor throughout the composing process. Cognitive models of the writing process could serve as the foundation for a far more effective pedagogy, but research has not been successfully translated into practice in our nation’s classrooms. Instruction in heuristics based on the knowledge of cognitive process models have the potential to provide young writers with effective procedures for handling task demands and, in the process, reduce cognitive load. Students who understand how they write could thus more effectively set and monitor content, rhetorical, and procedural goals as they problem solve task demands and create more effective pieces.

For the most part, existing research has succeeded in revealing only the source and extent of the problems secondary students experience when writing arguments. Studies by Yeh (1998b) and Lunsford (2002) demonstrate the potential of the Toulmin (1958/2003) model as a heuristic, but neither study examines the effects of instruction in the Toulmin model on all facets of the composing process in detail. I elected to conduct a

case study (Stake 1995, 2010) in the interest of gaining as thorough an understanding as possible as to how four sixth-grade writers problem solve using the Toulmin model while composing argumentative pieces. Bruer (1993) contended that studying how learners “problem-solving behavior changes as [they] acquire new knowledge and strategies” can enable researchers to “look beneath actual or desired performances and describe the underlying mental processes,” and subsequently “investigate how best to teach these processes” (p. 15). Once this better understanding is achieved, it is my hope that the teaching of cognitive strategies that provide learners with more effective schemas for writing will be taught nationwide, and that more of our nation’s students will be able to write effectively in the argumentative mode in variety of contexts they encounter.

Summary

In this review of literature, I presented theoretical frameworks and data from research studies relevant to the present study. I began by discussing various cognitive models of the writing process and related them to the present study. I attempted to link cognitive process models to a broader discussion of the cognitive demands of argumentative writing, placing particular emphasis on the strategies of knowledge telling and knowledge transforming. I discussed the cognitive demands of argumentative writing, and reported that many researchers have advocated the use of instructional interventions aimed at facilitating planning at the prewriting stage in the interest of reducing cognitive load.

I then turned my attention to the subject of writing instruction. First, I presented in detail findings of the four most recent administrations of the NAEP writing assessment (1998, 2002, 2007, 2011), then segued into a discussion of ineffective practices in the

teaching of writing that dominate instruction in our nation's schools. I contrasted ineffective instruction, which relies largely on the imitation of models following lock-step, sequential procedures for producing a draft, and contrasted this "presentational" approach with a more effective, researched-based "environmental" approach that privileges problem solving through inquiry.

Following this discussion of instruction, I presented the Toulmin model and related the ways researchers and practitioners have advocated using the Toulmin model in instruction. Pointing out that early advocates (and critics) of the Toulmin model merely interjected it into an ineffective, presentational instructional setting, I argued that the Toulmin model may be most effectively used in the context of cognitive strategy instruction. I attempted to connect the Toulmin model to cognitive process models, especially Bereiter and Scardamalia's knowledge transforming strategy. I then justified my selection of the Toulmin model based on my belief that it has the potential to serve as a framework for knowledge transforming.

Having related much of the theoretical background for the present study, I then reported findings of independently conducted studies of secondary students' argumentative writing capabilities. I focused on Toulmin-based studies, first discussing those that used the model to evaluate products, and then those that transformed the model into a heuristic for teaching argumentative writing.

Finally, I explained the role that the Vygotskian principles of "zone of proximal development" and "scaffolding" would play in the present study, and related these concepts to the intervention protocol I designed to collect and analyze data.

The present case study (Stake 1995, 2010) was designed to determine if, and to what extent, the problem solving strategies of four sixth-grade writers were affected by scaffolded instruction in the Toulmin model. The research questions for the present study were:

1. Does scaffolded instruction in the Toulmin model improve the overall quality of participants' argumentative essays?
2. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of warranting arguments?
3. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of providing convincing supporting data?
4. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of anticipating and responding to opposition?

The next chapter will provide a detailed discussion of the methods that were used to carry out the present study.

Chapter III

Method

Introduction

The purpose of the present case study (Stake 1995, 2010) was to examine the effects of scaffolded instruction in the Toulmin Model of Argument (1958/2003) on the problem-solving processes of four sixth-grade writers. Participants composed argumentative pretest and posttest essays while participating in an intervention protocol. The protocol served the purpose of scaffolding general procedures for composing essays as well as assisting me in creating a zone of proximal development with each participant in which I could explore how he or she problem solved argumentative writing tasks. Prior to the pretest, participants composed an expository piece under protocol conditions to get them used to the protocol. They wrote a short piece (a letter to incoming sixth-graders) in the expository mode rather than the argumentative mode in order to avoid any practice effect. Participants then composed the argumentative pretest essay. Over the course of four weeks, students who took part in the study received six units of scaffolded instruction in the Toulmin model. At the conclusion of instruction, but prior to the posttest, participants composed independently (under non-protocol conditions) an argumentative essay identical in task demands to the pre- and posttest essays to assess whether, and to what extent, instruction affected argumentative essay quality independent of the scaffolds provided by the intervention protocol. At the conclusion of the study, participants composed a posttest argumentative essay under protocol conditions.

I scored essays with a co-rater using the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E) and the Toulmin-McCann (1989) Rubric (Appendix F) to assess

possible changes in argumentative essay quality both holistically and in terms of Toulmin model traits. Working closely with the co-rater, I also analyzed protocol transcripts with the aim of gauging how scaffolded instruction in the Toulmin model affected participants' problem-solving strategies. Students selected for the study routinely received instruction in the SEE (Statement, Examples, Explanation) model to guide them in writing argumentative essays as a part of regular classroom instruction. The SEE model is a simple framework that cues for knowledge telling. The Toulmin model, on the other hand, is a complex framework that facilitates knowledge transforming. Researchers have determined that audience-related task demands are the source of much of the difficulty secondary students experience when writing arguments. I therefore gave particular attention to participants' handling of audience-related task demands – warranting claims, providing effective supporting data, and addressing opposition – all of which I analyzed for possible improvement as a result of participants' work with the Toulmin model. In gathering and analyzing data about participants' problem-solving strategies, I attempted to determine if, and to what extent, the intervention instruction enabled each participant to move beyond knowledge-telling to engage in knowledge-transforming (Bereiter & Scardamalia, 1987) as he or she was supported by the instruction as well as the intervention protocols while progressing through his or her zone of proximal development (Vygotsky, 1986).

In this chapter, I describe the participants, setting, materials, procedures, and instruction associated with the present study. I also explain the research questions and design of the study, as well as measures taken to guard against threats to validity and reliability.

Participants

The participants for the present study were four sixth-grade students selected from two different intact reading/language arts classes taught by the same teacher. Two students, one male and one female, will be selected from the “advanced” class and were identified as “high-ability.” Two other students, one male and one female, were be selected from the “average” class and were be identified as “average-ability.”

Participants from each class received instruction together, but naturally provided pretest and posttest think alouds in a one-on-one setting with me. In consultation with all members of my expert panel, I decided not to include participants identified as performing below grade level. I made this decision for two reasons. First, sixth-grade students are at the very earliest stages of capability when it comes to argumentative writing. The cognitive demands of argumentative writing, especially using a new, unfamiliar model, would prove difficult for any student of this age. The second reason, following from the first, is that students struggling with the tasks they routinely encounter in the classroom would be at a higher risk of harm to self-esteem. The teacher, a 15-year veteran cited by her curriculum supervisor and principal as having an excellent reputation for assessing the ability of her students, and for differentiating instruction based on each student’s interests and capabilities, recommended students for the present study. I asked the teacher to identify students whom she would classify as “high-ability” and “average-ability” based upon her many years of experience with sixth-grade students.

Furthermore, I asked her to identify potential participants who were “good communicators” – an important quality given that protocols served as the major means of data collection – and “solid students” who could making up class work missed while

receiving the instruction, which was be given on a pull-out basis. I used standardized test scores – a CTBS reading score from their 2nd grade year and a Rigby Benchmark score from the end of their 5th grade year to confirm the teacher’s designation of students as high- or average-ability, and as an additional, objective confirmation that all four participants selected read on or above grade-level. I had planned on further establishing ability level by comparing these standardized test scores with IQ data, but was not allowed access to this information.

Table 3 (below) presents information about the four participants:

Table 3

Participant Information

Participant Benchmark	Attendance Days Absent/Tardy (Day 1 of Study)	CTBS Scale Score/Grade Equivalent (administered Grade 2)	Rigby Reading Scale Score/Grade Equivalent (administered Grade 5)
Jessica ("average-ability")	4 / 2	638 / 4.5	600 / 7 (upper-middle school)
Brian ("average-ability")	1 / 1	627 / 3.7	600 / 7 (upper-middle school)
Ann ("high-ability")	4 / 0	722 / 13*	600 / 7 (upper-middle school)
David ("high-ability")	2 / 0	627 / 3.7	600 / 7 (upper-middle school)

* Note: Ann’s CTBS score place her in the 99th percentile nationally – quite an outlier. I report this in the interest of full disclosure. It is also possible that the score report may be erroneous.

As this table indicates, all four participants did not have any issues related to attendance. CTBS grade-level equivalent scores demonstrate that at the end of second grade, all four participants actually read above grade level. The Rigby Benchmark scores confirm that all four participants were reading at the 7th grade level or higher at the end of fifth grade. I offer this data to confirm the assessment of the participants’ classroom teacher that all four students read at or above grade level at the time of recruitment. Furthermore, as

noted above, Ann's grade-equivalent score of 13 – a score that reveals she was already reading at the college level – was quite an outlier. Ann and David both achieved the maximum score of 600 on the Rigby Benchmark for the first time in Grade 3. Jessica achieved the maximum Rigby score of 600 at the end of grade 4, and Scott achieved the maximum score of 600 at the end of grade 5. I offer these scores to further support the teacher's designation of Ann and David as "high ability" and Jessica and Scott as "average ability," but must concede that these scores make a less compelling case for the "average ability" designation.

In designing the present case study, I attempted to build upon existing research. McCann (1989), Knudson (1992), and Crammond (1998) all used assessment rubrics based on the Toulmin model to assess the quality of writing produced by participants in their quantitative studies of secondary students' argumentative writing capabilities. All three researchers included sixth-grade students as participants in their studies, and came to the conclusion that sixth-graders struggle to write effective argumentative pieces, but appear to be at a point in their development where they may benefit from instruction. McCann, for example, found that participants in his study at all three grade levels (6, 9, and 12) struggled to compose effective argumentative essays, yet were able to recognize arguments and assess their quality. McCann stated that the greatest difficulty with argumentative writing was experienced by sixth-graders who were "less effective in stating claims, ... seldom [used] warrants to explain data," and generally failed in "the recognition of possible opposing arguments and a response to opposition", thus "support[ing] the widely held assumption that ... younger writers are less skillful in producing arguments than ... older writers" (p.71). Yeh (1998b), however, found that

middle school students were able to use a Toulmin-based heuristic in a flexible manner as they problem solved while composing arguments, and Lunsford (2002) concluded participants in her study successfully used the Toulmin model in setting and carrying out a variety of goals while composing arguments, conceiving the Toulmin model as a heuristic or analytical tool “depending on their goals at any single time” as they engaged in writing processes that were “recursive and interactive” (p. 160). Lunsford also found that secondary students taking part in her study were able to understand how all components of an argument work together as a result of studying and applying the Toulmin model. Additionally, Bereiter and Scardamalia (1987), whose knowledge telling and knowledge transforming strategies are central to the present study, found that their sixth-grade participants were capable of writing in both modes.

I decided to conduct this study with sixth-grade students in the interest of learning, among other things, if, and to what extent, scaffolded instruction in the Toulmin model, along with support provided by intervention protocols, might, through the creation of a ZPD with each participant, reduce cognitive load and facilitate complex problem-solving associated with the knowledge-transforming strategy (Bereiter & Scardamalia, 1987), thereby enabling participants to write essays in which they effectively state claims, warrant data, and recognize and respond to opposition. The scaffolded instruction I designed for the present study treated the Toulmin model as a complex framework (Hayes, 2006), attempting to capitalize on the capacity of the Toulmin model to foster self-regulation as well as to support participants as they organized information in order to meet argumentative writing task demands.

If sixth-grade students are found to benefit from scaffolded instruction in the Toulmin model, I hypothesized that older students would likewise benefit. Thus, the selection of sixth-grade writers for the present study aimed in part at examining the claim that sixth-grade students, although largely unable to write effective argumentative pieces (Crowhurst, 1988; Knudson, 1992; McCann, 1989; National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salah-Din, Persky, & Miller, 2008; Schneider, 2008; Schultz & Laine, 1987; White & Venneman, 2000) are developmentally ready for scaffolded instruction in an argument model, as some researchers have argued (Bereiter & Scardamalia, 1987; Crammond, 1998; Knudson, 1992; Lunsford, 2002; McCann, 1989; Yeh 1998b). By using intervention protocols, rather than relying on the examination of final products alone, I attempted to arrive at a detailed understanding of precisely what effects scaffolded instruction in the Toulmin model had upon participants' problem-solving strategies while composing argumentative essays.

Setting

Participants for the present study were four sixth-grade students who attended a middle school in a suburban-rural school district in the mid-Atlantic region of the United States. According to the most recent data available, this middle school, which served as the study site, had a coed population of 1,105 students, 394 (35.6%) of whom are sixth-graders. Students at this middle school came primarily from middle- to lower-middle income families living in single-family homes. The school's student population, as reported in terms of racial/ethnic demographics, was 1,001 white (90.6%), 51 African-American (4.6%), 30 Hispanic (2.7%), 22 Asian/Pacific Islander (2%), and 1 American Indian/Alaskan Native (.009%). Special education services were provided to 138

students (12.5%) who had individualized education plans (IEPs) or 504 plans, and 5 students (5.5%) who had been identified as being “limited English proficient” receive instructional support from an ELL (“English Language Learners”) teacher. 140 students (12.7%) received free and reduced meals. At a reported mobility level of 4%, the student population of the school was fairly stable. In addition to a principal, two assistant principals, three guidance counselors, a media specialist, and 26 instructional assistants and intervention specialists, the school was staffed by 51 regular classroom teachers. 15 of these regular classroom teachers (29%) held standard professional certificates, 31 (61%) held advanced professional certificates, and the remaining 5 (10%) held provisional certificates. 97% of classes were taught by teachers classified as “highly-qualified” according to No Child Left Behind.

The attendance rate for the current year was 95.7%, and was rated as “satisfactory” by the state. According to state-mandated assessments measuring students’ reading abilities, 17.1 % of sixth-graders scored at the “basic” level, 36.5% were “proficient”, and 46.4% were “advanced”. Levels of math achievement among sixth-graders according to the same state-mandated test were 23.7% “basic”, 60.1% “proficient”, and 16.3% “advanced”. Students took four core academic classes that meet daily – reading/language arts, math, science, and social studies – as well as physical education or health, and one “special area” class (e.g., music, art, technology, etc.). Reading/language arts was taught as a “block,” and met for 85 minutes every day. Other class periods were 55 minutes in length. Students received 25 minutes of additional instruction in math, science, or social studies on a rotating basis. Students were allowed 5 minutes to move from class to class, and had a 25 minute lunch period.

Table 4

School Demographic Information

Race		Special Ed/ FaRMs		Teacher Credentials	
White	1,001 (90.6%)	IEP/504	138 (12.5%)	Advanced Professional	31 (61%)
African American	51 (4.6%)	ELL	5 (5.5%)	Standard Professional	15 (29%)
Hispanic	30 (2.7%)	FaRMs	140 (12.7%)	Provisional	5 (10%)
Asian/Pacific Islander	22 (2%)				
American Indian/ Alaska Native	1 (.009%)				

Materials

The following materials were used in conducting the present study: (a) McCann's (1989) constructed argumentative passages (Appendix A), (b) a pre-study survey, and expository and argumentative prompts used in conjunction with protocols (Appendix B), (c) an expository intervention protocol (Appendix C), (d) an argumentative intervention protocol (Appendix D), (e) the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E), (f) the Toulmin-McCann (McCann, 1989) Argumentative Rubric (Appendix F), (g) Daggett's (2004) Rigor-Relevance Framework (Appendix G), the coding scheme I used with the co-rater to analyze problem solving strategies used by participants (Appendix H), and coding tables showing strategies used at different points in the intervention

protocols (Appendix I). Transcripts of pre- and posttest intervention protocols were compiled in a separate volume.

Constructed Argumentative Passages

McCann (1989) devised seven brief constructed passages for use in his study. McCann asked the students (grade 6, 9, and 12) as well as a group of adults to identify whether each passage was an argument, and to rate any passage determined to be an argument in terms of its quality. I replicated this facet of McCann's study in carrying out the present study. The topics of McCann's passages were relevant, and, with the exception of a few minor revisions, I adopted them for use in the present study unaltered (Appendix A). In addition to using the passages to assess participants' capabilities in the areas of identifying and assessing the quality of arguments, these passages were also used in conjunction with the scaffolded instruction in the Toulmin model that I designed.

Argumentative Essay Prompts

The argumentative prompts participants were asked to respond to by composing pretest, independent, and posttest essays were modeled after a prompt (Appendix B) created by McCann (1989). Before receiving any instruction in the Toulmin model, participants completed a pre-test that consisted of writing an argumentative essay about the school's gum chewing policy (Appendix B) while providing a think aloud (Appendix D). All three argumentative prompts I used in the present study were identical in terms of form (a letter), audience (the school's principal), the writer's identity (member of the school's student council) and purpose (taking a position about a proposed change to a school policy). The principal at the school where the study was conducted is well-known and well-liked by the student body. In order to make study tasks more real for

participants by presenting them with an authentic audience, I asked the principal if he would be willing to read the letters written by students, and he generously agreed to do so. Protocol transcripts reveal that all four participants used their knowledge of the principal in setting and attempting to meet rhetorical goals.

After completing the pretest essay, all participants received six units of scaffolded instruction in the Toulmin model on a pull-out basis. The high- and average-ability participants received instruction together. At the conclusion of the instructional period, participants wrote an independent essay under normal (non-protocol) conditions in which they were tasked with taking and supporting a position on a proposal to require all students to wear school uniforms. The purpose of having students write this essay was to identify possible effects that the administration of the protocol might have had on the essays participants produced, and to determine the quality of argumentative essays participants would be capable of writing independent of the scaffolds provided by the protocol (i.e., “actual” as opposed to “proximal” performance). Finally, participants completed a posttest under protocol conditions on the subject of whether or not students should have access to snack machines during the school day that was identical to the pretest and independent essays in terms of format and task demands. Differences in performance from pretest to posttest were used to gauge improvements in proximal performance.

Rubrics – The NAEP 8th Grade Persuasive Rubric and The Toulmin-McCann Rubric

I worked with the co-rater for the present study to evaluate and compare the pretest, independent, and posttest essays using the NAEP (2007) 8th Grade Persuasive

(Appendix E) and the Toulmin-McCann (Appendix F) scoring rubrics. The scoring of essays focused on overall effectiveness, as measured by the NAEP rubric, and evidence of the use and level of sophistication of elements of the Toulmin model, as measured by the Toulmin-McCann rubric. Furthermore, the co-rater and I analyzed the problem-solving processes of participants by coding intervention protocols, indicating level of complexity of utterances, and classifying each original utterance in terms of type of goal or goals the writer was formulating or evaluating – content, procedural, rhetorical, or some combination. In coding protocol transcripts and scoring essays, the co-rater and I attempted to strike a balance between independent coding and use of a consensus model. Prompts, assessment instruments, and procedures for training the co-rater are discussed in greater detail below.

The Intervention Protocol

In Chapters 1 and 2 of this study, I argued that ineffective writing instruction is limited to the formulaic analysis of model essays and instruction in general procedures, and cited Hillocks' (1995/2011) inquiry-based “environmental” approach to instruction as a viable alternative to prevailing practice. Wells (2000) identified a lack of dialogue as being a major obstacle to implementing an inquiry-based approach to teaching and learning. In carrying out the present study, I used Swanson-Owens and Newell's (1994) “Planning and Retrospective Accounts Collected During the Problem-Solving Process” (hereafter referred to as “the intervention protocol”) to facilitate dialogue, and in doing so, created a ZPD with each participant while he or she composed pretest and posttest essays. The intervention protocols consisted of a series of questions I asked each writer at different phases of the writing task regarding his or her goals, and progress made

toward completing them, in an effort to gain insights into the strategies the writer used to problem-solve while composing.

The intervention protocol questions (Appendix D), which I posed while participants wrote pre- and posttest essays, were asked at three phases of the writing process: pre-composing, composing, and post-composing. Pre-Composing Prompts lead to the generation of ideas taken from the prompt or from the writer's long-term memory, which were then transformed into the goals that drove the writer's process. Composing Prompts asked participants to comment on their progress toward meeting their goals at different points during the writing process when the participant decided he or she had finished a portion of the task. Post-Composing Prompts, posed after the writer said he or she was done with the essay, probed writers to reflect on how well they had met goals. The intervention protocol was organized in accordance with the components of the writing process identified by Flower and Hayes in their Cognitive Process Model (1981), and retained by Hayes (1996) in his revised version . Pre-Composing Prompts were asked during planning, Composing Prompts during breaks in translating, and Post-Composing Prompts as a part of reviewing. The Flower-Hayes model has often been used by researchers conducting writing process studies due to its capacity "for accounting for individual differences in how writers compose" (Graham, 2006, p. 187). In creating a more finely-grained coding scheme for the present study, I used a coding scheme based on Flower and Hayes's Cognitive process model devised by Witte and Cherry (1994) that, according to the researchers, "permits a more detailed account of some aspects of what may be involved in the act of writing that has been offered to date" (p. 29). Witte and Cherry's model identifies goals as falling into the categories of Content Goals (C),

Procedural Goals (P), and Rhetorical Goals (R). Goals were identified at the pre-composing, composing, and post-composing phases in the course of conducting pre- and posttest intervention protocols with each of the four participants. In coding protocol transcripts, I predicted that some segments would be identified as reflecting a combination of goal types, and this turned out to be the case.

In the course of my own teaching, I have noted that data, claims, and warrants – aspects of the Toulmin model examined in the present study along with participants’ goal-setting – may vary greatly in terms of effectiveness. The quality of these components, as is the case with components associated with any type of writing, is determined by the quality of thought that produced them (Kellogg, 1994). In contemplating how participants may go about problem-solving processes as they set goals and evaluate how well they met goals, I, along with the co-rater, devised a coding system for the present study. The coding system aimed at indicating the level of complexity of each codeable segment of the protocol rather than simply counting instances of these components, or reporting only how essays – products of the as yet unexamined process – had been scored, as all existing quantitative studies have done. I chose the “Knowledge Taxonomy” from Daggett’s (2004) “Rigor/Relevance Framework” (Appendix G) at the suggestion of the co-rater to gauge the complexity of each codeable utterance.

Prior to doing any argumentative writing, students taking part in the present study completed three tasks. First, participants wrote an expository piece while providing a think aloud (Appendix C). This expository piece was one of a total of four pieces of writing that participants were asked to write in the course of this study (Appendix B).

The purpose of having participants take part in a think aloud while composing an expository essay prior to performing a pre-test was two-fold: first, they became acclimated to writing under the conditions imposed by the intervention protocol; and second, gaining this experience with intervention protocols while writing an expository essay precluded any practice effect that may have impacted the problem-solving strategies they might have used while writing argumentative pieces. Next, participants were asked to complete an open-ended survey designed to assess their experiences with, and current understandings of, persuasion/ argumentation (Appendix B). I asked participants follow-up questions in the interest of clarifying their responses. Immediately following the follow-up questions, participants were asked to read seven short passages (Appendix A), determining which passages were arguments, and rating them in terms of quality. These passages were devised and used by McCann (1989) in his study.

Procedures

Parental Consent and Student Assent Forms

After working with their current teacher to identify the four participants who ultimately took part in the study, I met with these students to explain all facets of the study, distributed the student assent form, and give them the parental consent form to take home. I asked them to complete consent and assent forms and return them to me a few days prior to the first scheduled sessions.

Expository Writing Task Under Protocol Conditions

In order to get participants used to providing think alouds while, at the same time, avoiding possible practice effects, I asked them to write an expository piece (Appendix

C) under protocol conditions. The expository task took the same form (a letter) as the argumentative tasks.

Argumentative Pretest Administration under Protocol Conditions

Prior to receiving any instruction in the Toulmin (1958/2003) model, participants composed a pretest argumentative essay under protocol conditions that asked them to take and support a position on the school's gum policy (Appendix B). Intervention protocol questions used the familiar terminology of the SEE (Statement, Examples, Explanation) model. In addition to scaffolding general procedures during all phases of the composing process, these questions were also designed to elicit responses that would provide me with insights into how participants used the SEE model to problem solve argumentative writing tasks demands. A major goal of this study was determine how scaffolded instruction in the Toulmin model affected participants' problem solving strategies. In order to gain a clear understanding of these effects, I had to know what strategies participants had in their problem solving repertoires and how they used these strategies prior to providing the intervention instruction. One major criticism of existing studies is that they do not account for what participants already know. I attempted to deal with potential confounding variable by establishing prior knowledge using the pretest intervention protocol.

Independent Essay under Non-Protocol Conditions

In conducting the present study, I examined both processes and products. The intervention protocols provided detailed information about participants' problem-solving processes. A major consideration in determining effects of the intervention instruction was how well participants used problem solving strategies learned in the course of the

study independent of the intervention protocol. The independent essay, composed after the intervention instruction had been completed and before the posttest, was included in the study to meet this aim. Participants were asked to write the independent essay on the topic of whether or not students should be required to wear school uniforms (Appendix B). Scored using the same rubric and procedures as the pre- and posttest essays, the independent essay may be seen as the best indicator of how well participants progressed in their problem solving as they tackled the task independent of the scaffolding of general procedures and attention to task demands cued for by intervention protocol questions.

Argumentative Posttest Administration under Protocol Conditions

Having completed the pretest, intervention instruction, and independent essay, participants concluded their involvement in the study by composing a posttest essay in which they took and supported a position on whether or not snack machines should be turned on during the school day (Appendix B). As I predicted, the posttest intervention protocols provided the best information as to how, and to what extent, the intervention instruction in the Toulmin (1958/2003) model affected participants' problem-solving processes.

To guard against leading participants to use the terminology of the Toulmin model, the posttest protocol questions instead retained the language of the pretest protocol, prompting them using the more familiar language of SEE (Statement, Examples, Explanation). I questioned students using the terminology of the intervention instruction only if they used that language first. Given that participants would continue to receive instruction in using SEE as a part of regular classroom instruction throughout their participation in the study, I anticipated carrying on conversations and coding

protocols that contain a blend of terminology from the two models. I found many instances in the protocol transcripts where participants shifted between sets of terms given their goals at the moment. I view this crossover of concepts to be a very natural feature of the business of teaching and learning, especially when students are engaged in a zone of proximal development in which they move from the known to the new.

Additionally, I believe that a major strength of the present study is that the pretest, independent, and posttest tasks are truly similar in nature. All three asked participants to consider changing an existing school policy (gum, school uniforms, when vending machines are turned on). In making the tasks so similar, I sought to address a criticism I made in Chapter 2 of this study regarding the work of other researchers who asked study participants to perform pre- and posttest tasks that I believed may have produced skewed results due to differences in difficulty and/or the level of participants' knowledge of and experience with the topics.

Scaffolded Instruction in the Toulmin Model of Argument

Constructed Passages as Model Argumentative Texts

In Chapter 1 of this study, I argued that ineffective writing instruction is comprised of imitation of models combined with a lock-step approach to general procedures. The alternative instruction designed for this study used the Toulmin model (1958/2003) to teach task-specific procedures for composing argumentative essays in an effort to enable participants to transform knowledge, and thus effectively handle audience related tasks demands of warranting claims, providing convincing supporting data, and addressing opposition. I used McCann's (1989) constructed passages (Appendix A) *not* as model arguments in the sense that they are to be imitated by participants, but rather as

pieces to be assessed in terms of their quality. As did participants in McCann's study, the four students taking part in the present study rated these passages using a 5-point Likert scale, giving any piece that they believed was not an argument a score of zero. I also asked participants to comment on effective and ineffective aspects of each passage. These passages were used in carrying out the intervention instruction in the Toulmin model (Table 5, below). After learning the components of the Toulmin model, participants analyzed and rewrote "MCI Center" and "Violence" – two passages that are particularly devoid of argument components.

Applying the Toulmin Heuristic

In keeping with the aim of creating a zone of proximal development with each participant, building upon existing knowledge to push their problem-solving from actual to proximal levels, I introduced the Toulmin model to students using the language of the SEE model which was very familiar to them. Additionally, they were given Toulmin planning tools to rewrite "MCI Center" and "Violence." They also used the same Toulmin planning tool to assess and rewrite their pretest essay, "Gum."

Table 5 (below) provides an overview of the planned instruction for the present study:

Table 5

<i>Overview of Study / Intervention Instruction</i>				
Week	<u>Week 1</u>		<u>Week 2</u>	
Day	<u>Day 1</u>	<u>Day 2</u>	<u>Day 1</u>	<u>Day 2</u>
	Expository Task	Expository Task	Argumentative Pretest Essay	Argumentative Pretest Essay
Week	<u>Week 3</u>			
Day	<u>Day 1</u>	<u>Day 2</u>	<u>Day 3</u>	
	Lesson #1 Discuss surveys Rate constructed passages Discuss components of arguments / what makes an argument effective	Lesson #2 Introduction to TM components (relate to SEE) Apply TM components to 4 constructed passages Critique “MCI Center” Assign plan for rewrite of “MCI Center”	Lesson #3 Share plans “MCI Center” rewrite Draft revised “MCI Center” essays using Toulmin planning model Critique “Violence” and assign rewrite	
Week	<u>Week 4</u>		<u>Week 5</u>	
Day	<u>Day 1</u>	<u>Day 2</u>	<u>Day 1</u>	<u>Day 2</u>
	Lesson #4 TM Check for Understanding – Assess participants understandings of the Toulmin model Discuss rewrites of “Violence” Critique pretest essay Assign plan for rewrite of “Gum” essay (pretest)	Lesson #5 Discuss critiques of “Gum” Draft rewrites of “Gum” based on Toulmin planning model	Lesson #6 Discuss rewrites of “Gum” Discuss understandings of the Toulmin Model Assign Independent Essay – “School Uniforms”	Discuss Independent Essays - “School Uniforms”
Week	<u>Week 6</u>			
Day	<u>Day 1</u>	<u>Day 2</u>		
	Posttest Argumentative Essay	Posttest Argumentative Essay		

Research Design and Analysis

Overview of Design

This six-week intervention case study (Stake 1995, 2010) was designed in part to examine in greater depth some conclusions drawn by researchers who previously conducted quantitative studies that found that secondary students do not write effective argumentative essays (Schultz & Laine, 1987; Crowhurst, 1988; McCann, 1989; Knudson, 1992; Bruer, 1997; White & Venneman, 2000; Persky, Daane, & Jin, 2003; Salahu-Din, Persky, & Miller, 2008; Schneider, 2008; National Center for Educational Statistics, 2012), and that facets of argumentative writing that demand audience awareness – warrants, supporting data, and opposition – are the major source of difficulty experienced by middle school writers (Crammond, 1998; McCann, 1989; Knudson, 1992). In the interest of connecting this study to prior research, I adapted and used reading and writing tasks from McCann (1989). Furthermore, I used an assessment rubric based on the Toulmin model designed by McCann for use in his study that was also used by Knudson (1992) in a very similar study (one that also made grade-level comparisons of argumentative writing capability).

The method for the present study is a case study (Stake 1995, 2010). The research questions for this study required me to conduct a disciplined investigation into how participants problem-solved while composing argumentative essays before and after receiving the intervention instruction in the Toulmin model (1958/2003). The purpose of protocol research, according to Smagorinsky (1989), is to “understand what mental processes take place as someone attempts to solve a problem” (p. 465). Intervention

protocols, a type of protocol, were therefore used as the major method for data collection because they would not only provide a detailed record of the “mental processes” used by participants, but would also permit me to differentiate between strategies connected to prior knowledge and learning, and strategies acquired in conjunction with the intervention instruction. The purpose of the pretest was to determine what participants brought to the task of writing argumentative essays from their personal experiences as well as prior instruction they had been given (e.g., SEE, 2006). In order to analyze the effects of the intervention instruction in the Toulmin model, it was essential for me to understand how participants problem solved while composing argumentative essays prior to the intervention. The posttest think alouds, which were provided by participants while completing a task identical in format and task demands to the pretest, consisted of precisely the same questions posed in precisely the same order. Language and concepts connected to intervention instruction were not prompted for; however, if a participant used terminology or referred to elements associated with the Toulmin model, I posed follow-up questions or asked for clarification about how writers were using these concepts.

Although they may differ in some respects, researchers who view writing as a process share the belief that writing is recursive and goal-directed (Flower & Hayes, 1981; Bereiter & Scardamalia, 1987; Kellogg, 1994; Witte & Cherry, 1994; Hayes, 1996). Therefore, in assessing how writers problem-solve while composing, I used an intervention protocol created by Swanson-Owens and Newell (1994) and adapted to the specific demands of writing deliberation claims that prompted participants at various stages in their composing processes to articulate goals and assess their progress in

meeting those goals (Appendix D). Pre-Composing Prompts asked participants to consider task, topic, audience, their goals for writing the essay, and how they planned to achieve them. Composing Prompts asked participants to reflect on what goals they had met in each segment of writing, and if they were not yet finished with the essay, to state what they planned to do next. Post-Composing Prompts asked participants to reflect on how well they thought their essay had met task demands specified in the prompt, how well they have supported the position they had taken, and how successful they felt the essay would be in persuading the audience to accept their position.

In coding and analyzing pre- and posttest protocols side-by-side with essays produced, I attempted to determine what effects scaffolded instruction in the Toulmin model had on the problem-solving strategies used by the sixth-grade participants in the present study. The elements of the Toulmin model – data, claim, and warrant – were featured in the intervention instruction. Therefore, pretest and posttest protocols, along with the pretest, independent, and posttest essays composed by participants, were examined for the presence of these elements. The NAEP (2007) 8th Grade Persuasive Rubric (Appendix E) was used to assess the overall effectiveness of pretest, independent, and posttest essays. The research questions for the present study targeted changes in holistic and Toulmin trait performance.

Validity and Reliability

Although the present study made use of quantitative data in the form of essay scores as well as instances of types and levels of goal setting before and during composing, this study is primarily a case study that relied most heavily on the analysis of protocol data in order to meet its primary objective – articulating how, and to what

extent, scaffolded instruction in the Toulmin Model of Argument (1958/2003) affected participants' problem solving processes while composing argumentative essays with particular attention given to possible shifts in strategy from knowledge telling to knowledge transforming (Bereiter & Scardamalia, 1987). In discussing efforts to ensure validity and reliability, I first discuss in general terms features of the study that meet these ends. I then discuss in detail research related to establishing validity and reliability in the context of a case study that relies heavily on protocol data. In differentiating between methods for triangulating data in quantitative as opposed to qualitative contexts, Stake (1995) explained that for the qualitative researcher, "the protocols of triangulation have come to be the search for additional interpretations rather than confirmation of a single meaning" (p. 115). I will conclude this section with a general description of my plans to triangulate the data I will collect.

In designing the present case study, I took steps to guard against threats to validity and reliability stemming from history, maturation, testing, and instrumentation (Gall, Borg, & Gall, 2006). The first two threats – history and maturation – were not factors due to the fact that the study was conducted over the course of six weeks. I made every attempt to identify events that may have influenced participants beyond relevant learning in their regular classroom setting (i.e., instruction in SEE). Due largely to the short instructional period, I found no such events to report. Additionally, aside from changes that may have taken place in participants' problem solving strategies, maturation taking place over a period of a mere six weeks did not influence results. I guarded against threats posed by testing by acclimating participants to the intervention protocol using an expository task, and administered the argumentative pretest prior to instruction in the

Toulmin model. A period of three weeks separated pre- and posttest essays, thus further reducing any possible benefit that might have resulted from the pretest. Finally, an expert panel reviewed all instruments used in the study and deemed essay prompts and protocols to be sufficiently similar to ward off claims that results could be viewed as invalid or unreliable due to differences in instruments used in the present study.

Having taken steps to guard against threats, I also made efforts to increase validity and reliability. In addition to using sufficiently similar instruments to collect data from multiple sources (triangulation), I also used a blind scoring procedure with my co-rater in the interest of increasing validity. Furthermore, selecting participants who have a high level of metacognitive awareness coupled with an ability to express themselves clearly increased validity, as did the use of multiple cases rather than focusing on merely one, as some other researchers have done (e.g., Emig as early as 1971, and Lunsford as recently as 2002). Aside from these more general steps, I also researched measures that qualitative researchers may take to increase the validity and reliability of protocol-based studies.

Validity and Reliability of Protocol-Based Studies

In the context of qualitative research, a study may be said to be valid to the extent that a researcher has demonstrated clear connections between or among the variables studied, and that readers can apply the study's findings to persons and situations outside of the context in which the study was conducted (Krathwohl, 2009, pp. 684-686).

Because qualitative research relies heavily on verbal data, the protocol, in its various forms, is a major method of data collection used in qualitative research. The validity and reliability of this study must be addressed as they relate to the use and analysis of

protocols. In designing this study, I attempted to identify and utilize procedures and instruments that would maximize the validity and reliability of findings. In conducting the study, I was committed to providing enough information to allow others to assess its results in terms of its validity (applicability to other contexts and populations) and reliability (ability to run the study using the same instruments and procedures, and evaluate the level of similarity between the sets of results – an endeavor Stake, 1995, described as establishing “correspondence”). Before addressing the specific methods commonly used in case study research, I will first explain why a case study was selected as the method for this study.

Existing research on the argumentative writing abilities of secondary students reveals that the vast majority of them experience difficulty when writing to persuade (Crowhurst, 1988; Knudson, 1992; McCann, 1989; White & Venneman, 2000). It was in reading these studies that I first encountered the Toulmin Model of Argument (1958). McCann (1989) and Knudson (1992) used the Toulmin model in analyzing writing samples produced by study participants. McCann constructed a scoring rubric aimed at assessing the quality of secondary students’ essays in terms of the major components of the Toulmin model – data, claim, warrant, opposition, and response to opposition – a rubric that was also used by Knudson in her study. The present study did not focus on the ability to make claims because this facet of argumentative writing has not been found to be problematic. While a considerable number of quantitative studies investigating secondary students’ proficiency in writing arguments have been conducted, I was unable to locate any qualitative studies designed to explore students’ thought processes before, during, and after composing. Thus, while existing research strongly suggests that

secondary students struggle with writing arguments, and even pinpoints the facets of argumentative writing that pose the greatest areas of difficulty, what remains unclear is *why* secondary students experience these difficulties.

By closely examining how participants problem solve while composing argumentative essays, I attempted to generate possible explanations as to why sixth-grade writers have difficulty warranting arguments, generating convincing supporting data, and recognizing and responding to opposition. In trying to find an explanation for a phenomenon that has been repeatedly observed and findings that have been replicated in quantitative studies, as well as describing in detail the instruction participants receive in the argument model selected – two things no existing study has done – I have attempted to address what I perceive to be two gaps in existing research.

In selecting case study as the method for the present study, I understand that findings may not be accepted as generalizable due to a number of limitations, a major one being that findings cannot be replicated, at least not in the manner that findings from a quantitative study can be replicated. Bogdan and Biklen (2002) asserted that reliability in qualitative research, unlike the concept of reliability in quantitative research, does not carry with it any expectations that findings will (or even can) be replicated (p. 35). Bogdan and Biklen went on to explain that the specific academic orientation of the researcher will shape what questions are posed, who is studied, and what types of data are sought, and thus, “[q]ualitative researchers tend to view reliability as a fit between what they record as data and what actually occurs in the setting under study rather than the literal consistency across different observations.” In the event that two researchers studied the same people in the same context, Bogdan and Biklen claimed that they would

raise questions about reliability only if “one or both studies ... yielded contradictory or incompatible results” (p. 36). I was not able to run the study at the same site using other investigators, nor was I able to run the same study with other investigators collecting data at other similar sites. However, should a reader conclude that my findings vary drastically from those reported by researchers who have conducted studies of secondary students’ (and specifically sixth-grade students’) argumentative writing abilities, and/or should a reader determine that I and co-rater arrived at radically different interpretations of protocol data, that reader could claim that the present study is not sufficiently reliable. Smagorinsky (1989) stated that case study protocol research is undertaken by researchers in an effort to “understand what mental processes take place as someone attempts to solve a problem” (p. 465). In the paragraphs that follow, I discuss in more general terms procedures I followed in designing in carrying out the present study with the end of maximizing the validity and reliability of findings.

Establishing the validity and reliability of data derived from case study protocols is a difficult task. Kvale (2008) in his discussion of validity noted that efforts to establish validity are gauged throughout the process of designing, running, and evaluating a study, rather than simply serving as a standard to be applied to an end result (p. 236). Although the concepts of validity and reliability may be associated more closely with quantitative research, Krathwohl (2009) asserted that qualitative research may possess both internal and external validity. Gall, Borg, and Gall (2006) claimed that a case study may be said to be reliable should another investigator at another time apply the same procedures and use the same instruments in investigating a similar case and derive very similar results (p. 768). Throughout all phases of this study, I will attempt to follow the procedures

recommended by Kvale in an effort to produce a study that valid and reliable according to the standards articulated by Krathwohl, and Gall, Borg, and Gall.

According to Krathwohl (2009), a qualitative research study may be said to possess internal validity if the conclusions drawn are reasonable and support prior research, the supporting data and the theoretical assumptions of the study are consistent with one another, and the findings are in some way superior to other previously advanced explanations (p. 338-342). The decision to use passages, prompts, and rubrics designed and used by McCann (1989), and to use a holistic rubric in conjunction with the Toulmin-McCann rubric as Knudson (1992) did, constitutes an effort on my part to establish internal validity as described by Krathwohl above. The studies by McCann and Knudson were published in refereed, scholarly journals, and have often been cited by other researchers. This study is designed to “support prior research” by building upon the findings of existing studies. With a firm grasp of the Toulmin model – a model that I have used extensively in my own teaching with high school students – I endeavored to present conclusions that, although they may differ in some respects from conclusions drawn by other researchers, are nonetheless “reasonable” because the connection between “theoretical assumptions” and “supporting data” are “consistent with one another.” Perhaps the most important feature of the design of this study is that it focuses upon the neglected facet of understanding how writers problem solve during all phases of the composing process, and thus will address gaps in existing research. Thus the findings might be viewed as being “in some way superior to other previously advanced explanations” in that they may provide a more complete understanding of why students struggle, and how instruction in a task-specific procedural model effects the problem

solving strategies of participants. In focusing upon one model that has been used by other researchers to assess the quality of secondary students' argumentative writing, I hope to have better "[demonstrated] clear connections between or among the variables studied" – in this case, the elements of the Toulmin model – a model that was used in the process of instruction and protocol analysis, not merely in assessing written products.

Krathwohl (2009) argued that a good qualitative study may possess external validity should a reader be able to conclude that dynamics at work in other contexts with which the reader is familiar are in some way explained or illuminated by study under consideration. Krathwohl similarly maintained that a good qualitative study may possess external validity should a knowledgeable reader be able to make "a conceptual leap from the evidence of one study to similar situations" (p. 343). Krathwohl cautions, however, that due to the idiosyncratic nature and relatively small amount of data collected in qualitative studies, assertions of generalizability must not be overstated. Unlike existing studies, none of which provides detailed descriptions of instruction or how writers problem solved while composing argumentative pieces, the present study attempted to allow readers to evaluate the extent to which the classroom instruction, the intervention instruction given, the protocol transcripts, and the essays the participants produced, permitted the "conceptual leap" Krathwohl described. Throughout the instructional period, participants continued to use and receive instruction in SEE (Statement, Examples, Explanation) as a part of regular classroom instruction, thus, in my view, boosting the ecological validity of this study. Participants were not isolated from regular learning environments and indoctrinated in an alternative model. In fact, pre- and posttest intervention protocols intentionally used the language of SEE – the model

participants were familiar with – in an effort to achieve a detailed understanding of how participants used that model, and to differentiate between strategies they brought to the study with them, and strategies learned in the course of receiving the intervention instruction. In reporting findings, I have resisted making any claims of generalizability whatsoever. Krathwohl (2009), Merriam (1998), and Lincoln and Guba (1985), among others, have suggested that the best way for a qualitative researcher to establish external validity is to carry out a number of multi-case/multi-site studies in which comparable cases in comparable environments are studied over time using the same methods of data collection. Although I do not aspire to make any claims of generalizability based on the findings of the present study, in the future, I may attempt the kind of multi-site and multi-case study these researchers recommend. The present study, however, focused exclusively on gaining a rich, detailed, finely-grained understanding of how four sixth-grade writers problem-solve while composing deliberation claims before and after receiving scaffolded instruction in the Toulmin model.

In creating the survey, prompts, intervention protocols, and coding schemes; training and working with a co-rater in scoring essays produced by participants; and coding and analyzing protocol transcripts, I attempted to adhere to the following guidelines for establishing validity suggested by Kvale (2008). First, Kvale claimed that a researcher must arrive at a clear understanding of the theoretical territory to be explored, and then design a study employing methods that will allow needed data to be collected. The study must then be carried out in a manner consistent with existing theory. As a middle-school teacher, I taught students how to write argumentative pieces, including deliberation claims, but never instructed my seventh-grade students in SEE,

although I was aware of the model and had colleagues who used it. Later, as a high school teacher, I instructed eleventh- and twelfth-grade students enrolled in my English classes in the Toulmin model. Differentiating between these models, and clarifying the practical and theoretical underpinnings of each, is essential to establishing validity.

Furthermore, Kvale argued that the study must also have the quality of being beneficial to other researchers in the field as well as individuals who will participate. I believe that participants benefited from receiving instruction in the Toulmin model, and I viewed benefitting participants to be a major objective in providing the intervention instruction. I communicated the benefits of participation to teachers, administrators, participants' parents or guardians, and most importantly, the participants themselves. In carrying out a qualitative study that attempted to address the question, "Why do students struggle while composing argumentative essays?", as well as providing detailed explanation of instruction in an argument model – two things existing studies have not done – I attempted to make some small contribution to the field.

When actually conducting interviews, Kvale (2008) stated that validity "pertains to the trustworthiness of the subject's reports and the quality of the interviewing itself, which should include a careful questioning as to the meaning of what is said and a continual checking of the information obtained as validation *in situ*" (p. 237). A great strength of intervention protocols, as is the case with other forms of semi-structured interviews, is that they pose a set of purposefully sequenced questions while, at the same time, allowing both researchers and participants to seek clarification as to questions asked and responses given. Finally, for Kvale, establishing validity requires getting validation from participants and other experts, and determining if the final report contains

conclusions that are supported by the data (p. 237). I frequently asked participants for clarification during the administration of intervention protocols. I also had the opportunity to seek clarification from participants during instruction, and in discussing pretest, independent, and posttest essays. Due to time constraints, I was not able to question participants about intervention protocol data. I submitted survey questions, intervention protocols, prompts, rubrics, and proposed coding schemes to an expert panel consisting of my dissertation director, a 25-year veteran English teacher who has agreed to serve as a co-rater, and a 15-year veteran middle school teacher who has taught RLA to student in grades 6, 7, and 8 at another school. Additionally, I asked the sixth-grade teacher who recommended participants to assess the survey questions and intervention protocol prompts. All instruments used in the present study were revised in response to expert panel feedback. Survey questions and intervention protocols were also reviewed and approved by University of Maryland's Institutional Review Board (IRB).

In addition to adhering to procedures aimed at maximizing the validity of the present study, I also worked to ensure to the greatest extent possible that findings may be viewed as reliable. In the context of qualitative research, Kvale (2008) stated simply that “[r]eliability pertains to the consistency of the research findings” (p. 235), and discussed a few types of reliability in case study research as well as how reliability may be achieved. During any type of interview, (and intervention protocols may be classified as a type of semi-structured interview), Kvale argued that a researcher should strive to achieve “interviewer reliability” which primarily involves avoiding any questions that in any way skew interviewee’s responses (p. 235). For the purposes of the present study, it was essential that I resisted prompting participants about strategies they learned in

receiving scaffolded instruction in the Toulmin model, or introducing terminology associated with the intervention, while conducting posttest protocols. Rather, I remained committed to probing participants to explain their problem-solving in their own language and on their own terms. In coding and analyzing interview data, Kvale suggested that a researcher work to attain “coder reliability” by having two coders code data independently and discuss areas of disagreement, bringing in a third coder if consensus was not reached (p. 208). Although the consensus model proved to be a very productive method of analyzing protocol transcripts and essays, much of the coding and scoring done with the co-rater was carried out independently in order to boost the reliability of the coding scheme. In addition to procedures that require another person or persons to analyze interview data, a researcher may employ what Kvale terms an “explication of procedures” which, as “[a]n alternative or a supplement to a multiple interpreter control of analysis” entails having the researcher “present examples of the material used for the interpretations and explicitly outline the different steps of the analysis process” (p. 209). In addition to explaining in detail how the co-rater and I worked individually and collaboratively to analyze data, I also provided a detailed “explication of procedures” wherever I thought it was warranted.

Triangulation

Data collected in conjunction with the present case study was triangulated. Stake (2010) has described triangulation as “using additional data to check and expand one’s interpretations” (p. 221). Case study researchers triangulate data to “increase confidence” in it, especially when “a description is relevant but debatable” as well as when “the data are evidence to support an assertion” (Stake, 2010, p. 124). In carrying

out the present study, I employed two types of triangulation – “investigator triangulation” and “methodological triangulation.”

By having another experienced investigator score essays and code protocols, as well as using an expert panel to determine the appropriateness of instructional materials, surveys, and interviews, I am engaged in what Stake (1995) referred to as “investigator triangulation.” Although I did not have other investigators actually in the field with me, was nevertheless able to provide my co-rater and expert panel members with observation notes, protocol transcripts, and work produced by participants in connection with the intervention instruction “to discuss alternative explanations,” (p. 113), including those which disconfirm interpretations I have formulated.

In taking a mixed method approach wherein I collected data from a variety of sources – surveys, protocols, essays, and work done in connection with the intervention instruction – I engaged in what Stake (1995) termed “methodological triangulation,” the aim of which is “to nullify some extraneous influences” (p. 114) which may cloud the meanings and patterns I found. Along with member checks, reliance on an expert panel, and the use of a co-rater, a mixed method approach to data collection rounded out my plans for triangulating data. It is my hope that these measure prove sufficient to instill trust in readers that the patterns, or as Stake (1995) calls them, “correspondences,” that I found may be deemed trustworthy.

Throughout all phases of the present case study, I have done everything in my power to implement procedures aimed at engendering trust on the part of readers that findings presented may be accepted as valid and reliable.

Analysis

Scoring

Evaluation of Writing, Rater Training, and Blind Scoring Procedures

Pretest, independent, and posttest essays composed by participants in the study were scored using the Toulmin-McCann rubric (Appendix F) devised by McCann (1989) and used also by Knudson (1992). In the interest of connecting findings in this study to the findings of NAEP (National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salahu-Din, Persky, & Miller, 2008; Schneider, 2008; White & Venneman, 2000), the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E) was also used in assessing the overall quality of essays.

The co-rater for this study was an English educator with 24 years of classroom teaching experience. The co-rater regularly reads the College Board's AP Language and Composition Exam, has served as a table leader at AP readings, and, in his role as department chair, has trained teachers in the use of a variety of rubrics to assess writing tasks (e.g., those associated with Common Core). The co-rater also has prior knowledge of NAEP assessment rubrics, is familiar with the Toulmin model, and holds an earned doctorate in English education. At the conclusion of the study, I met with the co-rater on three occasions. First, I reviewed the Toulmin/McCann (1989) rubric and the NAEP (2007) 8th Grade Persuasive Rubric with the co-rater. These two rubrics were used to assess essays produced by the participants. Training was done using anchor papers written by sixth-grade students who attend the school where the study was conducted, but who did not participate. At the second meeting, I scored the pre-test essays with the co-rater. At the third meeting, we scored the posttest and independent essays in that order.

Blind scoring procedures were used in scoring the essays. The co-rater had no knowledge of which essays were scored at each session – pretest, independent, or posttest – or in what order. After scoring essays independently, the co-rater and I discussed differences and attempted to achieve consensus. I made arrangements for the middle-school teacher on the expert panel to score an essay in the event that consensus between the co-rater and I could not be reached, but that contingency never took place.

Once I keyed in protocol transcripts, I carefully examined participants' responses to prompts and identified segments as utterances that were unified by writers' stated or inferred goals. Only ideas not previously expressed in the protocol were identified as segments to be coded. Reiterations were not be coded to avoid confusing simple repetitions with the use of problem-solving strategies. Segmenting of protocol transcripts was very low inference. Segments were generally correlated with a particular goal or task stated by the participant. I segmented the transcripts prior to giving copies to the co-rater to ensure that we were independently coding the same segments, and to avoid overloading him with the task of segmenting as well as analyzing segments. After the co-rater independently assigned levels and goal types to segments I identified, we met to code protocols on two occasions. At the first meeting, we discussed the level of thought of each segment, determining whether each utterance was limited to material taken directly from the prompt and/or consisted of simple responses to the demands of the prompt ("Level 1"); demonstrated some extension of material from the prompt by way of application or analysis ("Level 2"); or, went beyond material from the prompt to reveal content, procedural, or rhetorical material from the writer's long-term memory that may or may not have been synthesized with material from the prompt ("Level 3"). These

levels of response were derived from Daggatt's Rigor-Relevance Framework (Appendix G) and coincided with movement from knowledge telling to knowledge transforming. In a similar fashion, at the second meeting, we discussed our classifications of each segment in terms of type(s) of goal(s) – content, rhetorical, procedural, or some combination thereof. Once again, the middle school teacher on the expert panel was tasked with coding segments in the event that the co-rater and I were unable to reach consensus. This happened on only one occasion. I coded some segments on the posttest protocol wherein participants referred to elements of the Toulmin model as Level 1 utterances. The co-rater had coded them as Level 2, arguing that because I had not introduced Toulmin model terminology into the discussion that these responses were not taken directly from the prompt and went beyond the designation of simple responses, they could not be classified as Level 1. I agreed.

Summary

In carrying out the present study, I used the qualitative methodologies described above to examine the effects of scaffolded instruction in the Toulmin Model of Argument (1958/2003) on the problem-solving strategies of four sixth-grade writers.

In Chapter IV, I will report the findings of the present study which I derived from surveys participants completed prior to the intervention instruction, pretest and posttest essays and protocols, and an essay participant's composed independent of the scaffolding provided by the protocol.

Chapter IV

Results

In this chapter, I present the results of this case study (Stake 1995, 2010) investigating the effects of scaffolded instruction in the Toulmin (1958/2003) Model of Argument on the problem solving strategies of four sixth-grade writers composing argumentative essays. These results were derived from an analysis of participants' pre- and posttest essays, intervention protocols, and independently composed essays. Participants provided a think aloud while problem solving the demands of an argumentative writing task before and after receiving six units of scaffolded instruction in the Toulmin model. These two argumentative tasks served as a pre- and posttest for the present study. Participants also composed an argumentative essay identical to the task demands of the pre- and posttest essays after the intervention instruction was provided, and prior to the posttest (see Table 5 above). For the sake of clarity, especially in regards to differences in participants' performances with and without the support provided by the intervention protocol, I will discuss these "independent" essays separately from pretest and posttest essays. By separating these discussions, I will highlight differences in performance at proximal levels (with the support of the protocol) and actual levels (indicating what participants were able to do without the support of the protocol). The present study addresses the following questions:

1. Does scaffolded instruction in the Toulmin model improve the overall quality of participants' argumentative essays?

2. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of warranting arguments?
3. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of providing convincing supporting data?
4. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of anticipating and responding to opposition?

Overview of Pretest and Posttest Essay Results

My discussion of participants' essays is informed by Table 6 below. In the column immediately to the right of participants' pseudonyms, I have recorded scores for their pre- and posttest essays based on the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E). In the remaining four columns, I have listed scores for warrant, supporting data, opposition, and response to opposition based on McCann's (1989) rubric (Appendix F) which indicates how effectively participants composed their argumentative essays in terms of these Toulmin model elements. All essays were scored in collaboration with an experienced and well-trained co-rater. I discuss each participant's pre- and posttest essays in its entirety followed by a discussion of improvements in holistic scores noted by me and the co-rater. This discussion addresses my first research question which examines whether or not participants' argumentative essays improved in terms of overall quality as a result of instruction they received in the Toulmin model. I then discuss participants' pre- and posttest essay scores in terms of the Toulmin-McCann

(1989) rubric. This discussion relates to the other three research questions of this study that assess whether or not instruction in the Toulmin model enabled participants to more effectively handle the audience related task demands of warranting arguments, providing convincing supporting data, and anticipating and responding to opposition. I indicate the level of complexity and goal type (content, rhetorical, procedural, or some combination) of each coded segments using the coding scheme created for the study (Appendix H).

This discussion of essay scores also includes excerpts from protocol transcripts that illustrate how participants problem solved the demands of the pre- and posttest tasks. Particular emphasis is given to how participants set content, rhetorical, and procedural goals, and how well they met these goals throughout the process of composing each essay. The primary purpose of this analysis is to assess if, and to what extent, scaffolded instruction in the Toulmin (1958/2003) Model of Argument may have affected the problem solving strategies used by participants, and potential progress they may have made in moving from the more simplistic, linear strategy of knowledge telling associated with the SEE model to the more complex, recursive strategy of knowledge transforming (Bereiter & Scardamalia, 1987) which demands movement between the problem spaces of content and rhetoric (Scardamalia, Bereiter, & Steinbach, 1984) – a strategy facilitated by the Toulmin model. Furthermore, I discuss the extent to which participants were able to use the model “flexibly” as did participants in Yeh’s (1998a) study.

The table below includes both holistic scores for pre- and posttest essays as well as scores relating to the use of the Toulmin elements of warrants, supporting data, and opposition/response to opposition. A member of my expert panel questioned me as to why McCann (1989) chose to make the categories of propositions, claims, and warrants

worth 0, 2, 4, or 6 points, and opposition and response to opposition worth 0, 1, 2, or 3 points. In reviewing McCann’s article, I could not find an explanation; however, I have surmised that McCann wanted to make opposition worth the same number of points overall (6), but had to make accommodations for the possibility that a writer might address one facet of this category but not the other (e.g., acknowledge opposition but fail to respond to it, respond to opposition that is implied but not stated).

Table 6

Holistic and Toulmin-Trait Scores for Pre- and Posttest Essays

<u>Participant</u>	<u>Pretest Essay – Gum</u>						<u>Toulmin</u> 0-24
	<u>NAEP</u> 1,2,3,4,5,6	<u>Claims</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3	<u>Response</u> 0,1,2,3	
Jessica	3	4	2	0	0	0	6
Brian	1	4	2	0	0	0	6
Ann	5	6	4	0	3	3	16
David	6	6	4	0	3	3	16

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

<u>Participant</u>	<u>NAEP</u> 1,2,3,4,5,6	Posttest Essay – Snack Machines					<u>Response</u> 0,1,2,3	<u>Toulmin</u> 0-24
		<u>Claims</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3			
Jessica	4	4	4	4	0	0	12	
Brian	4	4	4	4	1	2	15	
Ann	6	6	4	4	3	3	20	
David	6	6	6	4	3	3	22	

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

According to Table 6, all four participants’ holistic scores improved from pretest to posttest (with the exception of David, who earned the maximum holistic score of 6 on the pretest essay and maintained this level of performance). In terms of the Toulmin elements, perhaps the most notable difference from pre- to posttest performance is that none of the participants included warrants in their pretest essay, and all four did so in their posttest essay. Jessica and Brian doubled or slightly more than doubled their scores on the Toulmin-based scale, and Ann and David scored 4 and 6 points higher respectively. All four participants improved in terms of the quality of data they provided. The two students identified as “high ability” – Ann and David – made use of opposition in their pretest essay but neither of the “average ability” participants – Jessica and Brian – did so. On the posttest Ann and David maintained the highest score for opposition and response to opposition, but Brian made only minimal use of opposition and Jessica did not include this element in her posttest essay at all. This may suggest that Ann and David

had already made more progress in considering audience when writing in the argumentative mode than Jessica and Brian had. As I worked to make meaning of this finding, I realized that the three core elements of the Toulmin model – claim, data, and warrant – do not cue directly for consideration of opposition, but two components of the model that were not featured in instruction – qualification and backing – *do* require writers to alter claims, data, or warrants to make them more acceptable to an intended audience. I discuss scores and their meanings in greater depth below. First, in order to make the protocol excerpts I present comprehensible to the reader, I will explain how I coded the protocols and provide examples for each pre-composing protocol question. I will also briefly review relevant aspects of the methods used in carrying out the present study.

Overview of Method and Coding of Protocols

Participants

The participants for this study were four sixth-grade students at a suburban middle school in the mid-Atlantic region of the United States. Two students, “Jessica” and “Brian,” were identified as being of “average ability,” and two other students, “Ann” and “David,” were identified as being “high ability.” I selected these participants based on the recommendation of a sixth-grade teacher who was asked to identify students whom she would categorize as high- and average-ability, and who were also good communicators (which was important given the method of data collection) and solid students (capable of compensating for missed instructional time). Prior to asking the teacher for her recommendations, I identified potential participants based on data from national and state standardized test scores (CTBS, Gates-Maginitie) and used this data to

confirm the teacher's designations of high- and average-ability, and to establish that all participants read at or above grade-level.

Prior Instruction

“SEE”, an acronym for Statement-Example-Explanation, is one of many manifestations of the assertion-support-comment model. Participants received instruction in SEE in their RLA class, and this model was used in teaching students how to write brief constructed responses (BCRs) on the state's mandated assessment. In addition to RLA-related items, students on the team from which participants were drawn also used this model in composing BCRs in social studies and science classes. BCR prompts ask students to take and support a position, and thus may be categorized as arguments according to Fulkerson (1996). This model is typical of writing instruction critiqued as being inadequate by several researchers (Applebee, 1986; Applebee, Langer, Jenkins, Mullins, & Foertsch, 1990; Bereiter & Scardamalia, 1987; Everson, 1991; Hillocks, 1986; Hillocks, 1995; Hillocks, 2011; Langer & Applebee, 1987; McCutcheon, 2006; Prichard & Honeycutt, 2006; Schultz, 2006; Smagorinsky, 1994; Swanson-Owens & Newell, 1994). Smagorinsky (1994) proposed a more effective approach to instruction that goes beyond presenting a combination of declarative knowledge and general procedures to include what he termed “task-specific procedures.” The intervention described below was designed to assess the quality of writing and thinking produced by sixth-grade participants using SEE prior to instruction in the Toulmin model, then compare the quality of writing and thinking produced after receiving direct instruction in the Toulmin model – a model that, unlike SEE, provides learners with task-specific strategies and has the potential to facilitate knowledge transforming.

Intervention

After securing student assent and parental consent, during the first week of the study, participants received instruction and practice in providing think-alouds as they worked on composing an expository essay (Appendix B and C). Also during the first week of the study, participants completed a survey (Appendix B) and a follow-up interview about their experiences with and current knowledge of persuasion. On the advice of my expert panel, I used the terms “persuade” and “persuasion” rather than “argue” and “argumentation” to avoid confusing participants who would likely associate these terms with their more common meanings associated with disagreement. At the beginning of the second week of the study, participants provided a think aloud as they composed an argumentative essay in response to a prompt (Appendix B). This essay served as a pretest. Over the next three weeks, participants met with me two times per week, receiving a total of six units of direct instruction in the Toulmin model. After each forty-five minute session, they engaged in independent practice that required them to make use of concepts and skills presented in the instruction. An independent essay (Appendix B), given at the end of the fifth week of the study, required participants to compose an essay identical in task demands to the pretest and the posttest. For the posttest (Appendix B), participants provided a second think aloud while composing an argumentative essay. The posttest was completed during the sixth week of the study. Table 5 (above) provides an overview of the components of the present study.

Instruments

Intervention protocols (Swanson-Owens & Newell, 1994) are a type of protocol wherein a teacher or researcher questions writers at different stages of the writing task

regarding their goals and progress made toward completing them in an effort to gain insights into the strategies writers used to problem-solve while composing. Intervention protocol questions are posed at three stages: pre-composing, composing, and post-composing. Pre-Composing Prompts lead to the generation of ideas taken from the prompt or from the writer's long-term memory that are then transformed into the goals that drive a writer's process. Goals fall into the often overlapping categories of Setting Content Goals (C), Setting Procedural Goals (P), and Setting Rhetorical Goals (R). Composing Prompts ask participants to comment on their progress toward meeting their goals at different points during the writing process when the participant decides he or she has finished a portion of the task. Post-Composing Prompts, posed after the writer has said he or she was done with the essay, probe writers to reflect on how well they have met Content, Procedural, and Rhetorical Goals (Swanson-Owens & Newell, 1994).

In the course of my own teaching, I have noted that data, claims, and warrants – aspects of the Toulmin model that were examined in this study along with participants' goal-setting – may vary greatly in terms of effectiveness. The quality of these components is determined by the quality of the thought that produced them (Kellogg, 1994). In studying participants' problem-solving processes as they relate to goal-setting and evaluation of how well they met goals, I, along with the co-rater for this study, devised a coding system aimed at indicating the level of complexity of each codeable segment rather than simply counting instances of these components as nearly all existing studies have done. The "Knowledge Taxonomy" from Daggett's (2004) "Rigor/Relevance Framework" (Appendix G) was used as a metric to assess the complexity of each codeable utterance. Table 7 below illustrates how the intervention

protocol I used based on those devised by Swanson-Owens and Newell (Appendix D) maps onto Flower and Hayes's "Cognitive Process Model" as adapted by Witte and Cherry (1994) who endeavored to create a coding scheme that "permits a more detailed account of some aspects of what may be involved in the act of writing that has been offered to date" (p. 29). Furthermore, it explains how utterances were qualitatively leveled. Finally, it provides examples of coded utterances from the posttest task which asked participants to write a letter to the principal in which they seek to convince him why or why not snack machines should be turned on during the school day (Appendix B). A table showing the type and level of each coded segment for each participant's pre- and posttest essays may be found in the Appendices (Appendix I). Movement from lower to higher levels may indicate a shift from knowledge telling to knowledge transforming (Bereiter & Scardamalia, 1987), and with it, a more thorough effort to meet the audience related task demands of argumentative tasks by moving between the problem spaces of content and rhetoric (Scardamalia, Bereiter, & Steinbach, 1984). This was especially the case when, in at least some instances, participants generated convincing data based on warrants generated as they considered the perspectives of their audience.

Writing Prompts

The three argumentative writing tasks used in this study (Appendix B) are based on those created and used by McCann (1989). All are identical in that they ask participants to imagine that they are members of a student council and have been charged with the task of writing a letter to their principal supporting or opposing a proposed change to a school policy. A pretest prompt asked participants to argue for or against allowing students to chew gum during their lunch period. An independent essay written

under non-protocol conditions required them to take and support a position on the introduction of school uniforms. The posttest task asked them to take a stand on whether or not snack machines should be turned on and made available to students during the school day. In using a format (letter) that is familiar to participants, and keeping the rhetorical situation and type of task (deliberation claim) consistent across tasks, I am attempting to isolate problem-solving behaviors associated with argumentative writing, and avoid participants having to think about form, audience, their identities as writers, and other task demands .

Scoring of Essays

The co-rater for this study was an English educator with 25 years of classroom teaching experience. The co-rater has also read the College Board's AP Language and Composition Exam, has recently served as a table leader, and was very experienced in the use of rubrics to assess writing tasks. The co-rater also had prior knowledge of NAEP assessment rubrics, was familiar with the Toulmin model, and had earned a doctorate in English education from a research university. At the conclusion of the study, I met with the co-rater on three occasions to score essays. First, I reviewed with the co-rater the two rubrics used to assess essays produced by participants – the Toulmin/McCann (1989) rubric, and the NAEP (2007) 8th Grade Persuasive Rubric. Training was done using anchor papers written by sixth-grade students who attend the school where the study was conducted but who did not participate in the study. At the second meeting, the co-rater and I scored the pretest essays. At the third meeting, we scored the posttest and independent essays in that order. The co-rater had no knowledge of which essays were

scored at each session, or in what order. Data from the scoring sheets we generated in the course of scoring essays are reproduced in Table 6 above.

Protocol Analysis

Segments

All Intervention Protocol Prompts have in common that they prompt writers to engage in goal-setting. Pre-Composing Prompts ask writers to consider task, topic, audience, their goals for writing the essay, and how they will achieve them. Composing Prompts ask writers to reflect on what goals have been met in each segment of writing. Post-Composing Prompts ask writers to reflect on how well their essays have met task demands specified in the prompt, how well they have supported the position they have taken, and how successful they feel the essay would be in persuading the audience to accept their position. I carefully examined participants' responses to prompts and identified segments as utterances that were unified by the writer's stated or inferred goals. Only ideas not previously expressed were coded. Reiterations were not coded to avoid confusing simple repetitions with problem-solving.

Coding

The coding system I devised for the study in cooperation with the co-rater is based on Daggett's (2004) Rigor/Relevance Framework (Appendix G). In order to assure that the co-rater and I would be analyzing the same segments, I identified segments in each protocol in which a participant generated goals or ideas connected to goals. I did not include segments wherein a participant simply repeated a previously stated goal or bit of content. Identification of segments was a low inference activity, so for the sake of my co-rater, who had the daunting task of scoring 12 essays and coding 8 protocol

transcripts, I performed this task without his assistance. After segments were identified, the co-rater and I independently determined the goal type(s) for each segment (Content, Rhetorical, Procedural, or some combination) and whether each utterance showed awareness and/or comprehension in the form of using material taken directly from the prompt or that simply addressed the demands of the prompt (“Level 1”); demonstrated some extension of material from the prompt by way of application or analysis (“Level 2”); or, went beyond material from the prompt to synthesize and/or evaluate content, procedural, or rhetorical ideas from the writer’s long-term memory (“Level 3”). This movement from text and simple plans to consideration of content and rhetorical ideas represents a shift from knowledge telling to knowledge transforming (Bereiter & Scardamalia, 1987). In discussing coding with the co-rater, I then made use of a consensus model. In all instances, the co-rater and I were able to reach consensus. The majority of discrepancies were due to one difference of perspective, namely, that I coded references to the Toulmin model as “Level 1” responses, and the co-rater pointed out that because references to the Toulmin model were not prompted for by me anywhere in the protocol transcripts, all such references should be coded as “Level 2”, an interpretation I agreed with completely. In the interest of avoiding any possible bias about the difficulty of different types of goals (e.g., that rhetorical goals are automatically more complex than procedural or content goals), I opted to do codings for levels independent of codings for goal-type, which were done subsequently. The complete coding system is described and illustrated in Table 7 below.

Table 7

Definitions of Goals, Levels, and Examples of Each from Intervention Protocol Pre-Composing Prompts

Description of Types of Goals (Cherry & Witte, 1994, pp. 29-30)

Content – “plans for generating ideas or content”

Procedural – “tell the writer what to do next” or “specify a multilayered plan for approaching the whole writing task”

Rhetorical – “set out various relationships among ... reader, writer, content, and text”

Description of Levels (“Knowledge Taxonomy – Rigor/Relevance Framework”, Daggett, 2004)

1 Knowledge/Awareness – Comprehension

Content, Procedural, and Rhetorical goals are based upon, and largely or entirely limited to, material from the prompt.

2 Application – Analysis

Content, Procedural, and Rhetorical goals refer directly or indirectly to material from the prompt, but demonstrate some extension in the form of application and/or analysis.

3 Synthesis – Evaluation

Content, Procedural, and Rhetorical goals may directly or indirectly refer to material from the prompt, but are based largely or entirely upon information from the writer’s long-term memory.

Examples of Levels and Types of Responses to Intervention Protocol Prompts for Posttest Essay “Snack Machines”

Understanding of Task – “What does this prompt ask you to do?”

- Brian: It’s asking me to, um, write a letter to, to Mr. H., um, about if I agree or disagree that we should have snack machines on during school hours. **1C**
- Ann: Um ... it just asks you to decide, first of all ... whether you’re against it or you’re with it, and then you have to decide like ... and then you have to give reasons to support your thing like, if you don’t, if you think Mr. H. made a good decision ... you explain why the decision was good. If you didn’t like it and thought it was bad, you explain why you thought it was bad. **1CP**
- Ann: ... whether or not you chose a position would depend on what you say. Alright ... ‘I think it’s O.K if [snack machines are] turned on during the day. It’s not during breakfast. But you understand having to supervise the cafeteria. Maybe not during breakfast, but maybe during lunch.’ **2CP**

Writer’s prior knowledge of topic – “What are some things that come to mind about this topic?”

- Jessica: Um, I’m kind of going, like, with Mr. H. I don’t think that they should be turned on. I think they should be turned on at four p.m. because, like he

said, the students are probably gonna like try to eat in class. They can become unhealthy with the junk food. **1C**

Um ... then like, it's kind of like the gum. The staff has to clean it up.

It'll be all over the place ... **2C**

and people can be bullied. **1C**

David: That I'm going to need to use the data, claim, warrant, and ... **2P**

Well ... I guess it's a privilege that we should be given to try, **2C**

because ... if we *do* start getting more grades and we ha-, and we *do* stop using more, um ... lunch money from school ... then, um, it would be better for the school ... so they can have reasons instead of just saying,

um, 'I'm so special, that's why' ... **2C**

Identification of Audience – “Who do you think of as your audience for this essay?”

Ann: I think of Mr. H. as my audience because that's who you're writing the letter to ... and that's who you're trying to get to support your reasoning.

1R

David: Well, [Mr. H.] always says, um, that because of your actions you can either earn good rewards or bad rewards. And so... like ... sometimes, like we'll be doing really good and he'll say, 'Today I trust you so much that I'm going to allow you to go out a little early.' Other days, he might say, at lunch, um, he might say, 'I ... Yesterday and the day before weren't so good. I'm not gonna let you go. I'm gonna only give you ten minutes outside today.' **2R**

Audience's Prior Knowledge of Topic – “What do you think they already know about _____?”

Jessica: He's probably gonna know that like, kids are probably gonna like abuse it, and take it too far, like over the top of the level. **1R**

And then that like, some of them could probably like, break the machine.

2C

Ann: And about the snack machines, he knows plenty about them because, um... like now, like in the news, you know, schools use snack machines, like ___ High School, like they have them on I believe. And they can't have, um, sodas. They can only have, like, diet sodas, I believe, water and like, orange juice and stuff like that. **3R**

Brian: Well, I don't really know much about *him* 'cause I don't ... I don't, like, get in trouble and... *know* him, know him. I, um, I'm not sure ... I guess, well, I mean, [Mr. H.] probably *would* say no, 'cause then that'd give him *more* referrals to sign, *more* parents to call, it would make his job more hectic. **2R**

Audience's Opposition to Proposal – “Do you think there are some issues (mention those already raised by the participant) that your audience will have trouble agreeing with or accepting?”

Jessica: Um ... like they could eat it in class, or like other places in the school. **1C**
And then like, they'd probably have to change the rules to where, if they let the kids get the snack then they have to let 'em eat it, like, in the hallway or in class, 'cause then they can be like, 'well, then they should turn them off' or whatever. **2C**

David: Well, one of the things might be the bullying thing he suggested because ... we just got a talk about gangs, and about poking people and breaking skin ...
so, if people are bullying, they might say, 'Let's start a gang and take people's lunch money, and then we can get stuff.' **2CR**

Goals and How Goals will be Achieved – “What are your goals? What do you think you will have to do in order to achieve your goals?”

Jessica: Um, to let Mr. H. know that what he has right now is a good idea to keep ... just turn the snack machines on at 4 p.m., and then to give him reasons why. **1R**

Brian: Um ... well, ... use that, use SEE with the warrant, ex- .. um, claim, and the, um, data. **1P**
It's, it will help, the data will help me tell person what I *know* about the issue. The warrant will tell me *why* I think this way. And the claim ... the claim's the statement. Yeah, and the claim tells the reader why ... not *why* I think this ... *what* I think. **2P**

Ann: I want to make sure I've my data, which is in here, the claim and warrant. I want to make sure about that. **2P**
Well, I'll have to make sure I have a really good statement, 'cause in order to persuade somebody, you need, really, well, *persuasive* writing. 'Cause if you don't, if you're just, like, 'I think we should do this. And I think we should do this. And this too', all about the snack machines. Then I'll be like, 'Yeah, you kept on topic' but if you don't actually *explain*, 'cause otherwise it'd be like, 'I want this, I want this, I want this. ' It's like you going to the candy store being like, 'Mom, I want that, that, and that.' And she'll be, like, 'Why? You have candy at home.' And you'll be like, 'Cause I'm hungry' or something, something lame. And she'll be like, well, when you get *home* ... **3CR**

David: I'm trying to persuade Mr. H. to say yes to the snack machine money. Or at least try it for like maybe a w-, day or two, and see if it works out. **2PR**
Persuade him using ... data, a claim, and a warrant. **2P**

How Writer will Generate Support – “How will you come up with examples that support your statement?”

Jessica: I'm just ... Think about it kinda like the gum essay, 'cause like, it's pretty much like, the same thing 'cause they're sticky foods And then there's foods that are crumbly that can get all over the place for the staff to clean up ... **2C**

Brian: Use the data in the passage to come up with my examples, and then ... and then explain them. You can kinda use the warrant a couple times. Like you can have like, um ... you can have like, the statement, your claim, you can have your claim then you can have a data, then you can have another, a little warrant to go along with that piece of data, and you can have, like, little warrants and then at the end have the big warrant. **2P** See, you can kinda ... um ... ex- ... have the warrant go from everything, like, 'it would make kids hyper. Why? Because if they eat junk food' ... no, wait ... wait ... 'if, if students eat junk food, then, it ... it is bad for some students to eat junk food.' That would be my data. And then, why? It would make kids hyper, and it would make your job harder to complete. So you can kinda do like little things like that, and then have the big warrant at the end. **3PR**

Analyses

After coding and discussing the protocols in depth with the co-rater, I created a table charting pretest and posttest protocol responses for each participant indicating the type of goal and level, and numbered responses using superscript numerals to indicate the order of the responses, which did not always coincide with the order of the intervention protocol prompts (Appendix I). This movement among protocol questions reflects both the recursiveness of the writing process as well as the comprehensive nature of the instrument. After creating these charts, I read protocol transcripts (now coded) for the first time side-by-side with scored essays produced by participants in this study. This process revealed several interesting patterns and themes in participants' problem-solving processes before and after the intervention. As interesting as some of these patterns may be, due to the small number of participants, no conclusive statements or generalizations

can be made. Nevertheless, the purpose of this study – gaining a depth of understanding of participants’ problem-solving strategies – was achieved.

In carrying out these intervention protocols, my aim was to try to come to a better understanding of the findings of researchers who posited that although they possess knowledge of argument structures (Crammond, 1998; Knudson, 1992; McCann, 1989), secondary students cannot write effective argumentative essays, but may benefit from instruction in argument models, especially if that instruction, as Smagorinsky (1991) claimed, includes instruction in task-specific procedures like the instruction in the Toulmin model participants received. At no point did I prompt students to use terminology associated with the Toulmin model, and used such terminology only after participants used it in formulating or assessing goals. Throughout the duration of the study, participants continued to use SEE as a part of regular whole-class instruction in RLA, social studies, and science classes. I believe that participants’ ongoing use of an established model during the study, coupled with my refraining from using Toulmin model terminology outside of the context of instruction – including language used in carrying out pretest and posttest protocols (which use the language of SEE) – adds credibility to my claims about the effects of instruction in the Toulmin model on participants’ problem-solving strategies.

Results Derived from Surveys, Pre- and Posttest Essays, Intervention Protocols

I will now present information drawn from surveys each participant completed prior to the study that asked them questions about their understandings of persuasion as well as the SEE model, followed by a detailed analysis of each participant’s pre- and posttest essays and intervention protocols. I have chosen to discuss the essays composed

by the two students identified as being of “average ability” – Jessica and Brian – followed by essays written by Ann and David – the two students who were identified as being “high ability. I will refer to Appendix H – Coding Scheme for Intervention Protocols – in discussing the prevalence of goal types (Content, Rhetorical, Procedural) and the number of statements of a given complexity level (Level 1, Level 2, Level 3) identified by me and my co-rater according the coding scheme devised for the study.

Jessica

Jessica was one of the two students who participated in the study who was identified by her teacher as being of “average ability.” In response to the first survey question, which asked her what persuasion meant to her, Jessica simply listed “convince, encourage, promote.” Jessica’s answers to survey questions indicate that her understanding of persuasion is limited to mostly personal contexts. Of the four participants, only Jessica cited reassurance as a possible aim of persuasion. In response to the question, “When trying to convince another, what do you think about as you plan what to say? What do/say to get them to accept your point of view?,” Jessica wrote: “It’s O.K.” “I can help.” “Don’t worry.” When asked about times she has tried to convince others of something, or others tried to convince her, Jessica focused on interpersonal conflicts such as arguments with her sister about who won a game they were playing, or getting her parents to let a friend sleep overnight by promising to get to bed by a certain time. Of the four participants, Jessica had the least to say about adapting what she was saying to win the consent of her audience. Jessica was able to name the three major components of the SEE model (Statement, Examples, Explanation) and said the purpose of using SEE was to write “in an orderly way.” She said one aspect of SEE

that she liked was that “it helps you write more” but she also admitted that doesn’t like “writing a lot.”

In response to the pretest prompt (Appendix B), which asked her to take and support a position as to whether or not students should be allowed to chew gum during lunch, Jessica composed the following response which consists of 10 sentences and is 134 words in length. This essay, and all others I present, is reproduced exactly, including missing words, and errors in spelling, grammar, usage, and mechanics. In a few places where the writer uses a wrong word and this error interferes with the comprehensibility of the essay, I have identified the error with the indicator, “[sic].” Essays reproduced here are free of typographical errors.

Mr. H.,

I thing [sic] this proposal is not a good idea. I don’t like the idea of chewing gum at lunch because the gum could end up on a table. This could also mean that the gum may not come off. Also gum could end up not being thrown away and may be chew in class. The could also be thrown in water fountains, this could lead to an overflow of to the floor.

The gum could be stuck on to other people. The gum could also go onto other peoples belonging, witch might not come off. The gum could also be thrown on floors and students, and teachers could step in it. I don’t think you (Mr. H.) would be happy if you staped in gum.

I don’t thing [sic] this proposal is a good idea.

Both the co-rater and I independently scored this essay as a 3 according to the NAEP rubric which indicates an “uneven response” that succeeds in taking a position but “provides uneven support,” is “repetitive” and somewhat “disjointed,” “exhibits uneven control over sentence boundaries and sentence structure,” and contains “errors in grammar, spelling and punctuation that sometimes interfere with understanding.”

Jessica’s error in writing the word “thing” instead of “think” at the beginning and end of her essays was confusing (although she said “think” both times when reading her essay

back to me during a member check). With few exceptions, content was taken from the prompt. Jessica included some original ideas including the claim that gum “may be chew[ed] in class,” could cause fountains to overflow, and could be put on other people and their belongings. The only reference to the audience, aside from the standard address that opens the letter, is a direct address in the second to last sentence, and even this idea stemmed from her experience with hearing a teacher complain about stepping in gum. Her first and last sentences are nearly identical.

Using the Toulmin/McCann (1989) rubric, the co-rater and I reached consensus that Jessica’s essay should receive 6 out of a possible 24 points. Consistent with the findings of other researchers who have performed large-scale studies of secondary students’ argumentative writing abilities, Jessica’s essay states claims and uses data; however, the claims “are related to the proposition ... but the assertions are not complete” and “much is left to the reader to determine;” the data likewise are “weak, inaccurate, or incomplete.” Jessica also appears to a typical sixth-grade writer in that she includes no opposition or response to opposition, and as mentioned above, does not provide a warrant, which, according to Chambliss and Calfee (1998), plays the all-important role of providing the audience with “the underlying reasoning in the argument” (p. 153). She takes a position, lists reasons why, and then restates her position. This list-like structure indicates a strong reliance on the knowledge telling strategy. Jessica generated content, and finding it relevant to her position on the topic, added it to the emerging text. When she exhausted all relevant content, she concluded her essay by simply restating her position. The influence of the SEE model may also be seen in the structure of the essay – a statement (arrived at before consideration of possible data),

followed by examples. As is often the case when writers attempt to compose arguments using SEE, Jessica is unable to provide any elaboration because the warrant is absent and she has not generated content based on reasoning that considers audience – something that only the knowledge transforming strategy can facilitate.

Jessica's pretest protocol consisted of 30 codeable segments. Of these 30 segments, 14 were Level 1 in terms of complexity, 15 were Level 2, and only 1 was Level 3. The breakdown of segments by goal type was 21 Content, 14 Rhetorical, and 5 Procedural. I also noted structural goals, but determined that they were not relevant to the study. Also, the protocol I used cued for structure too heavily for me to learn anything about participants' strategies related to this goal type. Consequently, I include them in the coded protocol tables (Appendix I) but do not discuss them here. An examination of these tables show the number of goal types relevant to participants' responses to each question posed by the intervention protocol. Goal setting of all types happened at all phases of the writing process, and revealed the recursive nature of the writer's mind at work (Flower & Hayes, 1981).

An examination of Jessica's pretest protocol indicated that, consistent with McCann's (1989) findings, as a sixth-grade writer, she possessed awareness of arguments. Jessica, along with the other four participants, read constructed passages used by McCann, and like the vast majority of sixth-grade participants in McCann's study, all four were able to identify the three of seven passages that qualified as arguments (Appendix A). After an exchange that highlights Jessica's formulaic approach to argumentative writing tasks, which is typical of instruction limited to models and general

procedures, as is the case with SEE, I had the following exchange with her in which

Jessica's awareness of the dialogic nature of argument is evident:

- W: ... what, what do you think you want to do first with this?
 J: Um ... Just say that, like, just at first say that like, I'm going against it, saying that we need, that we should not be allowed to chew gum.
 W: O.K.
 J: And um, then say ... that ... and then give like, one or two examples, and then, like, hit another topic and then give examples.
 W: O.K. ... if, if we think about this in terms of SEE ... 'cause I know you're familiar with SEE, and I remember you gave me the other day your survey about that ... how would you come up with your statement for, like what would your statement be and how would you come up with it?
 J: Um, my statement would ... probably be, like persuading Mr. H., so then, like, as I'm writing it I'd have to keep thinking about that like, like if he were to be like a stubborn person and he'd, he'd come up with an example, like if I said, um ... like, there was gum under a desk, he would say, "Yeah, but we can get it off", or something like that.
 W: Mm hmm.
 J: Like if he's trying to go back against me ...
 W: Mm hmm.
 J: then I'd have to explain, kind of, more in detail. [2R]

Jessica's response to opposition is limited to simply giving "more detail", and she is not sure how to "explain" in a more convincing manner. Here may be seen her inability to warrant her claims, providing reasons why her data support her claim that "the proposal is not a good idea." Nevertheless, Jessica does understand the importance of altering her strategies based on how her audience, Mr. H., might respond, but this awareness does not translate effectively into her writing. The closest Jessica came to a warrant in her pretest protocol was asserting that her data – negative consequences of allowing students to chew gum at lunch – consisted of "Little itty-bitty stuff that leads to big problems," along with ideas expressed in this segment:

- W: O.K., um, so, can you tell me a little about the examples you wrote about and how they support your statement?

- J: Um ... my examples, um ... well they're just saying like, that it could be stuck to people's belongings, 'cause somebody could just go (*makes throwing gesture*) you know. And think it's a joke. [2C]
 And then they could throw it on the floors and think nobody's gonna see it. [2C]
 And um, people could step on that and I don't think Mr. H. or students would like stepping on gum.
- W: Mm hmm. Yeah.
- J: And um ...and like if it was stuck on other people's like, belongings that it might not come off.
- W: Mm hmm.
- J: And, um ... so like ... if you tell them that they wouldn't be happy if they stepped in it, then they might not throw it on the ground or somewhere because then they could think, like, "If somebody were to throw it and I were to step in it or sit on it or put my hand in it, I wouldn't be too happy." [3CR]

When asked to explain how her examples (data) support her statement (claim), Jessica is able to provide reasoning that is fairly sophisticated and has the potential to be very rhetorically effective. Here, and throughout all the intervention protocols, combinations of Content (C) and Rhetorical (R) goals, and in some instances, Rhetorical and Procedural (P) goals, are indicative of ideas that, if the writer were aware of them and the role they could play in convincing an audience, could be included in their writing by way of justifying their reasoning to their audience, thus warranting their arguments. SEE, however, does not support this movement between the problem spaces of content and rhetoric that Scardamalia, Bereiter, and Steinbach (1984) identified as being essential to knowledge transforming.

Jessica's reliance on writing plans (e.g., SEE) she has been taught and had modeled for her many times may be seen in the formulaic, mechanical, abrupt, and incomplete pretest essay. The pretest protocol revealed that Jessica saw writing as a series of steps, and that if those steps were completed in a prescribed order, then the goal was met. In some academic contexts, where the writing task consists of merely reproducing information, Jessica's essay might even be seen as having adequately met

demands. Furthermore, the knowledge telling mode permits writers to keep cognitive load to a minimum, and to satisfy by simply presenting as much relevant information as they can and then restating their position rather than facing the more daunting tasks of going beyond their perspectives to come up with content that would be more effective in convincing their intended audience (i.e., warrants and opposition). For Jessica, the goal was not persuading Mr. H., even though she articulated this as her goal – “Since I’m writing [the letter] to Mr. H., I would try to accomplish, um, I would try to convince him not to let us chew gum” [1CR]. Rather, her goal was completing the assigned writing task, which for her consisted of stating a position and coming up with examples.

Although, when asked to reflect on her audience, she could come up with some fairly persuasive statements, Jessica did not see including these ideas in her essay as related to her goal of completing the task in accordance with a prescribed and ingrained formula, as may be seen in these two exchanges:

W: O.K. So, ah, what did you say in this little closer here?

J: Um, I just kind of like, ‘cause I was always taught that when you do, like, your closing sentence you kind of want to like repeat ... your first sentence ...

W: Mm hmm.

J: ‘cause that, out of SEE, that’s your statement for the whole thing.

W: O.K. So this is, um ... so how, how did that fulfill a goal that you had?

J: Um, ‘cause that’s ... ‘cause we used SEE so that was a goal, ‘cause that always helps you write better, and um ... this just kind of like, wraps it all up and ties it all together. [2P]

W: O.K. Um, again, thinking back on your goals, what were your goals and how well do you think you accomplished each goal?

J: Um. My goals were to give examples about how to ah, like, persuade Mr. H on ah, not letting us chew gum ...

J; Mm hmm.

J: And um ... I think I accomplished them. Wasn’t that the second one?

W: Uh-huh. Yeah. How did you accomplish them. Yeah.

J: Um, I accomplished them because I did ... like I gave my examples and my explanation ...

W: Uh-huh.

J: for ... from SEE ... [1P]

Thus, prior to receiving any instruction in the Toulmin model, a model that can be used to teach task-specific procedures and can facilitate knowledge transforming, Jessica, although able to formulate rhetorically effective material that took audience into consideration, did not use supporting data effectively, nor did she include any effective opposition, response to opposition, or warrants despite being prompted by the intervention protocol to consider her audience before, during, and after composing. She did not do these things because SEE does not function as an effective heuristic for argumentative writing that provides writers with the support they need to meet audience related task demands.

At a length of 13 sentences and 155 words, Jessica's posttest essay was slightly longer than her pretest essay; however, it consisted of only 23 codeable segments. The number of goals and levels were the same pretest to posttest in some areas: both protocols contained 21 content goals, 5 procedural goals, and 14 Level 1 utterances. Interestingly, all other numbers went down: total segments went from 30 to 23; rhetorical goals dropped from 15 to 6; Level 2 utterances went down from 15 to 9; and Level 3 utterances from 1 to 0. Part of this drop may be due to the fact that Jessica did not pause during composing. I also find in these results the possibility that the Toulmin model provided Jessica with problem solving strategies that facilitated knowledge transforming. Jessica was better able to move between problems of content and problems of rhetoric (Scardamalia, Bereiter, & Steinbach, 1984) and this reduction in cognitive load permitted her to be more efficient. I also see here the value of qualitative inquiry.

Rather than merely quantifying goal types and levels of response, the present study examines the quality of the problem solving behind the writers' various moves.

Jessica's posttest essay, which required her to argue for or against having snack machines on during lunch, reads as follows:

Mr. H.,

I am against the snack machine being on during school hours. Students will most likely abuse the machine. Students could break the machine also. The snacks could be trail makers and mess makers. If the machine is on then teachers will have to change the rules and let the students eat in class. The food could be stuck on floors, desk, and other school property. Others students may bullie others for snack money. the school may be unsafe with bullies. Students may become very unhealthy by eating all of the junk food. The school will lose money by having to fill the snack machine up with more and more snacks. students may become irresponsible with not bringing lunch and just eat snacks for lunch. The school should be a safe, healthy, clean place not an unsafe, bullying, junk food, dirty place. I am not in favor of the snack machine being on in school hours.

Using the NAEP (2007) 8th Grade Persuasive Rubric, the co-rater and I came to a consensus score of 4 ("sufficient response") as this essay "takes a position and supports it with some pertinent reasons and/or examples," although lacking transitions showed some organization, demonstrated simple but grammatically correct sentences and word choice, and existing "errors in grammar, spelling, and punctuation do not interfere with understanding." Although not a focus of the present study, I see Jessica's greatly improved grammar, mechanics, and usage to be a possible indicator of a decrease in cognitive load. More confident in her ability to meet the aims of argumentation – *what* she planned to say – Jessica could devote more attention to all facets of audience, even simply getting spelling, usage, and mechanics right. At a higher level of audience awareness, Jessica's posttest essay shows improvement in two respects: first, she assumed a somewhat more conversational voice with "snacks could be trail makers and mess makers," and second, and more importantly, this time she included a warrant – "The

school should be a safe, healthy, clean place not an unsafe, bullying, junk food, dirty place.” Even though she laughed out loud when she wrote it and said it “sounds funny,” her warrant nevertheless went beyond the text or simple extensions of material in the prompt to present a vision of how a school environment should be that is not only relevant to the claim, but is also rhetorically effective given that her audience for this letter is the principal. Her inclusion of warrants and slightly improved data earned her a score of 12 out of 24 on the Toulmin/McCann rubric. Although Jessica succeeded in warranting her argument, she still included no effective opposition or response to opposition. Jessica did, however, receive a score of 1 for both opposition and response to opposition on the independent essay task (Appendix B) which will be discussed in greater detail below. Also, her writing, although better in terms of spelling, mechanics, and syntax, was still highly formulaic. Her conclusion was, once more, a reiteration of her claim; however, in her posttest protocol, she had these things to say about how warrants figured into her thought process:

- W: ... when you think about this in terms of goals, what are your goals here for writing this essay?
- J: Um, to let Mr. H. know that what he has right now is a good idea to keep ... just turn the snack machines on at 4 p.m., and then to give him reasons why. [1R]
- W: O.K. Good. Um ... what do you think you'll have to do to achieve that goal?
- J: Um, just tell him all the bad things that are gonna happen to the school and, safety and stuff ...health ... [1R]
- W: O.K. Good. Um, what would you like to do first with this?
- J: Um, probably just ... tell him that I'm not in favor, well, wait, how would I say it, since I'm going like, against it? I'm not in favor? [1PR]
- W: Mm hmm. Yeah.
- J: Alright so I'd say that I'm not in favor of the snack machines being on during the school ... er, during ... before school and during lunch periods. And then I'd give him examples why.
- W: O.K. Good. Um. Ah ... how do you plan to organize this ...
- J: Um ...
- W: to, to meet these goals?
- J: Well, like I said before, just put down that I'm against it. Then put the examples

down, and then give my claim and then give my warrant. [2P]

.....

- W: Well, ah, I wanted to ask you one other thing about the warrant. Um ... How did you, in terms of how you set up your essay, or, organized it, where did you fit the warrant in? Like, where did you put it?
- J: Like, last. Like I always pretty much do.
- W: O.K. Why do you ... why do you put it last?
- J: Um, 'cause I feel like what you should do is give your topic and then give your examples ...
- W: Mm hmm.
- J: and then most people, by then'll be saying like, "Why? Why would she do that?" And then you come out with your warrant and then ... it's all done. [2PR]
- W: You kind of nail it down at the end.
- J: Uh-huh.

Jessica, it appears, retained a formulaic perspective on writing tasks as may be seen in her statement, "then you come out with your warrant and then ... it's all done." She doesn't meet a goal as a writer as much as she completes a task that, if carried out step-by-step, will finish itself. Jessica did not say "*I'm* all done," but rather "*it's* all done", indicating emphasis on the task instead of herself as a writer. Also evident in Jessica's protocols for both pre- and posttest essays is a focus on using a heuristic to generate more material – something she shared on the survey before receiving the intervention instruction (i.e., the SEE enables her "to write a lot" and to do so "in an orderly way.") Rather than altering how Jessica approached writing tasks, it appears that she merely took the task-specific procedural knowledge gained through scaffolded instruction in the Toulmin model and incorporated it into an existing, highly formulaic writing plan. She did, however, do more than simply substitute terminology from SEE. The warrant that she included in the place where she formerly would have provided explanation played the crucial role of addressing her audience's question, "Why? Why would she do that?" – an essential aspect of any successful argumentative piece. Thus,

while her plans for argumentative writing were altered only slightly and she did not include opposition or response to opposition, Jessica's use of more original supporting data and inclusion of a warrant appear to indicate that scaffolded instruction in the Toulmin model contributed to her writing a somewhat more effective argumentative essay not only for the posttest, but also for the independent essay which I will discuss in detail below. Her movements between the problem spaces of content and rhetoric that Scardamalia, Bereiter, and Steinbach (1984) cite as essential to knowledge transforming may have been simple and few, but she made them.

Brian

Brian is the other participant in this study designated as being of average ability. In response to the first question on the pre-intervention survey, which asked him what it means to persuade someone, Brian wrote, "it means to get them to side with your opinion." When asked what he must do to successfully persuade another person, Brian replied, "I got to add good reasons why its good and cool and add thing[s] that they like." Responses to both questions indicate to me that Brian has a very strong sense of audience and understands the need to appeal to his audience in order to win consent. Like Jessica, Brian cited exclusively personal contexts for persuasion: "raise allowance, get of[f] punishment, get x box games, get teacher to let me retake a test." Also like Jessica, Brian was able to name the components of SEE, described how it worked in a fairly mechanical way, and showed some resistance to using the heuristic, saying, "I dislike you have to have everything." He did concede that SEE "make[s] sure I take the whole subject" and that it enables him to write "responses [that] are more detailed."

Brian's pretest essay about the proposed change to the gum policy consisted of 12 sentences and was 179 words long. The co-rater and I coded a total of 30 segments. Of these 30 segments, 14 were Level 1 in terms of complexity, 15 were Level 2, and only 1 was Level 3. The breakdown of segments by goal type was 21 Content, 14 Rhetorical, and 5 Procedural (Appendix I). Brian's pretest essay reads:

Mr. H.,

I am a student here at W.M.S I have a undecided opinion about having gum. Some Good things about having gum are. It lets the kids get the gum crave out & this would give the class more time to learn instead of stoping class & giving referll in his or her ajenda. Another good thing is, If it is throun away properly then, the custodians (In the Past) will not have to scrap gum off of Desks, tables, trash cans, and the floor. And even if you like gum you could chew gum at this time. And I heard Peppermint gum makes your brain think beder & with students thinking beder they will acheve in school. Now here are some not to good things. Some students may not follow the rule & abuse it, now it doen't mean you will have 15,20 kids not listing you may have none, like you have said West is Best so you should let the best shine & let the students injoy gum at there lunch period. Please give it a chance.

In scoring Brian's essay using the NAEP (2007) 8th Grade Persuasive Rubric, the co-rater and I agreed that although Brian presents many relevant claims and supporting data both from the prompt and from his own experiences, the essay was nevertheless a 1 ("unsatisfactory response"). Lack of control over sentence boundaries and structure along with errors in grammar, spelling, and punctuation, although sometimes impeding understanding, were not the reasons for this score, but rather the fact that Brian "[a]ttempted to take a position ... but the position is very unclear." Although he concluded his essay by asking Mr. H. to "give it a chance," his "undecided opinion" that led him to simply list "good things" and "not so good things" without synthesizing them in any way did not meet the requirements of the prompt and rendered his essay ineffective as an argumentative piece.

The co-rater and I determined that Brian's pretest essay should be given 6 out of a possible 24 points on the Toulmin/McCann (1989) rubric. Brian earned 4 points for claims. He stated "generalizations that are related to the proposition ... but ... not complete," and provided "[e]nough information ... to figure out the writer's intent" yet he "left much to the reader to determine." Due to his use of data that was self-contradictory, Brian was given 2 points for having data that was "weak, inaccurate, or incomplete." Like Jessica, Brian did not include any effective opposition or response to opposition, and did not warrant his claims.

Brian's pretest protocol revealed that he, like Jessica and the other two participants, possessed a high level of awareness of how arguments work, even though this awareness was often not apparent in examining his essay. When asked what the prompt was asking him to do, Brian responded, "They are asking us to write a letter to Mr. H. to state whether if they want gum or do not want gum ... during their lunch time"; and when asked who the audience was for the essay, he replied, "Mr. H. ... 'cause you're writing the letter specifically to him to give him reasons why if or not you want to have gum." These responses seem to suggest that Brian understood that the prompt asked him to argue one side or the other. After making a few initial statements that suggested he would be in favor of the proposal, the following exchange took place:

- W: ...OK. Uh...Now, it sounds to me like, like you're thinking you might write in favor of having gum...during lunch.
- B: Yeah, but I mean...I'm kinda in between 'cause I mean, there's some other things that can happen when you have gum I mean tha... it canlead to a lot of like um, people like stealing people's gum [3C]
and like not getting thrown away correctly, [1C]
and stuff like that so ...even though if it doe-, if it is just at lunchtime then, even if the like sixth and eighth graders...do it correctly, it doesn't mean like the seventh grade would, and stuff like that. [3C]

Both the co-rater and I noticed depth of thought throughout Brian's protocol. His speculations about difficulties that could arise if the proposal was adopted, in addition to providing some fairly sophisticated potential content, also demonstrated consideration of context as he knows that school policies have to be consistent – an idea that could have been developed into an effective warrant.

In places, Brian's essay exhibited a conversational tone appropriate to argument (e.g., “now it [doesn't] mean you will have 15,20 kids not listening [listening] you may have none, like you have said West is Best so you should let the best shine”). In his protocol, Brian demonstrated a high level of audience awareness. Drawing on his prior knowledge of types of letters and determining that the prompt called for a “business letter since you're talking to a head boss of a school ... [i]nstead of just like talking to a fifth-grader” – the audience for the expository task participants completed to acclimate them to the protocol format – Brian said that audience, in this case the school's principal, would determine:

B: Like how you say stuff. You gotta like say more, like um, older stuff like um, like more bigger words instead of just like, telling like a fifth-grader like, he might not, like a fifth-grader might not even know what “comprehend” means and stuff like that like...

W: Mm hmm.

B: ...you gotta use bigger words to sound like you're-- what you're talking about to, um, make him actually kind of think 'cause he'd probably think like he's, they're older and they might be a little bit more responsible and stuff like that. [2R]

When confronted with a writing task, however, Brian resorted to the kind of restrictive, formulaic plans that Jessica employed. When asked how he plans, Brian stated, “we've been, I've been taught to like, plan like, you gotta take it like in steps and write it down ...”. In explaining how he uses SEE, Brian's first considered form, then described how he formulates his statement:

- B: I guess it's kinda like a formal letter. 'Cause, you'd say like, "Dear Mr. H. That, this is a student here. My name is [Brian]. I'm a student here at West Middle School. I, um, I think ... I'm ... I'm in the middle of "we should have gum," or ... something like that. [2PR]
- ...
- And then like, start giving, like, an example like, it could be good because kids... kids wouldn't have the need to chew gum during class, ... and then the explanation [2P]
- I'd be like, um ...kids... it would leave you more time to teach the class instead of yelling and, um, giving referrals...
- W: Mm hmm.
- B: ...to the person.
- W: Mm hmm..... OK. Um... So h-- how'll you come up with your statement, though?
- B: Um, like, saying... well, you gotta like um, it's a kinda like a topic sentence.
- W: Mm hmm.
- B: Like you gotta kinda, like, say... you gotta get them ... you gotta get the, um, start of the letter, like, um... like you gotta, um, get his interest to read 'cause I mean, if you just, like, write whatever's th – ever, EVER, he's not gonna have any interest reading the rest of the letter.
- W: Mm hmm.
- B: So you gotta kinda make it a good statement so that he listens to the letter and maybe actually thinks about. [2PR]

Once again, Brian demonstrated fairly sophisticated ideas that could serve as warrants (e.g., "it would leave you more time to teach the class instead of yelling and ... giving referrals"). Not having knowledge of a task-specific procedural writing plan that allows reasoning to be derived from examples, as the Toulmin model does, Brian believed that somehow the statement (claim) must be made compelling enough to get the reader to think about the proposal.

Jessica, likewise, had struggled to include warrant material, and instead relied on the ill-defined idea of "detail" to carry the force of her arguments, describing how she would handle resistance she encountered from her audience, Mr. H., saying, "Like if he's trying to go back against me, then I'd have to explain, kind of, more in detail" [2R].

Brian, too, cited adding detail – something from elementary school that he is aware is not

quite sufficient for the task – as a means of writing a more convincing argument if he used this strategy with SEE. He explains how citing detail works in the context of using SEE in the following exchange that took place immediately after he finished writing his plan:

- W: OK.... So, how did you... Wh—what have you done here with your... plan?
 B: Um... well, I think I pretty much had the outline of the plan.
 W: I see that you, that you say, “Use SEE”. [2P]
 B: Yeah ...
 W: O.K.
 B: because ... it ... it’s probably a little bit more formal instead of just, like, doing the, like, elementary thing, like, topic, um ... detail, detail, detail, concluding. That’s more like a friendly letter.
 W: O.K
 B: And then the signature. But this ... SEE is more, um, in detail.
 W: Mm hmm.
 B: Like instead of just saying examples like, what they call detail in elementary school, like instead of just saying ... I don’t know, “Tom went to the store and got groceries.” And then, and then, then it would go into, then it ... the explanation is more in detail and it gives *more* detail and it gives, um, *more* of a ... the audience can actually see it better.
 W: Hmm. ... Oh, O.K. When ...now, what is it that you think the audience can see better exactly?
 B: Like, the problem and how it can be fixed or how ... how, how it *can* happen and be improved and ... stuff like that
 W: O.K. And you think SEE can help you write *that* kind of ...
 B: Better ... better letters.
 W: Better. O.K., good.
 B: Better ... better *responses* ...
 W: O.K.
 B: to like, um, what’s it called? Prompt?
 W: Mm hmm. The prompt. [2PR]

Also, like Jessica, Brian conceived of writing as a matter of using a formula to complete a task, actually citing “Use SEE” as a goal. “Explanation” in the SEE model would roughly correspond to warrants in the Toulmin model; however, “explanation” appeared to have been communicated in prior instruction as being a matter of giving the audience more examples (data) rather than explaining how the examples support the

statement (claim), which is what warrants do. The “better responses” Brian described appear to result from simply providing the audience with more description (making the audience “see it better”). Effective *argumentation* requires the writer to make the reasoning he or she is using explicit which is something no amount of detail or additional data can accomplish. Another idea from his protocol that could have been developed into an effective warrant is his assertion that “Peppermint gum makes your brain think [better] & with students thinking [better] they will [achieve] in school,” mentioning specifically in his protocol, but not in the essay, better scores on standardized tests that call for students to write “brief constructed responses” or BCRs (perhaps the source of Brian’s choice of words when he said that SEE helps him write “better *responses*”).

Brian’s posttest essay, which consisted of 13 sentences and 193 words, was slightly longer than his pretest essay, and his protocol included 32 codeable segments, up from 25 codeable segments for his pretest protocol. Brian generated considerably more content during his posttest protocol, nearly doubling his content related goal statements from 16 to 30. He also increased rhetorical related goal statements from 11 to 13, and Level 2 utterances from 13 to 23. His Level 3 utterances went down slightly from 6 to 4, and his procedural goal related statements dropped from 8 to 4 (Appendix I). Although Brian’s posttest protocol numbers look quite different than Jessica’s, I again see the effects of instruction in the Toulmin model reducing cognitive load and facilitating knowledge transforming. Brian, like Jessica, showed much greater confidence in planning for the posttest essay. Whereas Jessica became more efficient, Brian used warrants to generate more content throughout the process of composing his posttest essay. I will describe Brian’s use of the Toulmin model in greater detail below.

Brian's posttest essay, wherein he was required to take a position on whether or not to have the school's snack machines turned on during the school day, reads:

I agree with Mr. H., School snack machines should not be on, during school hours. If some students eat sweets & or junk food, It will make them hiper because maybe that student might talk a lot if they eat a candy bar. With students hiper kids will be sent down to the office, so this will make more referls & papers to sign & it will make your job harder. Yes if students forget there lunch they should eat but it is the parents job to make sure the kids Breekfast & pack them a lunch. Students over a period of time will get fat from eating chips candy & soda, this will make the students not pertiserpate much in gym, this will lower students grade. Also this will make students unhelthy. So back to the statement. The school snack machines should not be on during school Because. As I have said it will lower students grades, make your job hard & students will fail class's do to being hiper. I disagree with this. If snack machines are on & students are fat parent will want to know what the school is feeding there kids.

In analyzing the essay in terms of the NAEP (2007) 8th Grade Persuasive Rubric, the co-rater and I determined that it should receive a score of 4 ("sufficient response").

Although the essay contained many errors in grammar, spelling, and punctuation, none of these errors interfered with understanding. The essay lacked transitions, employed simple sentence structures, and often did not observe conventional sentence boundaries; however, unlike his pretest essay, in this posttest essay, Brian took a clear position, "support[ed] it with pertinent reasons and/or examples," and showed "some development."

When assessing the essay using the Toulmin/McCann (1989) rubric, the co-rater and I reached consensus in giving the essay 15 out of 24 points – 4 for claims, 4 for data, 4 for warrants, 1 for opposition, and 2 for response to opposition. The quality of Brian's claims, which were always "related to the proposition" but not "clear and complete," remained constant across all three argumentative tasks he completed in conjunction with this study. Having taken clear positions, both in the independent essay and the posttest,

Brian increased the relevance of his data on these tasks. His statement, “Yes if students forget there lunch they should eat,” when viewed with the criteria for opposition in mind, “vaguely implies the existence of some opposition,” and in several places in the essay, although “[m]uch was left to the reader to link the counterargument to the specific opposition,” Brian did “offer responses which address ... opposing arguments.” Perhaps most importantly, Brian did make use of warrants both in his independent essay and his posttest essay. The co-rater and I determined that in his posttest essay, Brian argued effectively that it is counter to Mr. H’s self-interest to have the snack machines on as it would, in various ways, “make [his] job harder,” and that students performing poorly would run counter to his aims as an educator – reasoning that not only supported the claim, but also showed a high degree of audience awareness.

An examination of his posttest protocol shows that Brian generated warrant material efficiently in the planning stage, and used warrants to generate content, most notably in the form of convincing supporting data:

- W: ... O.K. Um ... who do you think of your, as your audience for this essay?
 B: Um. Mr. H. Again.] 1R
 W: O.K. And what are some things that you know about Mr. H. that you might think about while you’re ...
 B: Well, he ...
 W: preparing this?
 B: hmm ... Well, I don’t really know much about *him* ‘cause I don’t ... I don’t, like, get in trouble and... *know* him, know him. I, um, I’m not sure ... I guess, well, I mean, he probably *would* say no, ‘cause then that’d give him *more* referrals to sign, *more* parents to call, it would make his job more hectic. [2R]
 (Brian writes “make job more hectic!” on plan)

The posttest protocol revealed that Brian is much more in command of material when compared to his pretest protocol, not only committing to a position and generating

support, but even contemplating how opposing arguments cited in the prompt might be altered to support his claim:

B: Well, I'm sure a lot of kids *would* like that, I mean, *I* would but ... I mean to eat junk food all day ... 'cause I'm sure kids would take money like, and their parents not know, buy a soda and snack in the morning, then at lunch time ... [2C]

W: Mm hmm.

B: but, I'm gonna ... I'm, I'm disagreeing with this, but I'm gonna use the, um, kids that forgot a lunch or something. I'm gonna use that against it, with it? Because, I can like turn around and say 'Kids should be' ... 'Kids ... If, if kids forget their lunch, they well, they should have something to eat, but' ... do you, do you think this sounds? ... 'but the parents should make sure that their children get a nutritious breakfast, and make sure that they get a lunch.' [2CR]

Although Brian's warrant was more sophisticated than Jessica's in terms of its high level of audience awareness, and much of his content went beyond the prompt (Level 1) or simple extensions of material from the prompt (Level 2), like Jessica, Brian remained very formulaic in his understanding of argumentative writing tasks. In the following exchange, however, Brian's mastery of how the Toulmin model works, which he presents in language wholly his own, was apparent:

W: O.K. Um ... Well, thinking back to the prompt again, ah, what are your, what are your goals? What are you trying to accomplish by writing this essay?

B: Um ... hmm. I'm trying to either convince Mr. H. if I agree with him or disagree with him, and then give reasons why I think so or not ... [1P]

W: O.K. Um ... ah, what do you think you'll have to do to achieve your goals?

B: Um ... well, ... use that, use SEE with the warrant, ex- .. um, claim, and the, um, data. [1P]

W: Oh, O.K. How, how is that going to help you do you think in achieving the goals?

B: It's, it will help, the data will help me tell person what *I know* about the issue. The warrant will tell me *why* I think this way. And the claim ... oh, come on ... the claim's the statement. Yeah, and the claim tells the reader why ... not *why* I think this ... *what* I think. [2CR]

Both Jessica and Brian made progress in their consideration of the facets of audience awareness that make argumentative writing so challenging. Neither Brian nor

Jessica quite succeeded in internalizing the process for achieving rhetorical goals. Unlike Jessica, however, Brian appeared to be very close to having internalized the Toulmin model, even if he used it in a fairly mechanical way. While Jessica found a slot for the warrant near the end of her essay, Brian understood that warrants are flexible and can be placed throughout an argument:

W: Um, ah, you already talked about coming up with the statement. Um, how are you going to come up with examples, and explain how your examples support your statement?

B: Isn't that pretty much the warrant?

W: What ... Whi, which one?

B: The, the one that ... the question that you just read.

W: Oh, O.K. So, how, ah, how would you come up with ex... Maybe I should have asked them separately. How would you come up with examples?

B: From the ... um, the ... um, oh gol, what's it called? *Passage*.

W: Mm hmm.

B: Use the data in the passage to come up with my examples, and then ...

W: O.K.

B: and then explain them. You can kinda use the warrant a couple times.

W: Oh, how, how so?

B: Like you can have like, um ... you can have like, the statement, your claim, you can have your claim then you can have a data, then you can have another, a little warrant to go along with that piece of data, and you can have, like, little warrants and then at the end have the big warrant. [2P]

...

See, you can kinda ... um ... ex- ... have the warrant go from everything, like, 'it would make kids hyper. Why? Because if they eat junk food' ... no, wait ... wait ... 'if, if students eat junk food, then, it ... it is bad for some students to eat junk food.' That would be my data. And then, why? It would make kids hyper, and it would make your job harder to complete. So you can kinda do like little things like that, and then have the big warrant at the end. [3PR]

Remarkably, all of the preceding excerpts from Brian's posttest protocol were generated in the planning phase. I believe that Brian is here showing the power of the Toulmin model as a heuristic that writers can use "flexibly" (Yeh, 1998b) in carrying out "conceptual planning" (McCutchen, 2006) to effectively address all facets of an argumentative writing task. Brian is well on his way to moving from knowledge telling

to knowledge transforming. Brian also demonstrated a high degree of self-regulation throughout the composing stage, employing the task-specific procedural knowledge about argumentation that he gained from the scaffolded instruction in the Toulmin model he received, and using the plan he generated throughout to assess his progress toward meeting goals and to generate new goals. Again, most notably perhaps, Brian effectively moved between the problem spaces of content and rhetoric, formulating claims, warranting those claims, and then generating additional content as described by Scardamalia, Bereiter, and Steinbach (1984):

- B: Oh, I've got another thing to add to my plan.
 W: Oh. Go ahead.
 (Brian adds to plan)
 B: I've got, I just added, 'It would make the students fat. And in P.E., they wouldn't be able to participate as much, as much.'] 2³C
 W: Oh, O.K. ... Are you gonna ... do you think that can find its way in there somewhere?
 B: Yeah.
 W: Oh, excellent. O.K. Um, are there any other goals you feel you've met so far?
 B: Um ...
 W: Other than what you've said?
 B: Well ... I've told him like, oh yeah, I've used that little, the little claim. I've used the claim which is, Mr. ... it shouldn't be on during the school hours, and I've used some of my details that I'm using, those little warrants, like for example, I've got, 'if some students eat junk food it will make them hyper be-' and then this is the warrant, this is the warrant part, 'cause maybe the students might talk a lot if they eat a candy bar.' I mean, that stuff affects people differently.
 W: Um ... what are some ex-, have you written about any examples yet?
 B: Yeah. The, ah, like, um, ... like, they would be sent down, and it'd make it ... they'd send, they'd send 'em down to the office 'cause I know it, they wouldn't get in trouble once and stop, because ... so it would make his job a lot more tough to complete.
 W: O.K. And, well, how does that support your statement?
 B: Um, because it's giving him reasons why it will affect not only *him*, but everybody around him. And it would make school, be, um ... it wouldn't be very nice if you had students running around ... um, hyper on candy bars. Yes, but then you have that nice, relaxing, outside thing that they can all let it all out,

though. But, that's only like, fifteen minutes. Huh. Not enough time, probably.
[3CR]

W: O.K. Um, well, what do, what do you think you're gonna write about next?

B: I think I'm gonna put that part in about the gym. And then, Oh, wait a minute! I used the positive thing to help my argument. I've got like, it, it should be the parents' part to make the, um, kids' lunch. [2PR]

W: Mm hmm.

B: I used this too! So, I got ... (Brian checks off items on plan paper as he names them) I've used some strong examples. I've used my claim. I've used my ... I've used *this* thing. I haven't used warrant. I have a good statement. So I've got ... I need to have a strong warrant, and you put the warrant in ...

W: O.K

B: in this part. And then if I can think of anything else that I can add in to make him side with me ... [2PR]

Brian's posttest protocol, and the independent and posttest essays he composed, suggests that the scaffolded instruction in the Toulmin model he received as part of the intervention in this study better enabled him to take a clear stand and work through material with his goals in mind. As did Jessica, Brian still struggled, though not as often as he did while writing his pretest essay, when trying to synthesize content and procedural goals with his rhetorical aims. His use of the Toulmin model, while still somewhat formulaic and mechanical, had a greater impact on how he planned for and executed the independent and posttest argumentative writing tasks. Most importantly, the excerpts above illustrate how scaffolded instruction in the Toulmin model improved the quality of his argumentative writing by facilitating movement between the problem spaces of content and rhetoric (Scardamalia, Bereiter, & Steinbach, 1984) to more effectively meet audience related task demands.

Ann

Ann is one of the two participants in this study who was identified as being a "highly able" writer. Based on her responses to the pre-intervention survey, it was clear to me that Ann, who said she hoped to have a career in politics, went into the study with a

very sophisticated understanding of argumentation. Implying that there were other less accurate meanings of persuasion, Ann said that to her persuasion “really means to get someone to do what you want.” In thinking about what she must do to persuade a person to do something, Ann stated that when planning what to say, “I think about what my cause is and what I can do that the person likes so I have a better chance of persuading them.” Here Ann articulates very clearly the connection between appealing to an audience and success in winning consent. Like Jessica and Brian, Ann cited many examples of how she uses argument in personal contexts (e.g., convincing a friend a certain video game is the best, arguing with her parents for a later bedtime) but unlike them cited broader contexts for arguments (e.g., advertising, debating which political party is better, how the president must explain decisions made to the American people). When asked about a time she was unsuccessful in convincing someone, Ann wrote about a time she got into an argument with a friend over political parties and failed to convince the friend that her political party was better. She said of the experience, “I didn’t have good or enough reasons. I needed more, and I hope in the next ‘debate’ I will have better examples.”

The influence of SEE can be seen in Ann’s emphasis on “examples,” but her advanced understanding of argument is evident in her concern over their quality. In explaining how she uses SEE, Ann said, “You start out by saying what your purpose is. You give an example from the text, and explain your reasoning.” Rather than viewing the statement as merely a position on the topic, Ann sees the statement as connected to the supporting evidence (data) she provides. Ann also had a more positive outlook on using heuristics in writing. When asked how she uses SEE, she replied, “I use it in my

responses, but in creative writing as well! You really always use it, for you usually say something, give an example, and explain it! It's a natural thing." She claims that SEE "gives me a better grip on what I say and how to say it" but also concedes that the heuristic "seems to confine you a bit in your writing, and might get a bit boring through time." Ann concludes her discussion of the SEE model saying, "Overall, however I like it because it gives you a clear idea on what to write."

Ann's pretest protocol, provided as she composed her essay on whether or not gum chewing should be allowed during lunch, consisted of 34 codeable segments. Of these 34 segments, 12 were at Level 1 in terms of complexity, 20 were Level 2, and only 2 were Level 3. The breakdown of segments by goal type was 22 Content, 21 Rhetorical, and 9 Procedural (Appendix I). Ann's essay reads:

Mr. H.,

I'm here to say I am with the student council that you should be able to chew gum during lunch. However, I do understand you must have some concerns that I will explain what we should do about. First of all, kids will feel they have more freedom, and because of that not many kids would complain as much about the rules. Also, many kids will be glad to chew gum to get rid of any bad breath caused from eating. This way, many kids will be happier!

However, if we were allowed to chew gum during lunch some issues would arise. If kids fail to throw their gum away, their might be gum all over the school, which nobody would want to happen. Also, if kids think they should be able to chew gum in class, which distracts people and is against the rules!! Since recess is a part of lunch, some kids might fail to throw their gum away and play during recess, which is a choking hazzard!! However, by making sure kids throw away their gum before going outside, things should be fine. If any of these things happen we should not be able to chew gum anymore during recess, to keep our school beautiful and kids safe! Thank you for taking the time to read my letter, and please consider changing the no gum chewing rule.

Differences between Ann's pretest essay, and essays composed by Jessica and Brian, are immediately apparent. Ann's essay consists of 230 words, yet her mastery of more complex syntax allowed her to work her ideas into only 11 sentences, roughly the same number of sentences used by Jessica and Brian in their pretest essays. More

importantly, it appeared that Ann entered the study with a far more sophisticated understanding of argumentation. After identifying who she is in the rhetorical scheme of things, she immediately addressed the concerns of her audience, Mr. H., and cited both advantages and disadvantages of changing the policy as well as acknowledging that, should the problems arise, the privilege should be taken away in order to “keep our school beautiful and kids safe” – an idea Mr. H. frequently articulates in those words. Using the NAEP (2007) 8th Grade Persuasive Rubric, the co-rater and I achieved consensus in assigning Ann’s pretest essay a score of 5 (“skillful response”). Ann “[t]akes a clear position and supports it with pertinent reasons and/or examples,” wrote an essay that is “well organized” and contains some transitions, is characterized overall by “good word choice,” and is completely free of any distracting errors in spelling, mechanics, or sentence structure.

In scoring Ann’s pretest essay using the Toulmin/McCann (1989) rubric, the co-rater and I gave the essay 16 of a possible 24 points. Ann was given a score of 6, the highest possible score, for claims, which both scorers found to be “related to the proposition and ... clear and complete.” Ann’s data earned a 4 as they were “relevant” but in some instances “not complete enough to allow the reader to determine their significance.” Ann was given the highest score, 3, for both opposition and response to opposition as she “systematically identifies the opposition and opposing arguments”, and “states counterarguments which directly addresses the opposition and which are clear and complete.” As sophisticated as Ann’s essay was in terms of the quality of her claims, data, opposition, and response to opposition, the co-rater and I agreed, however, that

Ann's essay did not include a warrant. Her supporting data, although relevant, logical, and rhetorically savvy, were not connected to her claim using a warrant.

Ann's pretest protocol revealed in great detail that she possessed a very high degree on understanding of how arguments work. When asked what the prompt asks her to do, Ann said:

Um ... it just asks you to decide, first of all, whether or not you think the gum chewing rule ... whether you're against it or you're with it, and then you have to decide like ... first you've said that, and then you have to give reasons to support your thing like, if you don't, if you think Mr. H. made a good decision not letting the students chew gum, you explain why the decision was good. If you didn't like it and thought it was bad, you explain why you thought it was bad. [1CP]

Although this statement of her understanding of the task was not completely accurate – it did not ask the writer to explain any decision Mr. H. may have made – it did reflect her understanding that she must take a position on the rule and support it. Making reference to the prompt, which says that Mr. H. had been at a school with no policy against gum chewing and that gum became a problem there, Ann almost immediately qualifies a position in support of the change based on her strong sense of audience:

... I think I'd be in favor of it ... 'cause I think it would be good, but I'll make the point clear that, if this is in favor of it, I understand completely that if people abuse their rights, we should have them taken away from us 'cause, I wouldn't want our school to get like this school with gum all over the place. If that happens, I would want to stop people being allowed to because ... now, other people think that's unfair, but they just don't mind the fact they have *gum* all over their stuff. [2R]

When asked about her goals and how she planned to achieve them, Ann also indicated that she understood that her intended audience must find her arguments convincing, and that it was her job as a writer to ensure that she succeeded in coming up with best arguments possible if she was to succeed in persuading her audience to accept her position:

Um ... I'm trying to make sure I get my point across loud and clear and that, I have plenty of good reasons. And if I don't, you know, have good enough reasons, I can't just make anything up I want. I really have to *think* ... and I want to make sure I get the right reasons down. [2R]

...

I'll have to think about all the reasons that I'm in favor or not in favor of it, [1CP]

and then just, make sure I really explain them that, alright, so he really understands what *I'm* thinking inside *my* head. [2PR]

Although Ann possessed a very sophisticated understanding of how arguments work, as the excerpts cited thus far suggest, she nevertheless, like Jessica and Brian, conceived of the writing task in a very formulaic way when asked about how she will proceed:

W: ... in writing this essay what would you like to do first?

A: Um ... I'd like to first say where I stand. [1CP]

W: Mm hmm.

A: Like, I mean, obviously if I just explain it somewhere in the middle, just tuck it there, he'll just be like 'what was the point of me reading this? I don't know what this person's thinking!'

W: Right ...

A: So I'll have to make sure first that I get that across and then go into more details. Like using SEE basically.

W: Ah ... O.K ...

A: Statement, example, explanation. That's ... that's basically what you do anyway with writing ... so, I mean, naturally you have to ... if you want to get your point across, especially with persuasion, you have to say first of all what you think, then you know, say "I think this because" and explain it. [2P]

In her pretest protocol, just as Jessica and Brian did in theirs, Ann cited providing "more details" as a means of making her argument more convincing rather than making her reasoning more clear and compelling to her audience (i.e., providing a warrant) – something this protocol indicated that she knew she needed to do in order to be successful in persuading her audience to accept her position. The language of the excerpt above also revealed that Ann's thinking related to procedures stemming from instruction she had received in the SEE model was very formulaic. In planning her essay, Ann did

not see working out the reasoning she used in coming up with examples as part of her planning process saying, “I’m just putting examples down and then, in the actual letter, I’ll explain them” [1P]. The fact Ann, in using SEE, decided to put off articulating the reasoning she saw as being so important to make clear to her audience until *after* she began composing the “actual letter” may, in part, explain how a writer with such a sophisticated understanding of how arguments work did not include a warrant in her pretest essay. The excerpts above clearly illustrate how using the knowledge telling strategy (here in the form of SEE) which entails testing ideas for appropriateness then simply adding them to an emerging text (or plan in this case) actually draws writers away from relevant, sophisticated ideas generated during planning, many of which would meet audience related task demands.

Ann’s posttest essay contained the same number of sentences – 11 – but fewer words – only 193. The co-rater and I coded 31 segments, only 3 of which were Level 1, 17 of which were Level 2, and 10 of which were Level 3. From pre- to posttest, Ann’s Level 2 utterances changed little (from 20 to 17), but her posttest saw a dramatic drop in Level 1 utterances (12 to 3) and an equally dramatic increase in Level 3 utterances (2 to 10). In terms of goal-related statements, 27 of Ann’s posttest statements were related to content, 25 addressed rhetoric, and only 3 dealt with procedures (Appendix I). The drop in procedures-related goals (from 9 to 3) suggests to me that the Toulmin heuristic may have reduced Ann’s cognitive load by providing her with a more efficient heuristic for negotiating between content and rhetoric. The increase in Level 3 utterances indicates movement away from the prompt and into the world of the writer’s own experiences. Ann, like Jessica and Brian, did not include a warrant in her pretest essay, but did in her

posttest essay. Her posttest protocol reveals that she was able to generate a warrant using the Toulmin model, and used this underlying reasoning to generate convincing data.

In response to the prompt, which asked her to take and support a position on the snack machine proposal, Ann wrote:

Mr. H.,

I am with the student concil, and I believe students should be able to purchase items from the snack machine. If a kid forgets their lunch, or has limited money, most of the time they don't want to charge, so don't eat! Surely student preform better at school not being hungry! So, with a few cents a snack is able to be bought so the kid is not hungry! Not as many students will complain about being hungry, and there will be more food choices.

However some kids might use this privledge badly. They might bully for money, or wander off in the halls with or with out a snack! So, kids could sign out to get a snack, and non-bullying actions suggested. If it is stuff in the machine you worry about, take out the non-healthy stuff, or put healthier stuff in so the kids won't always buy candy bars! However, if any bad things happen because of the snack machines being on, you could limit snack time only to lunch, or take the privledge away entirely. I hope you will consider the student concils views, and thank you for reading this proposal.

The co-rater and I achieved consensus in giving Ann's posttest essay a score of 6 ("excellent response") on the NAEP (2007) 8th Grade Persuasive Rubric. As she had done on the pretest, Ann wrote a posttest essay that took a position and supported it, used a variety of sentence structures and effective word choices, and was free of any distracting errors. What made Ann's posttest essay slightly better was the consistent support of her claim along with the use of "persuasive strategy to convey an argument."

In many ways, Ann's posttest and pretest essays are very similar. She immediately addressed opposition and responded to opposition throughout, once again earning a score of 3 for these categories on the Toulmin/McCann (1989) rubric. After identifying her role in the rhetorical situation and stating her position, she once more cited advantages, acknowledged disadvantages, and offered Mr. H. assurances that students would understand if the privilege were taken away, in the process once again

earning a 6 for claims and a 4 for data. Both the co-rater and I noticed a significant difference, however. In her pretest essay, Ann argued that allowing students to chew gum during lunch would make students “happier” because they have “more freedom” and “would not complain about the rules as much.” These arguments are convincing, and show a high degree of audience awareness, but were judged by the co-rater and me to be no more than claims supporting her position. In her posttest essay, Ann’s statement that “students [perform] better at school not being hungry! So, with a few cents a snack is able to be bought so the kid is not hungry!”, although once again followed by the advantage of kids not complaining, went beyond the domain of claims and instead was viewed by the co-rater and I as constituting a warrant. More than simply citing an advantage for Mr. H. (and teachers), this statement connected data to the claim by pointing out that schools, as places of learning, must ensure students can perform at their best, and that acceptance of the proposition would lead to that. Consequently, Ann’s essay received a score of 4 for warrants on the Toulmin/McCann rubric because she “explains the data in some way,” and earned a total of 20 out of 24 possible points.

In analyzing Ann’s posttest protocol, it was apparent from the outset that Ann, in deciding to modify the proposal, took greater control of the material from the prompt. When asked what the prompt asked her to do, she immediately began to formulate her claim, responding:

Um, well, it’s asking me to decide, first of all, if I think that students should be able to purchase food from the snack machine during the day. And then, from that, just ... basically sup-, give reasons to support or, basically to support your reasoning. [ICP]
... and, ah, whether or not you chose a position would depend on what you say. Alright. First thing, ‘I think it’s O.K if its turned on during the day. It’s not during breakfast. But you understand having to supervise the cafeteria. Maybe not during breakfast, but maybe during lunch.’] 2CR

Keenly aware of her audience, Ann, in the excerpt above, included Mr. H's objection from the prompt about having to have teachers supervise the cafeteria in the morning.

When asked about audience, Ann's response indicated a shift from simply naming "Mr. H.," as she did in her pretest, to commenting in the posttest protocol that Mr. H. is "who you're trying to get to support your reasoning." Ann also cited the need to "support your reasoning" in the excerpt above. This emphasis on reasoning reflected a shift in Ann's thoughts from *what* she was going to say (e.g., getting "the right reasons down" and then "think[ing] about all the reasons that I'm in favor or not in favor of it and then ... explain them ... so he really understands what *I'm* thinking inside *my* head") to *how* she would present her ideas in such a way as to get her audience to "support [her] reasoning."

Rather than relying on "detail" to make her arguments more convincing (as did Jessica and Brian), Ann developed a more sophisticated understanding of relationships between examples (data) and explanation (warrants) in the following, metaphoric response to the question, "what do you think you'd like to do first?", which was posed during the planning phase:

A: Well, I'd like to create a good statement. And then plan, of course, what I'm going to say. The ... good statement and good reasons to support it, 'cause that's, I believe, a really important ... you need plenty of examples. I think examples and a good statement are kind of like the *bone* of the writing and, like, the meat is like all the examples, 'cause ...

W: O.K.

A: that just helps makes it more ... reasonable. Examples and explanation. They're ... well, more the explanation, 'cause that's what gives it ... 'cause I mean, you could just have the bone, which is important obviously -- the statement and good examples -- but if you don't have that meat on there it's like, why bother? [3R]

In her own way (and a very sophisticated way at that) Ann asserts the primary importance of warrants. A writer might provide the necessary framework – a statement of position

and supporting examples – but without the explanation, which correlates with the warrant in the Toulmin model, an argument will fail to convince, and thus the writer will fall short of the goal.

Prior to reading and coding the protocols, and a period of several weeks after the study concluded, the co-rater and I first met and scored the essays. The conclusion that Ann's posttest essay made use of a warrant – something I could not recall and did not consult the protocol transcript which had been typed over a month prior to confirm – was supported by the following segment wherein Ann responded to the question, "How did you go about planning this?":

Well, I started with saying that I needed a strong statement to tell where I was coming from.

I made a list of pros and cons as my data. And then made a claim that 'students should have the option of getting stuff from the snack machine.' [2CP]

And then my warrant was, 'students work hard and if they forget their lunch they have, and have a bit of money, they can still eat.' [3CP]

Ann did not include the idea that students deserve to have the option of buying food from the snack machine because they "work hard;" nevertheless, she succeeded in providing reasoning that referenced some principle originating outside of the prompt, and knowledge she had about her audience – that schools are supposed to ensure that students perform optimally and are obligated to consider any proposed change that could contribute to this end.

Ann, although a more accomplished writer than Jessica or Brian, was also formulaic in the thinking and writing she did related to the argumentative tasks in this study. Her existing plans for argumentative writing led her to address the concerns of her audience, resulting in her receiving the highest scores possible on the Toulmin/McCann rubric for opposition and response to opposition for both her pretest and her posttest

essays. Her existing plans also led her to formulate relevant claims, and to support those claims fairly well. Scaffolded instruction in the Toulmin model did not contribute to Ann's high level of understanding of how arguments work, although it may have further reinforced it. As did Jessica and Brian, Ann failed to provide a warrant in her pretest essay, but did include a warrant in her independent and posttest essays. Ann's increased emphasis on the importance of not merely clearly stating her reasoning, but also working to get her audience to support the reasoning she presented, appears to be a benefit of the intervention, suggesting that scaffolded instruction in the Toulmin model may benefit even highly able writers.

David

David, the other high ability participant, also began the study with a strong understanding of argumentation. When asked what it means to persuade someone, he wrote simply, "persuade someone to do something," but went immediately beyond personal contexts, citing "stupid" but effective television advertisements such as ads for Geico. David made the observation that effective arguments are parsimonious – "quick and to the point." Of the four participants, only David had a somewhat cynical take on argument, stating that effective persuasion results if "you don't include any bad parts." He also suggested that anyone who wants to succeed in persuasion should "use a bribe or bluff to make it look better" and "use a slick tone either in writing or verbal." David cited a time when he was unsuccessful in getting his brother to lend him money. He failed in spite of begging, offering the use of a videogame, and bribing him with chocolate. At the end of his account, he observed, "Hey, he's my brother. He wouldn't lend me money if his life depended on it." As was the case with Ann, David indicated

that he regularly argues about matters beyond the realm of personal experience, citing “news,” “the holocaust,” “Rome,” and “Math.” In response to a question asking him about the significance of argument in his life outside of school, David wrote: “My shot at doing something, being a famous dark poet. Using writing against somebody. Reliving some events in my writings.” More than any of the other four participants, David seems to perceive what Fulkerson (1996) described as “the pervasiveness of argument” – that argument can be at the heart of everything from poetry to verbal combat to making meaning of past experience.

As did all three other participants, David could name and describe the three components of SEE, and expressed a largely mechanical understanding of how it works:

For S you find a maine statement that says everything your going to say in the next few lines. For the first E is where you find an example about your statement. And the last for the second E is where you explain your statement and your example.

In this explanation of SEE, it is apparent to me that although David has a rather advanced understanding of what argument is and how it works, SEE has not been sufficient in supporting movement between content and rhetoric. The “second E” – explanation – is, according to David, “where you explain your statement and your example.” The explanation component of SEE is akin to the warrant in the Toulmin model. Writers are supposed to explain *how* the examples offered support the statement. As his pretest protocol revealed, David had not yet made this connection. David expressed that he was resistant to using SEE saying he uses it only if “told to do so.” The value of SEE for David lies only in its role as “a guideline to me so I don’t start writing non-sense.” Beyond keeping him on topic, David had nothing but negative things to say about SEE, complaining, “Sometimes [it’s] too formal. Too pushy. I get a great idea then it’s

crushed by S.E.E.” That David could have a “great idea” that is “crushed” by a heuristic suggests to me that the heuristic does not have the capacity to meet David’s needs as a writer. Here, David gives voice to the negative effects of the “simplistic pedagogy” that drives prevailing practice in writing instruction that Pritchard and Honeycutt (2006) described as “linear and prescriptive,” (p. 276), and that was denounced by Schultz (2006) as “formulaic” and concerned with “the teaching of writing merely as a skill” (p. 359).

David’s pretest essay about the proposed change to the gum policy was comprised of 27 sentences, was 376 words in length, and contained 34 codeable segments. Complexity levels of coded utterances revealed David’s advanced understandings of argument – 7 utterances were at Level 1 in terms of complexity, 17 were Level 2, and 10 were Level 3. The breakdown of segments by goal type was 27 Content, 14 Rhetorical, and 5 Procedural (Appendix I).

David’s pretest essay appears below:

Mr. H.,

Should we have gum during lunch period? Should we be able to chew it during that time period? Is there good and bad possibilities? We, our student council think we should be able to chew gum after we our lunch, in the lunch period. We have a few positive things, but it has a couple of bad side effects.

There 5 examples for both good and bad outcomes of gum chewing during lunch period. First, some people’s breath can just stink at times, but some gum flavor can cover up the “stink” and people won’t make fun of your breath. Also, if we can prove to you that we can chew gum without putting it in places we shouldn’t. We can become more independent and won’t get yelled at as much. Plus, if we become more happy and think your (some people’s opinions) nice we’ll listen more because people think you’re cool. If we can chew gum in lunch period then we won’t have to chew gum in our classes. Last, the cafeteria can sell gum to make a huge profit because people love gum.

Like I said before there are a couple of bad side effects. Five to be exact, but they are things we (the council) can control. First, if people start putting it in wrong places at lunch one, if we find the person they can’t buy gum at school. Two, if they are caught after that, chewing gum they will get an automatic office referral. If we stop that problem then custodians won’t waste time cleaning gum, but have time to do other things. Now

sometimes people stick gum on other people. If you are caught doing it you will get in-school suspension. Now if you sell gum in the cafeteria you won't have to worry about kids slipping drugs in gum packages and bringing them to school. Last, people could start bringing in other candies, if you caught the candies will be thrown away. Candies like tic-tacs, mints, and other things.

Now some people might say this is unfair. Well, you don't have to buy gum and abuse it. You don't have to bring in other candies and lose them. We are just giving advantages to people who want it.

The co-rater and I reached consensus in giving this essay a score of 6 ("excellent response") based on the NAEP (2007) 8th Grade Persuasive Rubric criteria. In this essay, David "[t]akes a clear position and supports in consistently with well-chosen reasons." Overall the essay was "focused and well-organized," contained a variety of sentence structures and was characterized by "precision in word choice." Although the essay did contain misspellings and some errors in grammar and mechanics, these errors "[did] not interfere with understanding." More importantly, it is apparent that David has a high level of understanding of how arguments work, and makes use of several techniques that demonstrate this (e.g., opening with questions, citing and responding to opposing viewpoints, appealing to the audience – e.g., "people think [you're] cool").

As did Ann, David received scores of 3 for opposition and response to opposition according to the Toulmin/McCann (1989) rubric. This skill in opposition and response to opposition from the outset was a major difference between the average- and high-ability writers who took part in the study. Also, like Ann, David earned 6 points for his claims, which were "related to the proposition and ... clear and complete," and 4 points for his data which were "relevant but not complete" in some instances, requiring the reader to make some inferences. As was the case for the other three writers, David, too, did not include a warrant in his pretest, earning an overall score of 16 of 24 possible points.

David's pretest protocol reveals that he, as did the other three participants, entered the study with a solid understanding of how arguments work. When asked about things that "come to mind" about the topic, David, without having been prompted to do so, immediately speculated about what Mr. H's perspectives on the proposal might be, saying:

D: Well ... knowing Mr. H., he'd probably give us like maybe one chance during lunch. He always says that, um, you can earn good things or bad things. If you do something bad, then you earn something bad. [2R]

W: Mm hmmm.

D: So, um, I think I'd probably write to ask him for one chance, and then if we mess up, just ban the whole rule for like ... just not have the rule of gum chewing. [2CR]

With a clear understanding of the task, and knowledge of his audience, when asked,

"What do you think you'll have to do to achieve your goals," David cited the importance of parsimony, saying;

D: Um ... be very persuasive ... not like, drag it out , like just keep saying, "and iiff yoooouu" ... like pulling it out more than it needs to be ... like that ...

...

Because if you like keep like, talking and talking and then you restate your reasons, you're getting nowhere. And it just gets annoying after a while, I guess.

In this excerpt, I see that David is already aware that repetition of reasons, perhaps what other writers in the study described as "going into more detail," does not make an argument more convincing, but rather may be counter-productive. Effective arguments require what Ann called "the meat" – the warrant.

One area where David struggled was making a decision about what position to take based upon the ideas he came up with while planning. In the following segment, David described the role his emerging ideas played in the process of deciding his

position, likening ideas to objects placed on a scale (perhaps stemming from a graphic organizer or some other bit of prior instruction in persuasion):

- D: I might have, like, maybe, one side that says “good ideas”, “bad ideas” to see, like ...
 one of those little weighing things to see which is better, good or bad ...
- W: O.K. So, so what will the good ideas and bad ideas represent?
- D: Um ... I guess, like, these little weight things ... like, then I’ll have ... I’ll like sort of pretend there’s a scale, and if I have two over here for good, then I guess good’ll win, and I use those ideas to help ... but if I have more bad then I’ll use the bad ideas, to *not* have gum chewing. [2PR]

Upon discovering that his initial effort had produced five “good” and five “bad” reasons, David said, “I guess I’m kind of stuck ... I have five on each side and I can’t think of another idea,” at which point he asked if he could “take both sides and write the positive and the negative.” Rather than answer that question, I guided him to revisit the prompt, resulting in his response, “it appears I have to take a position.” David’s decision as to what position to take did not stem from the ideas he produced, but rather from his identity as a writer:

- W: O.K. And how do you think ... ‘cause I ... I, I, I see what you’re saying when you talked about your system for trying to determine whether you’d be for or against ... and it seems like you have an equal number ...
- D: Yeah.
- W: of ideas. So how ... how might you ... um ... ‘cause I guess this could have an impact on, on your statement.
- D: Yes, um ... well, my statement is still gonna be the same because ... it’s why or why not do you think we should have gum in school during lunch periods, so ... I’m trying to think ... If I were on the council, um ...
- W: Mm hmm.
- D: I don’t, I think maybe some of my friends might be in there, and I wouldn’t want to let them down by writing the letter saying that we shouldn’t ...
- W: Mm hmm.
- D: But ... if we don’t mention all these bad things, and then bad things happen, Mr. H’s gonna say ... might say, “That wasn’t a very good idea. Why didn’t you say all these things?” [2R]

Taking a position based on not wanting to disappoint fellow students, but also aware the Mr. H., whom he referred to earlier as “the big man,” must be convinced to give the students any chance to try to make the proposed change to the gum policy work, David managed to spin his opposing ideas by listing the advantages, then stating that the disadvantages were “things we (the concil) can control.” When I asked David if the “bad” things could actually be used in some way that could help him persuade Mr. H., he replied:

- D: Yeah, because ... um ... like, salespeople, when they try persuade you, they like ... they don't mention the bad parts. And then you get all mad; then it could go into a law case or something like that.
- W: Mm hmm.
- D: So, if I do mention the bad parts, but I don't make them seem as big as they really could be, then I think that will persuade him more if we told him we wouldn't do these things and make sure that certain people didn't do them. [3R]

Despite David's earlier comment that a writer should not be repetitious when making an argument and thereby “drag it out,” he, just as the other three participants did, cited “detail” as essential to effective explanation. When asked what goals he had met so far in the first section of the essay, an introduction, David and I engaged in the following exchange that revealed how David used the SEE model:

- D: I believe I've stated what we think, and what we want. And have my statement. And now I'm probably going on to an example ... which next comes an explanation and this time instead of doing it as SEE in all one paragraph, I'm gonna spread it out in different paragraphs ... three different paragraphs probably. [1P]
- W: O.K. So, thinking about SEE ... um ... is this your statement? The first paragraph?
- D: Yes.
- W: O.K. And then, so, how would you describe each of these paragraphs in terms of SEE?
- D: Well my first paragraph stating what we think ... um ... asking the opinion, stating that ... we think we should have it, but also stating ... that there could be some bad side effects and good side effects. Um ... my second paragraph would

be examples which I would give examples from both, um ... ah, positive and negative effects ... to ... say, "This is what could happen."

W: Mm hmm.

D: And then my third paragraph I'm ex-, explain each individual situation or example in detail. [2P]

Shortly after this exchange, however, David deserted this plan:

D: I think now I'm sorta changing it. 'Cause ...

W: O.K.

D: it's gonna be a little hard. I'm probably going to do my first paragraph from the five examples then explanations after them ... of how they're good and then the second paragraph, er, third paragraph being bad.

W: O.K.

D: It's just ... it just would be a little harder ...

...

it's going to be hard ... when ... um ... to restate something later and explain it

...

like ...

W: Mmm ... Mm hmm.

D: like, he might be thinking, "What?", and have to re-read everything which I don't want him to have to do. [2PR]

The remainder of David's protocol went smoothly for him. He wrote a paragraph devoted to advantages, one to disadvantages which he claimed could be dealt with through a system of consequences, and then closed by insisting that the proposal is about "just giving advantages to people who want it." David's difficulties in coming up with a claim based on the ideas he generated while planning that considers the quality and not merely the quantity of ideas, along with his struggles to find places to include explanations that are relevant to his claims and considerate of his audience, indicated that even this highly capable writer, who could produce an "excellent response" according to the NAEP criteria even prior to receiving any instruction, is in need of a more efficient plan for writing argumentative pieces. As was the case with Jessica, Brian, and Ann, it appears that David, who likewise did not warrant his arguments, had no existing plan that permitted him to feature the reasoning he used to support his

position. Knowledge telling heuristics like SEE can limit writers by failing to give them a means of assessing the quality of content in light of the audience related task demands associated with argumentative writing. David's decision to cite disadvantages as problems the student council "could control" shows a move toward knowledge transforming, but this move falls short of the rhetorical power of a clearly stated, relevant warrant that facilitates movement between problems of content and problems of rhetoric (Scardamalia, Bereiter, & Steinbach, 1984). When "great ideas" occur to David that are not accommodated by an existing writing plan, I can understand how he views this frustrating experience as having those great ideas "crushed by S.E.E."

David's posttest essay about the snack machine proposal was considerably shorter at 15 sentences and 271 words. The number of codeable statements dropped from 34 for the pretest to 25 for the posttest. This reduction in codeable statements is due at least in part to the fact that David, like Jessica, did not pause during composing. After answering the sequence of pre-composing questions posed by the protocol, he planned and composed his essay from start to finish. David's content-related goal statements numbered 27 on the pretest, but only 20 on the posttest. The number of rhetorical goals remained fairly static, going from 14 on the pretest to 15 on the posttest. Procedural goal statements were the same on the pre- and posttests totaling 5. The level of complexity of codeable utterances did not change much for Level 1 statements (from 7 on the pretest to 5 on the posttest) or Level 2 statements (from 17 on the pretest to 15 on the posttest). Interestingly, the number of Level 3 utterances on the posttest was a mere 5 compared with 10 on the pretest (Appendix I). An examination of the complexity of codeable utterances does not seem to suggest that David's posttest essay was more effective than

his pretest essay, but it was. Again, this points out the fault of much of the existing research that merely quantifies components or characteristics rather than examining their quality and the context in which the writing took place. I had initially thought that movement from knowledge telling to knowledge transforming could be indicated by an increase in the number of more complex utterances (as experiences and contexts beyond the prompt tends to be the realm of warrants) and also an increase in rhetorical goals. I learned from analyzing these protocols that it is the quality, not the quantity of utterances that determine the quality of the writing (Kellogg, 1994).

In response to the posttest prompt, which asked him to take and support a position as to whether or not the snack machines should be turned on during the day, David composed the following essay:

Mr. H.,

The student concil made an agreement and decided on a proposal of moving the snack machine to the cafeteria and turning it on until the school is closed. We have a few good reasons for this. Students think we should move the snack machine and turn it on because sometimes they don't have enough to eat at home. Some say any food is better than not food. Also, some report not having enough money during lunch and having to borrow money or not eat. When students are hungry they can get a stomach ache or a headache. While they feel this pain they can't concentrate, so they either miss class and have to make up work or sit there and feel horrible. You told one student that there are reasons you don't it on. Well if you move it into the cafeteria which is sienlt when no one is in there you can here the machine going and stop the kid. During the morning all you need to do is give out passes and only so many people can go a day. If you put it in the cafeteria then the cleaning problem won't be that bad because people will get yelled at for leaving it out. People will always get bullied and you cant' stop that to some respect. Last, people could bring food from their lunch bags and eat it out of the lunch room, it's not that different. Some people claim that they don't like school food, but don't have time to pack lunch. If you some healthy, but good tasting food it the machine people will have the choice of what they want.

In scoring David's posttest essay using the NAEP (2007) 8th Grade Persuasive Rubric, the co-rater and I achieved consensus, once again giving the essay of score of 6 ("excellent response") for the same reasons cited earlier in the discussion of his pretest

essay. The co-rater and I also reached consensus when applying the criteria of the Toulmin/McCann (1989) rubric to David's posttest essay, assigning the following identical scores: 6 for claims, 6 for data, 4 for warrants, 3 for opposition, and 3 for response to opposition. As did the other three participants, David received a 4 for warrants for his posttest essay, having succeeded in doing some warranting, but not quite achieving the criteria for the highest score of 6 which demands that the writer "explains the data in such a way that it is clear how they support the claim." Like Ann, David cited poor academic performance as a reason to accept the claim, and also asserted that certain conditions (i.e., when students "don't like school food, but don't have time to pack a lunch") demanded that the school provide students with "the choice of what they want" on the condition that the machine contain "some healthy, but good tasting food ...". This idea of providing students with a choice was not simply an appeal to Mr. H. or students in the school; it also served as a warrant attempting to bolster the workability of David's modified version of the proposal he put forth which would allow students to have more access to food, thus enabling them to "concentrate" and not "miss class or have to make up work or sit there and feel horrible."

A close examination of David's posttest protocol revealed that following scaffolded instruction in the Toulmin model, David's approach to using ideas generated about the proposal during the planning phase had a qualitative component rather than consisting of a mere quantifying of ideas as he did in his pretest planning:

- W: O.K. Um, can you tell me a little bit how, how'd you go about planning it?
 D: Um, I did do the data, claim, er, yeah, data, claim, warrant thing ...
 W: O.K.
 D: And I stor-, sort of mix it with, like, one of those scales that, like with the weights
 ...
 W: Right ...

- D: For the data I put a big plus here, and then I listed all the positives ...
 W: O.K.
 D: and then I put the minuses and listed all the minuses ...
 W: O.K.
 D: and it still came out even, but the plusses have more of a reason, and the minuses are just like, little things that like, always happen. [2PR]

In this segment, the value of the Toulmin model as a task-specific procedural model may be seen in that David considered the relative value of the ideas he came up with in determining what to write in the warrant slot of the data-claim-warrant chart he elected to use. His reasons for taking a position were thus not determined solely by knowledge of audience or how he had positioned himself as a writer within the rhetorical context created by the prompt as he did when writing his pretest essay. When asked, “beyond the data ... what do you do from there?”, David responded:

- D: Um, then I went to claim ...
 W: O.K.
 D: and I made a statement that we should move the machines into the cafeteria, and then turn them on ...
 W: Mm hmm
 D: all day or at least until everybody goes ...
 W: Mm hmm
 D: and then, like, that was my statement.
 W: O.K.
 D: And then my warrant is, like, saying, I think we should do this because we should have a choice in what we eat. I mean like, if you pack a lunch, you still get a choice. But say like, your mom has to go to the grocery store that day, then you ... and you like need a pack, you want a pack of cookies or something, something small like that. You can just go to the machine, plug in a couple coins, get your cookies.
 W: Mm hmm.
 D: And like, you can't do that with the, with a whole lunch. If you buy a whole lunch, what's the point of that? 'Cause you may not like the thing they have there. Where if you have a machine, you have a variety. [3CP]

Later in the protocol, David justified his decision to “twist the proposal” by suggesting moving the machine to the cafeteria where access to it could be restricted.

Saying that having the machine in its present location with its current stash of junk food would not cause a problem for kids who are athletic and could eat junk and not suffer ill consequences, David argued that the machine should provide a service to all students by being in the cafeteria and dispensing reasonably healthy food that would meet students' needs as learners:

I can understand for the people who do sports, but the school isn't supposed to be *for* sports, it's supposed to be for *learning*. And since you're demonstrating that you have this time that you have to eat so that you can continue learning, it would be better if, you were to put this thing that everybody likes, or something like that, in the cafeteria instead of just putting it out in the hallway where everybody can reach it ...

By arguing that food should be made available "in a place where food is supposed to be" so that students could get the food they need to stay focused, David warranted his modified claim. His modified proposal and means of supporting it also demonstrated a high level of ability in acknowledging and responding to opposition:

- D: ... if we were to just leave it on in the hallway, then like, there would be *more* bullying and stuff, because you can't have a teacher sitting out there in the hallway, and I'm sure the custodians don't want to do that.
- W: Mm hmm.
- D: But if you move it into the cafeteria, that's *solving* the bully problem, which is one of the examples ...
- W: Uh-huh ... yeah ...
- D: of Mr. H. gave why he *didn't* want it. [2CR]
And I used an example with a solution to throw it back at him. [3CPR]

David's posttest essay and protocol suggest that scaffolded instruction in the Toulmin model enabled him to write better argumentative essays in two respects: first, his claims were based on the qualitative nature of the ideas he generated during the planning phase, and this in turn determined the position he took; and second, thinking about the qualitative nature of the data led him to the realm of reasoning, and thus to the realm of warrants. Again, all four writers managed to include a warrant in their posttest

essays that were not always clearly connected to the claim. David's, however, may be seen as slightly more sophisticated. As was true with Ann, these improvements in David's thinking and writing suggested that even high ability writers can benefit from scaffolded instruction in the Toulmin model. The intervention instruction provided participants with the kind of task-specific procedural knowledge called for by Smagorinsky (1991) that enable young writers to engage in knowledge transforming, facilitating the movements writers must make between problems of content and problems of rhetoric (Scardamalia, Bereiter, & Steinbach, 1984) in meeting the audience-related task demands of argumentative writing.

Results Derived from Independent Essays

I designed the present study with the aim of learning if, and to what extent, scaffolded instruction in the Toulmin (1958/2003) model of argument enabled four sixth-grade writers to problem solve the audience related tasks researchers had identified as being the most problematic for them – warrants, effective supporting data, and opposition and response to opposition (Burkhalter, 1995; Crammond, 1998; Knudson, 1992; McCann, 1989). The intervention protocols used to collect data from participants as they completed the pre- and posttest essays discussed above also served as a “scaffold” (Bruner, 1975). Posttest results reflect what Vygotsky (1934/1986) called “proximal” performance – a term used to describe a learner's performance with some assistance from a more knowledgeable, capable other. Graham (2006) described proximal performance as “the most critical region of instructional sensitivity at which knowledge advancement can take place” (p. 214). More so than “actual performance” – what a learner can do without assistance – proximal performance indicates what a learner is capable of in

solving certain tasks. Rarely, however, do student writers have the level of support provided by the intervention protocol used in the present study. In addition to proximal performance, I also wanted to learn what participants could do without the support of a scaffold. For this reason, I had them write an “independent essay” identical to the pre- and posttest essays in terms of task demands to see if, and to what extent, the quality of their argumentative writing improved following the intervention instruction. Their identity as writers (school council members), format (letter), and topic (proposed change to a school policy) remained unchanged. Rather than writing to Mr. H., their principal, they instead wrote to the School Board President arguing for or against instituting school uniforms. Input from the principal is included in the prompt; however, by asking them to write to someone unknown to them, I have made the task of meeting audience related task demands slightly more difficult. At the end of the discussion of each participant’s independent essay, I will provide a table summarizing his or her scores on all essays completed for the study, thus allowing the reader to note how changes in problem solving strategies may have impacted writing performance on these tasks. As I did with pre- and posttest essays above, I will provide the full text of each participant’s independent essay exactly as written (including errors in spelling, mechanics, and usage) and discuss the essay’s overall quality as measured by the NAEP (2007) rubric as well as participants’ scores on the Toulmin-based rubric (McCann, 1989) used in the study (Table 8, below):

Table 8

Holistic and Toulmin-Trait Scores for Independent Essays

<u>Participant</u>	<u>Independent Essay – School Uniforms</u>						<u>Response</u> 0,1,2,3	<u>Toulmin</u> 0-24
	<u>NAEP</u> 1,2,3,4,5,6	<u>Claims</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3			
Jessica	4	4	4	4	1	1	14	
Brian	3	4	4	2	1	1	12	
Ann	5	6	4	4	3	3	20	
David	4	4	4	6	2	2	18	

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

Before discussing each participant’s independent essay in detail, I would like to comment on their performance on this essay in relation to pre- and posttest performance. Perhaps most importantly, an analysis of independent essays revealed that all participants were able to include a warrant in their independent essays as well as in their posttest essays – something none of them was able to do in their pretest essays. The ability to warrant claims proved to be the strongest indicator of movement between the problem spaces of content and rhetoric (Scardamalia, Bereiter, & Steinbach, 1984), and thus of the knowledge transforming strategy. Participants negotiated these problem spaces in different ways. Jessica succeeded in finding a place for a warrant at the end of her essays to answer the audience’s question, “Why would she do that?” – a content to rhetorical problem space move she was unable to make prior to instruction in the Toulmin model. The other three participants all used their evolving warrants to generate effective

supporting data. Brian showed especially marked progress in moving between these problem spaces, generating warrants flexibly as he produced new data while he problem solved.

In closely examining independent essays composed by participants, I noticed, however, that Brian's warrants were somewhat weaker. This may indicate that more so than Ann and David, Brian relied on the dialogic nature of the intervention protocol (scaffold) to support this movement between emerging warrants (rhetorical problem spaces) and emerging content (content problem spaces). David's warrants, by contrast, were even more sophisticated than those he cited in his posttest essay, and Jessica and Ann performed at the same level. Performance in the area of data was the same as the posttest with the exception of David who saw a slight drop in this category despite providing stronger warrants. Once more, David and Ann acknowledged and addressed opposing viewpoints potentially held by their intended audiences as they had in all the essays they wrote for the study. Brian again addressed opposition – something he did in his posttest essay but did not manage in his pretest essay. Interestingly, Jessica, who did not deal with opposition in either her pre- or posttest essay, did so in her independent essay, although her acknowledgment of opposing viewpoints was brief and undeveloped.

In terms of the overall quality of their argumentative essays as measured by the NAEP (2007) 8th Grade Persuasive Rubric, Brian's holistic scores showed a steady improvement, going from a score of 1 on the pretest to a 3 on the independent essay and a 4 on the posttest. Jessica also showed improvement over time, earning a 3 on the pretest, and 4s on the independent essay and the posttest. Ann likewise progressed across the three essays earning scores of 5 on the pretest and independent essays, and a 6 on the

posttest. David, however, scored a 6 on the pre- and posttest, but on the independent essay earned only a 4 on the holistic rubric despite receiving the highest score for warrants. I see David's independent essay as an illustration of the fact that integration of argument elements is essential to convincing an audience, thus his extensive warrants, although sophisticated and compelling, did not function as effectively as they could have as a bridge connecting his data to his claims.

With the exception of David's slightly lower holistic score (an apparent anomaly as he earned top holistic scores on his pre- and posttest essays), it appears that, as was the case with the posttest, scaffolded instruction in the Toulmin model improved overall essay quality. This improvement may be due in part to a reduction in the cognitive load experienced by participants as a consequence of being provided with a heuristic that facilitated knowledge transforming. I had expected this greater facility with handling argumentative task demands in posttest protocols – which it was – but was pleasantly surprised to see how well participants handled these task demands without the support of a scaffold. This improvement is particularly meaningful given that only actual performance will be the measure of success for these writers in future academic, workplace, and social contexts. Thus, scaffolded instruction in the Toulmin model appears to have provided participants with a more effective schema for argumentative writing, enabling them, most notably, to include warrants in their essays across the boards, make some gains in the quality of supporting data, and acknowledge opposition to some extent, a capability neither Jessica nor Brian exhibited on the pretest. This facility in the handling of audience related tasks demands is due at least in part to the capacity of the Toulmin model, a complex framework (Hayes, 2006) to facilitate problem

solving by providing a means of moving between the problem spaces of content and rhetoric (Scardamalia, Bereiter, & Steinbach, 1984). Having discussed independent essay performance in general terms, I will now closely examine each participant's essay for evidence of problem solving strategies and the effects of scaffolded instruction in the Toulmin model.

Jessica

In writing their independent essays, participants in the present study were provided with a paper for the purposes of planning. Although they were told that planning was optional, all four participants used the paper to plan prior to composing their independent essays. Jessica's plan for her essay on the topic of whether or not students at her middle school should be required to wear school uniforms is reproduced below:

With it

- 1) negative comments
- 2) judging by closes [clothes]
- 3) encouraging people to do tobacco and alcohol
- 4) violatent or insulting comments
- 5) viewing equal
- 6) teachers / staff don't have to worry about it
- 7) breaking school rules
- 8) students don't need to think about if it is inappropriate
- warrant 9) not about what you wear its about learning and being safe
- claim/statement 10) ~~with it~~ in favor

Although Jessica's plan takes the form of list and reflects thinking very much in keeping with the knowledge telling strategy cued for be the SEE model, Jessica nevertheless included a warrant in the planning phase that she arrived at as a consequence of considering the data. She also revises her initial position statement from the less formal "with it" to the more formal "in favor."

Jessica's independent essay on the topic of school uniforms was comprised of 13 sentences and 199 words – by far her longest essay. Addressing her letter to the president of the local school board, Jessica wrote:

I am in favor of WMS students wearing uniforms. I am in favor because students clothings are sending negative comments to youngsters but also elders. Students are judging other students by what they wear, or where they shop. Students not wearing a uniform are expressing their self in sometimes good and bad ways. Students wearing tobacco products and alcohol on their shirts are encouing others and themselves to do tobacco or alcohol. Shirts are sending violent and insulting messages. Most of the time, by not wearing a uniform, people are not all seen equal. If we wear uniforms then the teachers and staff don't need to worry about what kids are wearing. If you are wearing uniforms you don't have to worry about breaking school dress code. Also students don't need to worry the whole day if their shirt is appropriate or not. Most students will get in trouble for their shirt if it is bad and told not to wear it again but they really will. I am in favor of wearing uniforms because school shouldn't be a place where you arent safe. So school is not about what you wear it is about learning and being safe.

Using the NAEP (2007) 8th Grade Persuasive Rubric, the co-rater and I reached consensus on a score of 4, "sufficient response." First and foremost, the essay is an effective argument because Jessica "[t]akes a position and supports it with some pertinent reasons and/or examples." For the most part, support is taken directly from the prompt, but some ideas were extensions of the prompt, and others were Jessica's entirely. Jessica focuses on the idea that uniforms will eliminate the problem of students "judging other students by what they wear, or where they shop." Jessica also took the argument that administrators would not have to deal with problems related to the dress code from the

prompt, but extended that advantage to students as well saying that that if students wear uniforms, they will not have to worry about getting in trouble for dress code violations. The co-rater and I thus saw “some development” in Jessica’s arguments. Once again, Jessica’s formulaic approach to the writing task resulted in an essay that was “generally organized but has few or no transitions among parts.” On the sentence level, her writing consisted of sentences that were “simple and unvaried,” but were characterized by diction that was “mostly accurate.” In contrast to her pretest essay that contained some errors in grammar and usage that were “distracting,” she had no such errors in her independent essay or her posttest essay – an improvement that may indicate a reduction in cognitive load.

In scoring Jessica’s essay using the Toulmin/McCann (1989) rubric, the co-rater and I agreed that she should receive a total of 14 out of a possible 24 points. As I mentioned in the discussion of her holistic score above, much of Jessica’s content for her essay came directly from the prompt, but some content constituted effective extensions of prompt material, most notably her arguments that the policy would address students judging other students on the basis of their clothes, and that students too would not have to think about whether or not their clothes were school appropriate. For this reason, the co-rater and I determined that Jessica should receive a score of 4 for data as the data she provided was “relevant but not complete” and “left the reader with much to infer.” Although Jessica’s writing remained somewhat formulaic, she succeeded in including a warrant at the end. I believe evidence of the effects of instruction in the SEE model is evident here. Jessica provides a position statement and examples, and then includes a warrant at the end of the essay because it fits the explanation slot of the SEE heuristic.

Jessica uses SEE to meet all the content requirements of an essay, and, in her words, “Then it’s done.”

As was the case with her posttest essay, Jessica’s warrant for her independent essay addressed the idea that schools serve the function of educating children and should thus meet certain standards. In her posttest essay, her warrant expressed her belief that snack machines would result in unclean conditions and an increase in bullying. In her independent essay, she argues that “school is not about what you wear it is about learning and being safe.” This warrant, although simple, is rhetorically effective as the president of a local school board would certainly want schools to provide a safe learning environment for students. The co-rater and I agreed to a score of 4 for Jessica’s warrant as it “explains the data in some way, but the explanation is not linked specifically to the claim.” Although her assertion that schools should be safe and support learning clearly relates to her position statement, not all data are clearly connected to the claim through her warrant.

Finally, although she made no reference to opposing viewpoints in either her pre- or posttest essay, Jessica did include minimal acknowledgement of opposition in her independent essay. Initially, the co-rater and I had both rated opposition and response to opposition in Jessica’s independent essay at a score of 0, but we noticed that she acknowledges students wearing clothes they choose themselves “are expressing themselves in sometimes good ... ways.” She then focuses on the “bad ways” expression may take place through clothing. As minimal as this recognition of opposition may be, the co-rater and I agreed that Jessica’s essay “vaguely implies the existence of some opposition” and “weakly denies what the opposition claims” – the criteria for a score of 1

on the Toulmin/McCann rubric. Although Jessica’s understandings of argumentative writing tasks remained somewhat mechanical and largely informed by the knowledge telling strategy, her ability to warrant her arguments in both her posttest essay (with the support of the protocol) and her independent essay (without the support of scaffolding provided by the protocol) clearly indicates that she is making progress in her movement from knowledge telling to knowledge transforming. Table 9 (below) summarizes Jessica’s NAEP holistic and Toulmin-McCann rubric scores for all essays she composed for the study:

Table 9

Summary of Essay Scores for Jessica

<u>Essay</u>	<u>Independent Essay – School Uniforms</u>						<u>Toulmin</u> 0-24
	<u>NAEP</u> 1,2,3,4,5,6	<u>Claims</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3	<u>Response</u> 0,1,2,3	
Pretest (Gum)	3	4	2	0	0	0	6
Independent (School Uniforms)	4	4	4	4	1	1	14
Posttest (Snack Machines)	4	4	4	4	0	0	12

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

Brian

In planning his essay on the topic of school uniforms, Brian, like Jessica, composed a list. He numbered on his planning paper from 1 to 15, but wrote ideas next to only numbers 1 to 5 as follows:

1. not wear uniform
2. send negative and positive messages
3. should not have to wear Everything
4. should express themselves
5. If everyone wore the same thing it would be boring

Jessica and Brian's plans indicate an approach to planning based in the knowledge telling strategy. As the SEE heuristic dictates, both determine their position on the issue prior to considering content. They then list supporting data they deem to be relevant to the task, and end their lists when they run out of appropriate content. These two writers' plans also differ in that Jessica includes a warrant in her plan, but Brian, who showed himself to be very fluent in generating warrants in his posttest protocol even in the planning stage, does not include anything here that meets the criteria for a warrant (although he is moving in that direction with the assertion that everyone wearing the same thing would be "boring").

In terms of length and number of sentences, Brian's essays were nearly identical across tasks. His independent essay was 191 words long, and included 17 sentences I was able to identify in spite of Brian's occasional lack of observation of sentence boundaries. Brian wrote:

I am not in favor of students at WMS wearing uniforms. Students will not be happy with wearing plain dress clothes. Uniform usually match school color, students would not like

to wear dress shirts ties and dress pants every day. WMS is a public school, it is not a private school with uniforms. Some students wear exotic colors with wild designs. We are going to school, not business. Principals teachers etc wear dress suits to work. Students would feel uncomfortable in uniforms. Kids should not be forced to wear the same clothing. Some shirts send negative messages & I understand kids should not wear shirts with negative messages to school. But shirts can also give positive messages. I disagree because I am a student at WMS & kids should not have to wear what everyone else is. If it should be, everything would be boring. If everyone had no expression, drove the same car, told the same joke, it would be a boring life, You need that laugh You need those cool cars, & You need other personality. This is why I'm not in favor [At the conclusion of the essay, Brian drew an arrow from the last sentence into the margin and added, "Makes them happy so they will learn."]

The co-rater and I agreed that Brian's essay should receive a score of 3 ("uneven response") on the NAEP (2007) 8th Grade Persuasive Rubric. This score was lower than his posttest score of 4 ("sufficient response"), but a great improvement over his pretest score of 1 ("unsatisfactory response") which he earned largely due to the fact that he did not take a clear position on the pretest topic. The co-rater and I determined that Brian's essay should be scored a 3 because he did "[t]ake a position," but the support he provided was "uneven" and in more than one instance "lack[ed] development." His loading of content from his list into the emerging text – a hallmark of knowledge telling – resulted in the writing being somewhat "disjointed" and "lack[ing] transitions." Although grammar and usage errors did not interfere greatly with understanding, it was nevertheless the case that Brian's essay "[e]xhibit[ed] uneven control over sentence boundaries and sentence structure."

Shifting from a holistic perspective to a Toulmin lens, the co-rater and I determined that Brian's essay should earn a total of 12 of 24 possible points. In terms of the data he provided, Brian relied on the prompt for some content, but accessed personal experience in many instances. Reading Brian's description of what kids might wear by way of school uniforms, I recalled that Brian is a "walker" rather than a bus rider, and

that he waits in the lobby of the school before being dismissed for the day. Several students who attend a private school across the street also wait in the lobby after school (for bus transportation home) and Brian appears to have based his description of school uniforms at least in part on the appearance of these private school students. As was the case with his posttest essay, the data Brian provides is “relevant but not complete” to the point where a reader cannot “determine their significance” in at least some cases.

In the area of warrants, Brian’s independent essay may be viewed as a point in his progress toward using warrants creatively and flexibly as was evident in his posttest protocol. On his independent essay, the co-rater and I agreed to a score of 2 for warrants. The only idea expressed in the essay that met the criteria for warrants is Brian’s last, marginal sentence: “Makes them happy so they will learn.” I discussing this essay with Brian, Brian, like Jessica, recognized a need to provide a warrant at the end of the essay as a justification of the claim (statement) and data (examples) offered in support of the claim. They criteria for a score of 2 on the Toulmin/McCann rubric specify that the writer made an “attempt ...to elaborate about some element in the data” and “recognizes a need to connect the data to the claim,” but “fails to make the connection.” Brian’s warrant expresses the idea that happiness is related to productivity, and although this idea is certainly connected to the data stating that wearing uniforms and any other circumstances where people are expected to behave in the same way would lead to “a boring life,” the reasoning offered does not unite all the data presented and connect it clearly to the claim.

Brian’s independent essay was also similar to Jessica’s in the area of opposition. Brian’s only nod to opposition may be seen in his statement, “I understand kids should

not wear shirts with negative messages to school.” Like Jessica, Brian earned a score of 1 for the categories of opposition and response to opposition for including material that “vaguely implies the existence of some opposition” and “weakly denies whatever the opposition claims.” Also like Jessica, Brian’s only acknowledgment of opposition was taken directly from the prompt. Nevertheless, Brian made considerable progress throughout the study, beginning with an argumentative essay in which he did not even take a clear side to arguing a position, providing increasingly effective data, and most importantly, using warrants flexibly to connect arguments and generate additional data in his posttest protocol and essay. His plan and essays reveal that Brian is still largely using knowledge telling as a primary strategy, but his inclusion of warrants and effective data indicate he is making progress in transforming knowledge to meet rhetorical aims. In Table 10 (below) I summarize Brian’s scores across writing tasks:

Table 10

Summary of Essay Scores for Brian

<u>Essay</u>	Independent Essay – School Uniforms						
	<u>NAEP</u> 1,2,3,4,5,6	<u>Claims</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3	<u>Response</u> 0,1,2,3	<u>Toulmin</u> 0-24
Pretest (Gum)	1	4	2	0	0	0	6
Independent (School Uniforms)	3	4	4	2	1	1	12
Posttest (Snack Machines)	4	4	4	4	1	2	15

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

Ann

Both Ann and David – the two high ability writers who took part in the study – appear to have more fully integrated the Toulmin model into their argumentative writing schemas. Whereas Jessica and Brian still appeared to rely on the SEE heuristic in merely listing content they tested for appropriateness using the knowledge telling strategy as it occurred to them, Ann and David planned using the more flexible Toulmin heuristic, including the components of data, claim, and warrant. Ann appears to have taken a position on school uniforms before generating data, writing “No!!” and underlining it twice at the top of her planning paper. She then proceeded to list data in the form of a

Pro-Con list, then wrote a claim and warrant (not labelled as such but in the correct place) that appeared on a Toulmin framework she reproduced from memory in the slots for those components. I reproduced Ann’s plan below:

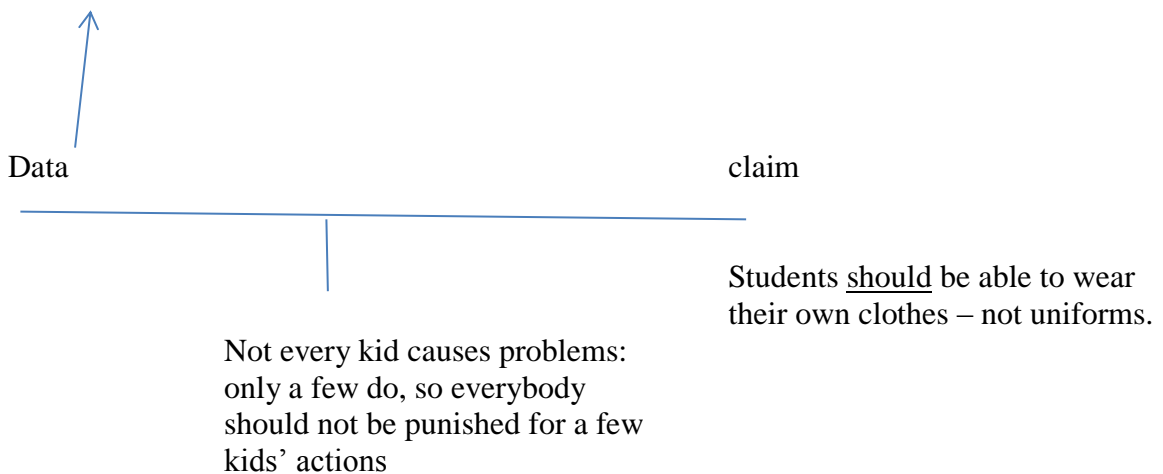
No!! (underlined twice)

Pros

- * Students feel free to express themselves
- * Positive messages

Cons

- * Dress code viol.
- * Less time learning – more Dress code dealing with ___



In the discussing her independent essay with me, Ann related that she went about planning her essay on school uniforms in the same manner that she had been taught to use the Toulmin heuristic in instruction – generating data, formulating a claim based on the data, and then coming up with reasoning that justifies the claim based on the data provided. In creating her plan in this manner, Ann engaged in “conceptual planning” (McCutchen, 2006) – problem solving all task demands prior to generating a draft in the interest of meeting content and rhetorical goals. Rather than simply listing content and checking it for appropriateness, as writers do when using the knowledge telling strategy – Ann succeeded here in transforming knowledge by coming up with not only a position

and relevant support, but also a clear statement of the reasoning she used to arrive at her position based on the data (i.e., a warrant, and a rhetorically effective one at that).

Ann's letter addressed to the school board president arguing against the policy requiring school uniforms, the shortest piece she wrote for the present study, was 184 long and consisted of 15 sentences:

I believe that students should be able to have the choice to wear their own clothing! I know that not EVERYONE disobeys the school dress code. So why should everybody be punished? If one person fails a test, the whole class doesn't also get F's, as a punishment! Students work hard at school, so they deserve to express themselves! Sometimes, shirts carry positive messages, so why would you ban those, too?!

However, some things are bad about no uniforms. For one, students are violating the school dress code. You also say teachers take valuable learning time dealing with these students. The answer to this is simple: just send these students to the office immediately. Then, teachers can keep teaching, and parents can be called if need be. If these ways do not work, maybe the individuals should be given uniforms. Besides if all middle schools use uniforms, students won't always wear them, or not wear them properly.

As I know you might not agree with the student council and I, just please consider my reasons. Thank you for taking time to read this letter.

Using the NAEP (2007) 8th Grade Persuasive Rubric to assess the overall quality of Ann's independent essay, the co-rater and I agreed on a score of 5 ("Skillful Response"). Going into the study, Ann understood that taking a position and supporting it is the main goal of argumentative writing. Here, as she did in her other essays, Ann "[t]akes a clear position and supports it with pertinent reasons and/or examples." Ann also entered the study believing that it is the duty of the writer to present both sides of the issue at hand, largely because failing to do so would compromise the credibility of the writer's arguments and the rhetorical effectiveness of the piece. Ann meets this goal, but she takes the audience from her position to opposing viewpoints back to her position in a somewhat mechanical manner. For this reason, her essay was rated a 5 because, although it "is well organized," it nevertheless "lack[ed] some transitions." Finally, Ann exhibited

some passion and creativity in trying to reach her audience, composing an essay characterized by “some variety in sentence structure and ... good word choice.”

In evaluating Ann’s essay using the Toulmin/McCann (1989) rubric, the co-rater and I determined that Ann’s essay should receive 20 out of a possible 24 points. As I mentioned above in discussing Ann’s holistic score, Ann is diligent about presenting opposing viewpoints and addressing them. In presenting her arguments against the school uniform proposal, Ann “systematically identifies the opposition and the opposing arguments” and “states counterarguments which directly address the opposition and which are clear and complete.” For these reasons, Ann earned a score of 3 for both opposition and response to opposition as she did on pre-test and posttest essays. Another area where Ann scored consistently across tasks was data. As she did on the pre- and posttests, Ann earned a 4 for data on her independent essay. Ann generated content for the essay that was consistently “relevant” but in some cases “not complete enough to allow the reader to determine their significance.” The interdependence of elements of the Toulmin model is apparent in the connection between the sometimes incomplete data Ann provided and her score for warrants. Just as not all data was sufficiently clear, Ann’s includes a warrant that “explains the data in some way, but the explanation is not linked specifically to the claim” throughout the essay.

As I report Ann’s scores, I am mindful of the fact that McCann’s (1989) Toulmin-based rubric was designed to assess the quality of essays written by students Ann’s age, but much older students as well. That Ann was unable to include a warrant in her pretest, but earned a score of 4 for warrants for her independent and posttest essays, shows remarkable progress. Although Ann entered the study as a high ability writer who

already demonstrated some sophisticated understandings of how arguments work, she nevertheless appears to have benefitted from the intervention instruction in the Toulmin model as her independent and posttest essays both indicate an ability to warrant her arguments – a gain that I attribute to the Toulmin models capacity to facilitate knowledge transforming. Ann’s scores across tasks appear below:

Table 11

Summary of Essay Scores for Ann

<u>Essay</u>	Independent Essay – School Uniforms						<u>Toulmin</u> 0-24
	<u>NAEP</u> 1,2,3,4,5,6	<u>Claim</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3	<u>Response</u> 0,1,2,3	
Pretest (Gum)	5	6	4	0	3	3	16
Independent (School Uniforms)	5	6	4	4	3	3	20
Posttest (Snack Machines)	6	6	4	4	3	3	20

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

David

Like Ann, David, too, entered the study with a thorough understanding of the purposes of argument and how those purposes might be achieved. He was also a highly capable writer, achieving the highest possible score of 6 on the NAEP (2007) 8th Grade

Persuasive Rubric for his pretest and posttest essays. The intervention instruction in the Toulmin model benefitted this high ability writer as well. In planning his pretest essay, David employed typical knowledge telling strategies, listing pros and cons changing the gum policy at his school. Having listed 5 pros and 5 cons, he declared that he was “stuck.” That David was stuck in this manner revealed to me that David did not have a schema for transforming knowledge – evaluating potential content (data) and considering how ideas he generated could support a claim (i.e., warranting his arguments). His posttest essay clearly showed that the intervention instruction in the Toulmin model provided him with the tools to engage in knowledge transforming. The planning he did for his independent essay also reveal that David had internalize the Toulmin model, thus developing a more effective schema for problem solving argumentative writing task demands. I reproduced David’s plan for his independent essay on the school uniform proposal below:

<u>Data</u>	<u>Warrent</u>	<u>Claim</u>
Students wear shirts sending out a wrong message school “will rebel” “express themselves” wear school uniforms still deal with the dress code	the british did things to the coloneys and they started the United States. If you make us look and feel the same we will rebel. Do not take away our individualness.	We <u>do not</u> want to wear a uniform to

Although David did not reproduce the framework of the Toulmin model as Ann had, he listed ideas and labelled all components of the model exactly as he had in completing tasks related to the intervention instruction. Most impressive here is the level of sophistication of David’s warrant which relates the school uniform proposal – an

imposition of rules that limit expression – to the reasons why colonists rebelled against the British. As I will discuss in detail below, his outstanding warrant did not result in his best essay.

David' independent essay reads as follows:

The student concil at West Middle will not tolerate school uniforms. Wearing uniforms will take away are personality's. The only way some people express themselves is through clothing. One of the reasons I go through public school is to not pay extra money and to express myself by wearing clothing of my choice. The reason some said sure and agreed is because they wana look like everyone else or don't want to get their clothes dirty. Clothing will not make us smarted and concentrate in class because no one would like it. We should not have to raise our blood pressure and waste enery over a stupid uniform. Plus I have never seen a teacher waste energy telling someone to change their clothes. If you take away our clothing whats next our religion. In school we are to learn not be bossed around by people who think every thing should be the same. You do little things now and then big things later. I see people from [a private Catholic school] and all of them (in uniforms) look they were just at a concert. If you buy uniforms you by cheap ones and sell them expensivly over price. A few students stated they would rebel. and I will rebel if you do issue uniforms. Like the british did to us long ago. Taxation without representation. You take away are rights which we don't deserve. We are individuals and you can't take that away.

As I mentioned above, David received the highest possible holistic score of 6 (“Excellent Response”) on the NAEP (2007) 8th Grade Persuasive Rubric for his pretest and posttest essays. The co-rater and I agreed, however, that David's independent essay should earn a score of 4 (“Skillful Response”) on the NAEP scale. David certainly states a clear “position and supports it with some pertinent reasons and/or examples,” but in spite of the fact that he includes a good deal of content, there is only “some development” of his argument. There is not much variety in sentence structure and very little by way of transitions. Simply put, it seems that David's passionate reaction to the proposal, although it lead to some interesting content generated in part by his underlying reasoning

(warrant), resulted in his neglecting some obligations to his audience, thus detracting from the potential rhetorical effectiveness of his essay.

In applying the criteria of the Toulmin/McCann (1989) rubric, the co-rater and I gave David's independent essay 18 out of a possible 24 points. In warranting his claim that students "will not tolerate school uniforms" because they "take away [our] personality's," David most definitely "explains the data in such a way that it is clear how they support the claim." The data he presents, however, are "relevant but not complete" and thus David "leaves much for the reader to infer from the data," especially the task of having to "determine their significance." In attempting to figure out how David's problem solving strategies may have been affected by the model he knew – SEE – and the model he was taught in the intervention instruction – the Toulmin model – I have determined that David made the following moves. First, David made use of the Toulmin model, listing data and warrants to support his position against the proposal. One thing that came through strongly throughout the intervention instruction is that David saw the value of coming up with compelling reasoning to link data with claims. In trying to get to the heart of his opposition to wearing school uniforms, David hit on the unfairness of arbitrarily inhibiting students' freedom of expression and noted that this is an advantage of attending public school. He further notes that wearing uniforms will not advance learning – the purpose of schools. In trying to understand where SEE and the Toulmin model may have intersected in shaping David's problem solving strategies, it appears to me that once he came up with his warrant, which he was very pleased with, David then switched into knowledge telling mode, listing ways in which wearing school uniforms is comparable to the British imposing upon the freedoms of colonists. In doing so, he

moved away from meeting the rhetorical demands of the task as well as he is capable of based on both pretest and posttest performances. Along with not effectively connecting his warrant to his claim, another consequence of this move away from considering rhetorical goals was a drop in his scores for opposition and response to opposition from 3s on his pre- and posttest essays to 2s on his independent essay as both opposing views and his responses too them lacked specificity.

I view David's independent essay as an important point in his progress in moving from knowledge telling to knowledge transforming. David entered the study unable to judge the relative merits of the content he generated in planning. Over the course of the study, he acquired the ability to warrant his arguments, and came to an understanding that warrants serve as a means of evaluating and synthesizing emerging data, and revising his claim (position) based on warranted data as he did when he "twisted" the proposal for his posttest essay on having snack machines turned on during school hours. Like Ann, David was already fairly skilled at identifying and responding to opposition when he entered the study. Also, like Ann, however, this highly skilled writer benefitted from the intervention instruction in the Toulmin model as it provided him with a more effective schema for problem solving argumentative writing task demands, moving between the problem spaces of content and rhetoric to transform knowledge.

David's essay scores across tasks appear below:

Table 12

Summary of Essay Scores for David

<u>Essay</u>	Independent Essay – School Uniforms						<u>Toulmin</u> 0-24
	<u>NAEP</u> 1,2,3,4,5,6	<u>Claims</u> 0,2,4,6	<u>Data</u> 0,2,4,6	<u>Warrants</u> 0,2,4,6	<u>Opp.</u> 0,1,2,3	<u>Response</u> 0,1,2,3	
Pretest (Gum)	6	6	4	0	3	3	16
Independent (School Uniforms)	4	4	4	6	2	2	18
Posttest (Snack Machines)	6	6	6	4	3	3	22

Note. NAEP holistic scores range from 1 to 6 as follows: 1 “unsatisfactory, 2 “insufficient,” 3 “uneven,” 4 “sufficient, 5 “skillful,” 6 “excellent.” Toulmin-McCann scores range from 0-24.

Conclusion

Based on the surveys they completed prior to their participation in the present study, and their performance on McCann’s (1989) argument identification exercise, it is apparent to me that the four students participating in this case study understood the purposes of argument and could recognize an argumentative text, but that their experiences with the SEE model limited their approach to composing arguments to strategies related to knowledge telling (Bereiter & Scardamalia, 1987; Scardamalia, Bereiter, & Steinbach, 1984). Their pretest essays on the proposed change to the gum policy revealed that although all four of them could generate potentially effective content

using SEE, they could not synthesize this content into rhetorically effective essays that met the audience related task demand of warranting arguments. On both independent and posttest essay tasks, however, all four participants *were* able to warrant their arguments. This finding, which most clearly indicates a shift from knowledge telling to knowledge transforming, is perhaps the most important finding from this study. Furthermore, both average and high ability participants were able to achieve the same level of performance in warranting their arguments on the posttest. Jessica and Brian – the two average ability students in the study — experienced greater success in the area of providing effective supporting data as well as in addressing opposition. The two high ability participants – Ann and David – were already fairly proficient in providing effective supporting data and were quite skilled in handling opposition, demonstrating the same level of performance on these indicators across writing tasks.

Ann and David were also sufficiently capable as writers to receive ratings of “skillful” or “excellent” on the NAEP (2007) persuasive rubric from the outset. Both Jessica and Brian improved in terms of their holistic scores from pretest to posttest, with Jessica going from a score of 3 (“uneven”) to 4 (“sufficient”), and Brian going from a 1 (“unsatisfactory”) to a 4 (“sufficient”). Jessica and Brian’s improvements in holistic scores suggest to me that the intervention instruction in the Toulmin model provided them with a more efficient schema for writing arguments, and that this more efficient schema reduced cognitive load thus enabling them to produce and synthesize ideas for the essays and then transform this knowledge in the interest of convincing their audience to accept their arguments. In doing so, they successfully moved between the problem spaces of content and rhetoric to meet audience related tasks demands (Scardamalia,

Bereiter, & Steinbach, 1984). Although I cannot point to Ann and David's high level of performance as measured by the NAEP (2007) rubric as evidence that the intervention instruction in the Toulmin model improved the overall quality of the argumentative essays they composed for the study, I can argue that introducing them to the model and teaching them task specific procedures did not appear to interfere their problem solving or writing capabilities in any way.

Thus, the intervention instruction in the Toulmin (1958/2003) model enabled all participants in the study to warrant arguments, and improve or maintain a high level of performance in the areas of data and opposition. Overall essay quality improved for the two average ability participants, and was maintained by the high ability participants, suggesting that the knowledge transforming strategies introduced by the model may improve performance for average ability writers and will not interfere with the efficiency of the existing schemas for argumentative writing that guide high ability writers' problem solving processes.

In this chapter, I presented the results of the present case study which examined the effects of providing scaffolded instruction in the Toulmin model to four sixth-grade writers. I derived these results from surveys completed by participants prior to the study, pre- and posttest argumentative essays and intervention protocols, and argumentative essays and plans generated by participants independent of the scaffold provided by the intervention protocol, thus determining changes in both proximal and actual performance.

In Chapter V, I will summarize the study, discuss the conclusions I have drawn from the results of my investigation, acknowledge limitations, and make

recommendations for future research and practice related to the use of the Toulmin model in argumentative writing instruction.

Chapter V

Summary and Discussion

In this chapter, I provide a summary of the present case study. In addition to discussing the results of my investigation, I comment upon what I see to be the limitations of the study and examine possible implications for future research and practice.

A Summary of the Research Study

Despite the importance of argument in personal, professional, academic, and social contexts (Crowhurst, 1988; Graham, 2006; Hernandez, Kaplan, & Schwartz, 2006; Hillocks, 2011; McCann, 1989; Persky, Daane, & Jin, 2002), our nation's secondary students cannot write effectively in the argumentative mode (Crowhurst, 1988; Knudson, 1992; McCann, 1989; National Center for Educational Statistics, 2012; Persky, Daane, & Jin, 2003; Salahu-Din, Persky, & Miller, 2008; Schneider, 2008; Schultz & Laine, 1987; White & Venneman, 2000). Two major factors contributing to secondary students' difficulty with argumentative writing are ineffective writing instruction (Applebee, 1986; Applebee, Langer, Jenkins, Mullins, & Foertsch, 1990; Bereiter & Scardamalia, 1987; Everson, 1991; Hillocks, 1986; Hillocks, 1995; Hillocks, 2011; Langer & Applebee, 1987; McCutcheon, 2006; Prichard & Honeycutt, 2006; Schultz, 2006; Smagorinsky, 1994; Swanson-Owens & Newell, 1994) and the inherent cognitive difficulties of argumentative writing tasks (Burkhalter, 1995; Crammond, 1998; Golder & Croirier, 1994; Graham, 2006; Kellogg, 1994; Knudson, 1992; Kroll, 1978; McCann, 1989; McCutchen, 2006). Unlike other writing tasks that do not require planning beyond what would be necessary to carry on a conversation (e.g., many narratives, simple exposition,

the reproduction of memorized information), argumentative writing requires writers to address problems of content and rhetoric in the planning stages, engaging in what Bereiter and Scardamalia (1987) have termed “knowledge transforming.” In contrast to “knowledge telling” (Bereiter & Scardamalia, 1987) wherein a writer simply produces relevant content and adds ideas he or she deems appropriate to the emerging text, knowledge transforming requires writers to engage in problem solving to identify specific content and rhetorical task demands and solve associated problems prior to composing. Because argumentative writing requires a writer to problem solve complex audience related task demands – including warranting arguments, generating convincing data, and addressing opposition, which were found by researchers and practitioners (Burkhalter, 1995; Crammond, 1998; Knudson, 1992; McCann, 1989) to pose great difficulty for young writers – argumentative writing requires writers to move back and forth between the problem spaces of content and rhetoric to address these demands (Scardamalia, Bereiter, & Steinbach, 1984) – thus, transforming knowledge to meet their goals.

Participants who took part in the present study had been taught to use a heuristic known as the “SEE” (Statement, Example, Explanation) model to compose argumentative essays, a heuristic that cues for knowledge telling. I selected the Toulmin (1958/2003) Model of Argument to serve as the basis for the intervention instruction for this study as an alternative to SEE. Unlike SEE, the Toulmin model facilitates the knowledge transforming that effective argumentative writing requires. The Toulmin model maps onto cognitive models of the writing process (Flower & Hayes, 1981; Hayes, 1996; Kellogg, 1994), all of which share a view of writing as recursive and goal-directed. The Toulmin model thus has a great deal of potential to serve as an effective instructional

scaffold that, in the context of inquiry-based learning (Hillocks, 1986, 1995, 2011; Wells, 2000), may be internalized by the learner and become a part of his or her schema for argumentative writing, a process Koulzin (1986) described as the “final product of ... child-adult cooperation ... which, being internalized, becomes an integral part of the child’s own reasoning” (p. xxxv). Through the creation of a zone of proximal development (ZPD) with each participant, my aim in carrying out the present study was to determine if, and to what extent, scaffolded instruction in the Toulmin model would affect the problem solving strategies of four sixth-grade writers. By comparing pre- and posttest performance on tasks completed with the support of an intervention protocol, I attempted to gain a better understanding of participants’ “proximal” capability – what a learner can achieve with some assistance from a more knowledgeable, capable other (Vygotsky, 1934/1986) – a cognitive territory Graham (2006) described as being “the most critical region of instructional sensitivity at which knowledge advancement can take place” (p. 214). By asking participants to complete an essay identical in task demands to the pre- and posttest essays without the support of a scaffold, I attempted to determine also what they could do at “actual” levels (Vygotsky, 1934/1986), seeing if, and to what extent, they had internalized the Toulmin model and used it in their independent problem solving.

A major focus of the present study was to determine if four sixth-grade writers could more effectively handle the audience-related task demands of warranting arguments, generating convincing supporting data, and addressing opposition by learning the Toulmin (1958/2003) model as an alternative to the SEE model. The research questions for the present study were:

1. Does scaffolded instruction in the Toulmin model improve the overall quality of participants' argumentative essays?
2. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of warranting arguments?
3. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of providing convincing supporting data?
4. Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience-related task demand of anticipating and responding to opposition?

Summary of the Research Methods

Four sixth-graders from two intact classes at a middle school in the mid-Atlantic region of the United States participated in the present case study. Two students, one female ("Jessica") and one male ("Brian"), were identified by their teacher as being of "average ability," and two other students, one female ("Ann") and one male ("David") were identified as being "high ability." After securing parental consent and student assent, participants completed a survey about persuasion, provided a think aloud while composing an argumentative pretest essay, received six units of scaffolded instruction in the Toulmin (1958/2003) Model of Argument, composed an "independent" argumentative essay without the support of the intervention protocol, discussed their independent essays with me, and wrote a posttest argumentative essay while providing a think aloud. The discussion of the survey and completion of the pretest essay and protocol occurred during the first week of the six-week study. Participants were then

provided with the intervention instruction in the Toulmin model over the next four weeks. The independent essays, discussion of the independent essays, and the posttest essays and protocols, were completed during the final week of the study (see Table 5 above, p. 166).

A few weeks after the conclusion of the present study, I trained the co-rater in two rubrics – the NAEP (2007) 8th Grade Persuasive Rubric (Appendix E), which was used to measure the overall holistic quality of the essays participants composed, and McCann’s (1989) Toulmin-based rubric (Appendix F), which was used to assess essays in terms of the presence and sophistication of the Toulmin model elements of warrants, data, and opposition and response to opposition. In carrying out the scoring of participants’ essays, I used a blind scoring procedure with the co-rater, assuring that he was unaware of which essay was the pretest, independent, and posttest essay, and thus where the essays fell in relation to the intervention instruction. Given the labor intensiveness and low inference nature of the task, I took it upon myself to identify segments in the protocol transcripts that constituted original utterances (i.e., utterances that were not repetitions of previously stated ideas). Only these original utterances were coded. Over the course of two sessions, the co-rater and I coded protocols using the coding scheme I created for the present study (Appendix H).

In the interest of guarding against threats to the validity and reliability of data, I employed 2 types of triangulation: “investigator triangulation” and “methodological triangulation.” Stake (1995) coined the term “investigator triangulation” to describe the practice of having another experienced investigator score essays and code protocols, as well as using an expert panel to determine the appropriateness of instructional materials, surveys, and interview questions. In taking a mixed method approach wherein I collected

data from a variety of sources – surveys, protocols, essays, and work done in connection with the intervention instruction – I engaged in what Stake (1995) called “methodological triangulation,” the aim of which is “to nullify some extraneous influences” (p. 114) which may cloud the meanings and patterns I found. Along with member checks, reliance on an expert panel, and the use of a co-rater, taking a mixed method approach to data collection solidified my efforts to ensure the validity and reliability of data through triangulation.

A Discussion of the Results

In this section, I rehearse the research questions for the present study, and then relate the results of my investigation to each question.

Improvements in Overall Quality

The first research question I address is, “Does scaffolded instruction in the Toulmin model improve the overall quality of participants’ argumentative essays?” In order to achieve validity and consistency in assessment across studies, I chose to use the NAEP (2007) 8th Grade Persuasive Rubric because it would permit me to make connections between the pretest, independent, and posttest essays produced by the students who took part in the present study and students who wrote essays for the NAEP writing studies (Persky, Daane, & Jin, 2003; Salahu Din, Persky, & Miller, 2008; Schneider, 2008; White & Venneman, 2000).

As I reported in Chapter 4, both of the high ability students who took part in the study scored at or near the top of the NAEP scale across study tasks. Ann earned a score of 5 (“Skillful Response”) on the pretest and independent essays, and a 6 (“Excellent Response”) on her posttest essay. David was given a 6 (“Excellent Response”) for his pretest and posttest essays. His independent essay score was a 4 (“Sufficient Response”).

As I reported above, it appeared to me that David was so impassioned in his response to the school uniform prompt that he set aside audience considerations in pursuing a comparison between the school system requiring uniforms and impositions upon the freedoms of American colonists at the hands of the British. It is also possible that David may have relied on the cuing provided by the intervention protocol to achieve these top holistic scores on the pretest and posttest, and could not perform at this high level independent of the protocol.

Jessica, one of the average ability participants, scored a 3 (“Uneven Response”) on her pretest essay, but showed improvement on her independent and posttest essays, receiving a score of 4 (“Sufficient Response”) for both essays composed following the intervention instruction. It appeared that Brian, the other average ability participant, also benefitted from the intervention instruction in the Toulmin model, showing a steady increase in holistic scores across tasks. Brian’s pretest essay received the lowest score on the NAEP holistic scale, a 1 (“Unsatisfactory Response”). After having received all six units of the intervention instruction, however, he scored a 3 (“Uneven Response”) on his independent essay, and a 4 (“Sufficient Response”) on his posttest essay.

Thus it appears to me that the intervention instruction contributed to improvements in the holistic quality of Jessica and Brian’s argumentative essays with both average ability participants achieving a rating of “sufficient” on the posttest. Although I cannot claim that Ann and David experienced improvements in the overall quality of their argumentative essays as measured by the NAEP (2007) rubric, it is evident that the introduction of a new argument model and very different approach to composing argumentative essays did not have a negative effect on overall essay quality.

This suggests to me that high ability writers can accommodate the Toulmin model into their existing argumentative writing schemas with no negative impact on their problem solving of other facets of writing tasks. In Vygotskyan (1934/1986) terms, instruction in the Toulmin model can serve as an effective scaffold (Bruner, 1975) to connect what young writers already know about argument and argumentative writing with new, more sophisticated cognitive moves that effective argumentative writing requires. The Toulmin model can thus function as a heuristic that guides writers' movements between problem spaces of content and rhetoric – enabling them to move beyond knowledge telling into knowledge transforming (Bereiter & Scardamalia, 1987; Scardamalia, Bereiter, & Steinbach, 1984), thus more effectively meeting the audience related task demands of argumentative writing.

Use of Toulmin-Based Strategies

The three remaining research questions for the present study all relate to the audience related task demands of argumentative writing – warranting arguments, providing convincing supporting data, and acknowledging and responding to opposition.

Although I cannot claim that the intervention instruction in the Toulmin model improved the overall quality of all participants' argumentative essays – Ann and David were already achieving top scores – data from the study does strongly indicate that the intervention instruction in the Toulmin model positively impacted the problem solving strategies of all four participants. Prior to instruction in the Toulmin model, Jessica, Brian, Ann, and David all demonstrated thorough understandings of the aims of argumentative writing, but due to their reliance on the SEE model – a model that led them to have a mechanical view of argumentative writing and limited their strategic

moves to those associated with knowledge telling – they could not translate ideas they generated, many of which would have been very rhetorically convincing, into an effective argumentative essay. They exhibited a tendency among younger, less skilled writers who rely on the knowledge telling strategy noted by Scardamalia, Bereiter, & Steinbach (1984) wherein a writer may generate appropriate content, but cannot consider the rhetorical effectiveness of content and then modify content to better convince his or her intended audience. This movement between content and rhetoric that effective argumentative writing demands requires writers to do extensive planning prior to attempting to compose a draft. Associated with the knowledge transforming strategy, this “conceptual planning” (McCutchen, 2006), which requires writers to consider all facets of a writing task prior to drafting, appears to have been facilitated by the intervention instruction in the Toulmin model. Next, I discuss participants’ performances on pretest, independent, and posttest essays in terms of these three research questions related to the Toulmin model and its impact upon participants’ problem solving strategies.

I begin with the research question related to opposition – “Does scaffolded instruction in the Toulmin model enable participants to effectively address the audience related task demand of anticipating and responding to opposition?” I believe it is important to mention from the outset that the intervention instruction in the Toulmin model did not feature strategies for generating material related to opposition, and the planning schematic, which did have slots for data, claim, and warrant, did not have slots for opposition or response to opposition. The intervention protocol, however, did prompt participants to consider opposing viewpoints, and the prompts for all three argumentative

tasks included arguments supporting both sides of the proposition, thus supplying participants with opposition related material to work with.

Ann and David demonstrated from the outset of the study that their designation as high ability writers was well deserved. In addition to earning scores at the top levels of the NAEP (2007) holistic rubric, Ann and David also displayed considerable skill in the area of opposition throughout the study. Both earned the highest score of 3 for opposition and response to opposition on pretest and posttest essays. Ann showed this same high level of audience awareness on her independent essay, but David, as discussed above, did not perform as well on the independent essay overall, and scored 2s for opposition and response to opposition.

Neither Jessica nor Brian, the two average ability writers, acknowledged or responded to opposition in any way on the pretest. Both writers produced very good material that could have served them well as they brought up and addressed opposing viewpoints, but they did not include any of this content in their pretest essays. I believe that the reason why they did not address opposition is because the SEE model, which they had both thoroughly internalized, limits writers to knowledge telling and does not accommodate opposition. After receiving the intervention instruction in the Toulmin model, however, both Jessica and Brian acknowledged opposition on the independent essay, although their handling of opposition and response to opposition was minimal with both participants scoring a 1 for both categories. As she did on the pretest, Jessica made no mention of opposition or response to opposition on the posttest. Brian, on the other hand, scored a 1 for opposition, and a 2 for response to opposition on the posttest. As I mentioned above, the Toulmin model schematic used by participants did not have slots

for opposition or response to opposition, but I nevertheless see the inclusion of at least some opposition, weak though it might have been, as being a possible byproduct of knowledge transforming. Intervention protocol data reveal that Jessica and Brian generated a wealth of opposition material that they could have included in their essays with considerable rhetorical effect. Such audience related material could also have been used in formulating warrants to connect data to claims. As I discuss next, this was not the case for any of the four participants in writing their pretest essays; however, all four included warrants when writing both independent and posttest essays.

The second research question related to the Toulmin model – “Does scaffolded instruction in the Toulmin model enable participants to effectively handle the audience-related task demand of warranting arguments?” – led to perhaps the most important finding of the study. As was the case with opposition and response to opposition, neither Jessica nor Brian was able to translate the rich knowledge of audience they possessed into a warrant for their pretest essay arguments. Although SEE does not cue for opposition and response to opposition, it does require writers to warrant arguments as expressed in the command, “Explain how examples” (data) “are connected to the statement” (claim). This task demand related to SEE – explaining examples – is the one that teachers find, not surprisingly, to be the most difficult for students to meet. The SEE model may *demand* that a writer supply a warrant (or “explanation” of how data support claims) but the model does not support writers in *generating* warrants. Often, writers satisfice by simply restating the claim as Jessica did in her pretest essay – something she says she was instructed to do in the course of receiving instruction in SEE. Even the highly able writers, Ann and David, failed to warrant their pretest essay arguments despite having

been able to address opposition and response to opposition from the outset of the study. Thus, these two high ability writers, who managed to go beyond what SEE demands by considering how they would respond to objections by those who would disagree with them, could not take that same knowledge of their audience's viewpoints to state the reasoning they were using to connect their supporting data to their claims (in this case, a position statement on the gum policy).

That none of the four participants could formulate a warrant even though the protocol cued them to do so alerted me to the high level of difficulty that warranting arguments presents for young writers. It was this inability to warrant their arguments noted by several researchers (and that I had seen in the context of my own teaching and the experiences of colleagues) that led me to hypothesize that writers must go beyond the strategies of knowledge telling to those associated with knowledge transforming in order to meet the complex task demands of argumentative writing. A writer can come up with opposition and response to opposition by moving from the problem space of content to the problem space of rhetoric. According to Scardamalia, Bereiter, & Steinbach (1984) most writers can manage this move. It is the "return trip" to content that a writer must make in order to generate warrants, and it is warrants that make data *convincing*. None of the four participants, however, could manage to make this move using SEE even with explicit cueing. After having received the intervention instruction in the Toulmin model, however, all four *were* able to warrant their arguments. Furthermore, the average ability writers demonstrated the same level of skill as the high ability writers with all four participants earning the second highest score of 4 for warrants on the Toulmin-McCann

(1989) rubric. I attribute this ability to warrant arguments to the scaffolded instruction participants received in the Toulmin model.

The final Toulmin related research question – “Does scaffolded instruction in the Toulmin model enable participants to address the audience related task demand of providing convincing supporting data?” – is inextricably linked to the previous question on warranting arguments. As I mentioned above, it was the formulation of warrants that made data convincing. Despite having the same score of 4 across tasks, the co-rater and I agreed that the data supplied by Ann and David in their independent and posttest essays was of a higher quality than the data they provided in their pretest essays. The existence of a warrant connecting their data to their claims made their data more rhetorically effective. The co-rater and I concluded that no participant met the criteria for a score of 6 on the Toulmin/McCann (1989) rubric which requires data to be “complete, accurate, and relevant.” All participants’ data fell under the criteria for a score of 4 as it was “relevant but not complete” due to the fact that the “reader had to do at least some inferencing to determine the data’s significance.” We agreed that we would have given the data a score of 5 had such a score existed with a descriptor of some level of achievement between the descriptors for 4 and 6. The improved quality of the data, however, is reflected in the higher scores all participants received for their essays on the NAEP (2007) holistic rubric. Due to the fact that much of the data produced by participants on their independent and posttest essays was connected to the creation of the warrant, and that the warrant was in turn shaped by the data, I attribute improved performance in the area of warranting directly to participants’ data production which was at least in part guided by knowledge

transforming as participants moved between considerations of content and considerations of rhetorical effectiveness.

When reflecting upon this warrant-data connection, I think first and foremost of Brian. Brian's posttest protocol reveals that he became very fluent at generating warrants based on data, then producing additional data from his warrants. In the excerpt below from Brian's posttest essay in which he takes a position against having the snack machine turned on during the day, Brian describes how the elements of the Toulmin model work together, a characteristic of the model noted by Yeh (1998b):

Like you can have like, um ... you can have like, the statement, your claim, you can have your claim then you can have a data, then you can have another, a little warrant to go along with that piece of data, and you can have, like, little warrants and then at the end have the big warrant.

...

See, you can kinda ... um ... ex- ... have the warrant go from everything, like, 'it would make kids hyper. Why? Because if they eat junk food' ... no, wait ... wait ... 'if, if students eat junk food, then, it ... it is bad for some students to eat junk food.' That would be my data. And then, why? It would make kids hyper, and it would make your job harder to complete. So you can kinda do like little things like that, and then have the big warrant at the end.

This capacity of the Toulmin model to facilitate knowledge transforming, illustrated here as Brian moved from problems of content to problems of rhetoric and back (as described by Scardamalia, Bereiter, & Steinbach, 1984) constitutes a major change in Brian's problem solving strategies brought about by the intervention instruction in the Toulmin model. Possessing a more efficient schema for argumentative writing, Brian's scores for data improved from a 2 on the Toulmin/McCann (1989) rubric for his pretest essay to scores of 4 on both his independent and posttest essays. Jessica, too, improved from a score of 2 for data on her pretest, most of which was taken directly from the prompt, to scores of 4 for her independent and posttest essays. Although Jessica's protocols reveal

that her problem solving strategies continued to be largely bound by the SEE model, both Jessica and Brian, in their own ways, managed to use the Toulmin heuristic “flexibly” (Yeh, 1998b).

Ann and David’s post instruction essays and protocols also revealed flexible use of the Toulmin model in generating data based on warrants. The exchange with Ann below illustrates how she moved from the somewhat limiting concepts of SEE and knowledge telling to the more fluid and flexible Toulmin heuristic with its capacity to support knowledge transforming. At the very beginning of her protocol for her posttest essay, I asked Ann how she planned to approach the essay. She responded:

Well, I’d like to create a good statement. And then plan, of course, what I’m going to say. The ... good statement and good reasons to support it, ‘cause that’s, I believe, a really important ... you need plenty of examples. I think examples and a good statement are kind of like the *bone* of the writing and, like, the meat is like all the examples, ‘cause ... that just helps makes it more ... reasonable. Examples and explanation. They’re ... well, more the explanation, ‘cause that’s what gives it ... ‘cause I mean, you could just have the bone, which is important obviously -- the statement and good examples -- but if you don’t have that meat on there it’s like, why bother? [3R]

The “meat” Ann is speaking of is warranted data. Here, as Brian did above, Ann is explaining in her own way how data and warrants connecting to the claim (the “good statement and good reasons to support it”) are inextricably linked. For Ann, too, this creation of warranted data is the result of moving from problems of content to problems of rhetoric then back to content – modifying data on “the return trip” that Scardamalia, Bereiter, and Steinbach (1984) identified as the defining activity of knowledge transforming, and the move that young writers are generally unable to make. David, too, was able to make data-to-warrant-to-data moves as revealed by his posttest essay and protocol. The influence of warrants on the data David produced was evident from the

very beginning of the planning stage. Unlike his pretest essay data, which was simply organized as a pro-con list, David's planning for his posttest essay – based on “the data, claim, warrant thing” – involved evaluating how convincing each piece of data would be – reasoning that evolved into his warrant. As he listed potential data for use in his essay, David labeled each with a plus or a minus, explaining, “the plusses have more of a reason, and the minuses are just like, little things that like, always happen.” This reasoning led him to make two moves that drove his data production and selection from there. First, David clarified his reasoning, coming up with the warranting principle for his essay – that students should be given a choice about what they eat (his “reason”). He then altered the proposal saying that the snack machine should be placed in the cafeteria to address workability issues (the “little things that like, always happen”). David received the highest score of 6 for warrants on his posttest essay. Although data had to be scored at a 4 because the reader had to make occasional inferences, the quality of his posttest data was greater than that of his pretest.

Thus, although each participant internalized the Toulmin model in somewhat different ways, all four benefitted from the intervention instruction, most notably in the area of warranting arguments and producing data that were more convincing because these data were connected back to claims using the warrants they had generated. Improvements in the quality of their thinking produced improvements in the quality of their writing (Kellogg, 1994).

Limitations of the Study

In reporting the results of the present case study (Stake 1995, 2010), I acknowledge that there are important limitations related to the following components of

the study: a) the sample, b) length of the instructional unit, c) member checks, d) consistency of instruction, and e) analysis of qualitative data.

The Sample

Participants for the present case study were not randomly selected but rather were purposively selected based upon criteria determined by me. Furthermore, participants were enrolled in two intact classes and thus the sample is a convenience sample. Only four participants were selected for this study, thus the sample size was very small and does not permit any generalizations to be made about how sixth-grade students' problem solving strategies are affected by scaffolded instruction in the Toulmin model.

Length of the Instructional Unit

The length of the instructional unit was limited by a number of constraints. I could begin working with participants only after they had completed all mandated state assessments. In the current high stakes testing environment, neither teachers nor administrators would tolerate any loss of instructional time devoted to preparing even a small number of students for these exams. In order to conduct this protocol-based study, I needed to pull students out of regular classroom instruction. Even with state assessments behind them, participants still had important material to learn and grades on the line. It was therefore necessary for me to minimize the amount of regular instructional time missed. Pragmatic considerations thus limited me to a total of six weeks to conduct the study with access to participants not to exceed one hour on any given day. After working out times to interview students about their survey responses, have them do a practice expository piece to get used to composing under protocol conditions, administer pre- and posttest protocols, and discuss their independent essays,

this left only four weeks to provide the intervention instruction (see Table 5 above, p. 166).

Member Checks

Member checks are a very important tool in ensuring the accuracy of qualitative research data. Although I was able to conduct member checks for written products (pretest, posttest, and independent essays), due to time constraints I was not able to do so for protocol transcripts. Doing member checks for the essays ensured that I had read and transcribed these written products accurately. This boosts the credibility of the scoring I conducted with the co-rater for the present study. Most of the data related to problem solving, however, came from protocol transcripts. I was not able to verify with participants what they said much less what they meant. It is possible that there were errors in the transcription and interpretation of protocol data that could have been remedied with member checks.

Consistency of Instruction

As a veteran classroom teacher, I know well that the instruction I provide can vary from day to day, from class to class, and even from student to student. Although intervention protocols and materials used in instruction were uniform, I may have been inconsistent in delivering instruction. Aware as I was of the need to be consistent and having endeavored to provide identical instruction to all participants using the same materials, due to the nature of the investigation – a examination of how individual writers problem solve in zones of proximal development created in collaboration with me – what transpired in the course instruction and participation in the intervention protocols varied depending on the knowledge participants possessed and the directions they led as they

generated ideas and composed their drafts. As a consequence, the instruction was not uniform, and it is possible that a participant or participants may have been advantaged or disadvantaged by these potential inconsistencies.

Analysis of Qualitative Data

Inconsistency may also have affected interpretation of data from this case study. All data collected in this study was verbal data gathered from interview responses, intervention protocols, and essays composed by participants, all of which may leave findings open to the assertion that they are subjective and/or that, despite efforts on my part to differentiate between pre-existing strategies and strategies gained as a result of the intervention, the effects on the problem-solving strategies used by participants while composing independent and posttest essays could be attributed to sources other than the intervention instruction. In an effort to address these factors, I consulted with an expert panel in creating instructional materials and protocol scripts, and made use of an independent co-rater in analyzing protocol transcripts. Nevertheless, the possibility that there were inconsistencies in conducting protocols, segmenting and interpreting transcripts, and scoring essays must be acknowledged.

Comparison of Results to Previous Research

In Chapter 2 of the present study, I rehearsed research on the argumentative writing capabilities of secondary students. These studies fell into three major categories – NAEP writing studies, product-oriented Toulmin-based studies, and process-oriented Toulmin-based studies. I now briefly revisit the most relevant of findings of these studies in the interest of providing some context for the results of the present study.

Comparison of Results to NAEP Writing Studies

NAEP writing studies from 1998, 2002, and 2007 all revealed that only a small percentage of twelfth grade students could write essays achieving an “excellent” rating. The 2011 administration revealed a similar finding, but due to differences in how it was assessed, direct comparisons to previous administrations could not be made (National Center for Educational Statistics, 2012). In addition to requiring a writer to take “a clear position and support it consistently with well-chosen reasons and/or examples,” Persky, Daane, and Jin (2003), authors of the 2002 NAEP writing assessment, reported that only essays that addressed opposition received “excellent” ratings. Scores in the “excellent” range for twelfth graders for these years ranged from 3% to 9%. Largely due to their sophisticated understandings of argument, Ann and David, aware that they were obligated to address opposition, achieved “excellent” ratings on their posttest essays. David was able to accomplish this even on the pretest with Ann very near to this level, scoring a 5 (“Skillful Response”) on her pretest. Jessica and Brian also showed improvement from the pretest to the posttest according to the NAEP (2007) rubric. Jessica, who scored a 3 (“Uneven Response”) on her pretest, managed to score a 4 (“Sufficient Response”) on both her independent and posttest essays. Brian improved from a 1 (“Unsatisfactory Response”) on his pretest essay to scores of 3 (“Uneven Response”) on his independent essay and 4 (“Sufficient Response”) on his posttest essay. I believe that Jessica and Brian’s improved performance on the NAEP (2007) scale is largely due to the intervention instruction. Although neither writer addressed opposition on the posttest essay (although both did so minimally on the independent essay), Brian made great progress in taking a clear position, and both Jessica and Brian improved the

quantity and quality of their data as well as including warrants, or, in the language of the NAEP rubric, they provided the reader with “some pertinent reasons and/or examples” which they were then able to develop.

It would appear, then, that Ann and David would be likely to maintain the high overall quality of their argumentative writing and would probably be among the relatively small percentage of twelfth graders scoring in the “excellent” range as they neared the end of their public school careers. Jessica and Brian appear to me to be solidly on the path to reaching the “skillful” level as they progress through school, and, should they receive further instruction in argumentative writing that supports them in all facets of handling audience related task demands and continue to evolve more effective schemas for argumentation, seem very capable to me of likewise reaching the “excellent” level. All four participants benefitted from the intervention instruction in that it provided them with a means of generating warrants and using warrants to synthesize data and claims.

Comparison of Results to Product-Oriented Toulmin-Based Studies

The present study was largely inspired by the work of researchers carrying out product-oriented Toulmin-based studies (Crammond, 1998; Knudson, 1992; McCann, 1989), all of whom concluded that the sixth-graders participating in their studies struggled with audience related task demands, most notably warranting arguments (also noted by Burkhalter, 1995). McCann (1989) undertook a study of grade level differences of the argumentative writing capabilities of 6th, 9th, and 12th grade writers. Based on an analysis of the data from his study, McCann discovered that although students at all grade levels appeared to possess a high degree of knowledge about arguments and could readily state claims, they struggled to provide supporting data and opposition, and among sixth-

graders, the use of warrants was “almost non-existent.” McCann asserted that in order to improve students’ argumentative writing abilities, researchers and practitioners “need to think about ways to instill in students an awareness of the needs of the audience and an ability to be self-critical in developing support” (p.71). The sixth-grade participants in the present study resembled those taking part in McCann’s study in all respects. As a consequence of the intervention instruction in the Toulmin model, however, all four participants were able to include a warrant in their independent and posttest essays suggesting that the Toulmin model supported them in developing a more efficient schema for argumentative writing, one that not only made them aware of audience related task demands, but also provided them with a means of being “self-critical in developing support” in formulating effective supporting data and warranting arguments.

Knudson (1992) also compared the performances of students at different grade levels (4, 6, 10, and 12) on argumentative writing tasks. Knudson’s study was designed to build on McCann’s (1989) study. She had participants in her study write letters to a school principal taking a position on proposed changes to school policies. In addition to using McCann’s (1989) Toulmin-based rubric, she also assessed the holistic quality of participants’ essays using a NAEP persuasive rubric identical the rubric used in the present study. My decision to measure both holistic quality of essays as well as assessing them for the presence and quality of Toulmin model elements was inspired by Knudson. As did McCann, Knudson found that students at all levels “experienced difficulty with argumentation and persuasion.” Knudson’s participants, like McCann’s, could state claims but generally did not support them with sufficient data, did not connect data back to claims using warrants, and rarely made any effort to address opposition. Knudson’s

participants also resemble the four sixth-grade writers I worked with in that they, too, could state claims and provide some data, but they could not warrant arguments prior to the intervention instruction in the Toulmin model. Knudson's recommendations influenced the design of the present study. She first called for researchers and practitioners to clarify the connections between argumentative writing capabilities and logical thinking skills. She furthermore suggested incorporating discussion into argumentative writing instruction, and taking steps to increase students' awareness of audience. Through the intervention protocols, I endeavored to learn about participants' problem solving strategies, engaged them in conversation about writing tasks, and cued them to think specifically about their intended audience in creating a zone of proximal development with each participant (Vygotsky, 1934/1986). Knudson's most important finding, as was McCann's (1989), was that sixth-grade writers cannot warrant arguments. All four participants in the present study *were* able to warrant their arguments in composing both of the essays they produced following the intervention instruction in the Toulmin model.

Crammond (1998) too studied grade level differences in argumentative writing ability (6, 8, 10). That Crammond, as did McCann (1989) and Knudson (1992), also found that participants in her study could not formulate effective warrants strongly influenced my decision to focus on audience related task demands of argumentative writing with a particular interest in understanding why sixth-grade students struggle with audience related task demands, and whether instruction in the Toulmin model could enable participants to more effectively handle these task demands. I was also influenced by how Crammond associated warranting arguments with rhetorical effectiveness, saying

that writers who warrant arguments are “engaging in a type of audience-centered activity that involves recognizing the need to explain or justify the link made between the data and the claim” (p. 250). I thus came to see warranting arguments as a key indicator that a writer has gone beyond knowledge telling – which can be used to produce essays that simply state claims and data – and has engaged in knowledge transforming – a strategy that demands moving back and forth between the problem spaces of content and rhetoric (Scardamalia, Bereiter, & Steinbach, 1984). Again, the intervention instruction in the Toulmin model appears to me to have enabled participants to do what participants in McCann’s (1989), Knudson’s (1992) and Crammond’s (1998) studies could not – generate convincing data and connect that data back to the claim using a warrant.

Comparison of Results to Process-Oriented Toulmin-Based Studies

The two process-oriented Toulmin-based studies that informed the present study are Yeh (1998b) and Lunsford (2002).

The product-oriented studies conducted by McCann (1989), Knudson (1992), and Crammond (1998) introduced me to the use of the Toulmin model as a basis for assessing the quality of argumentative essays, and revealed that secondary students do not write effective arguments, particularly when it comes to the audience related task demands of warranting arguments, providing convincing supporting data, and handling opposition. Yeh’s work presented a convincing argument that the Toulmin model may be used not only as a basis for devising valid assessment rubrics (1998a), but might also serve as a framework for designing effective instruction in argumentative writing with middle school students (1998b). More specifically, Yeh countered the criticism that explicit instruction in heuristics invariably results in “stilted” writing because they restrict writers

and thus lead to essays that adhere too rigidly to the format of the heuristics writers are taught (e.g., SEE). Yeh's two Toulmin-based heuristics, however, were not incorporated into his participants' essays in a rote manner. Rather, Yeh found that all elements were present in the essays but "modified in order and number" thus indicating that participants used these Toulmin-based heuristics "flexibly." Yeh's analysis of posttest interviews indicated that participants "did not merely follow rote procedures but learned to apply the principles underlying the ... heuristics" (p. 71).

Participants in the present study also applied the elements of the Toulmin heuristic I used with them in the same flexible manner. Despite the fact that the evidence of this flexibility for Jessica was limited almost entirely to her protocol, she nevertheless succeeded in generating an effective warrant, although she included it by way of a conclusion in much the same way that she had previously concluded essays guided by the SEE model by simply restating her statement (claim). Brian, Ann, and David, as the excerpts above illustrate, used the elements of the Toulmin model very fluidly to meet their immediate purposes throughout the composing process. Yeh (1998b) noticed in interviews with participants after they had completed post instruction essays a strong movement away from a preoccupation with how they structured their essays and "conventions regarding spelling and punctuation" and toward a focus on "how reasons supported or were connected to the claim." I noted a similar shift in the pretest and posttest intervention protocols of participants in the present study. Prior to the intervention instruction, all four participants viewed the task of writing an argumentative essay as being largely about meeting all of the requirements of the SEE model. They stated a position without having generated or thought about data, loaded the data

(examples) into their emerging texts almost exclusively in the order that these ideas had occurred to them, and then, when they had exhausted their ideas, they declared the essay to be complete. After the intervention instruction, they were able to warrant arguments and focused on how effectively the data they generated served the purpose of convincing their intended audience. All four participants viewed the warrant they generated as the means of determining whether data they produced were appropriate for inclusion. On the pretest essay, when their problem solving strategies were limited to knowledge telling, the only criteria they consistently applied was whether potential content was relevant to the topic. Thus, instruction in a Toulmin-based heuristic benefitted participants who took part in the present study in many of the same ways Yeh's participants benefitted from the heuristics he used in his study.

Lunsford's (2002) study of how high school students made meaning of the Toulmin model while in the process of learning how to use it was important to the present study in several ways. First, Lunsford recognized that studies that focus on having participants learn a new approach to problem solving demand that the researcher attempt to account for existing problem solving strategies. I made a connection between Lunsford's study, and Swanson-Owens and Newell's (1994) intervention protocols, which were designed in part to help a researcher differentiate between problem solving connected to an intervention and problem solving strategies attributable to prior instruction and existing writing schemes. Lunsford made the observation that evaluative studies (e.g., those conducted by McCann, Knudson, and Crammond) fail to address "the fact that other writing instruction must mediate Toulmin's model ... Students and teachers ... bring different personal experiences with previous instruction to bear when

they interpret and co-construct the expectations that will apply in a particular classroom” (p. 118), or, in the case of my study, in the creation of a zone of proximal development with each participant. Lunsford’s stated goal in gathering data about each participant’s problem solving processes was to “examine the dialogic uptake of the model, noticing when Toulminian elements displaced, redefined, were displaced by, or were redefined by other writing instruction” (p. 130). Lunsford’s study of participants’ problem solving yielded one finding that was particularly important to the present study – that young writers, who are largely unfamiliar with strategies beyond those associated with knowledge telling, when asked to “articulate their warrants explicitly” found it “difficult” to do so (p. 153). This finding led me to focus on warranting arguments in the intervention instruction. The sixth-graders I worked with, like Lunsford’s seniors, found warranting arguments very challenging, but when they managed to formulate an effective warrant, the reasoning they uncovered that served as an unarticulated set of criteria for evaluating potential data wound up driving the process of data production, and in the case of Ann and David, even led them to alter their posttest claims, taking them outside the material from the prompt to support their entirely original propositions.

Other Possible Explanations for Results

In planning and carrying out the present study, I made every effort to differentiate between strategies participants were applying while problem solving writing tasks that were a part of their existing schemas for argumentative writing (most notably the SEE model which was a daily feature of regular classroom instruction) and strategies they acquired as a result of the intervention instruction in the Toulmin model. I must concede that as thorough as my efforts were, it is certainly possible that some gains in writing

performance may have resulted from sources other than the intervention instruction. I had many opportunities to observe participants receiving instruction in SEE in their RLA classes, but participants also received writing instruction with other teachers in other content areas. Participants may have learned strategies that improved their performance from their RLA teacher or other teachers before or during the course of the six-week period during which I conducted the study. Practitioners and researchers alike have long been aware that novelty, and the motivation that often accompanies it, can affect a learner's performance. Some improvement in participants' performances may have been due to the novelty of taking part in the study and may not be attributable to the problem solving strategies I taught them. Finally, the intervention instruction and protocols introduced a considerable amount of dialogue into each participant's composing process – a process that is generally carried out without an interlocutor. The interaction and prompting associated with the intervention protocols may have accounted for some of the gains participants exhibited on their posttest essays. Even the independent essay, having been written immediately following the intervention instruction, may have been supported by recent conversations I had with participants. It is entirely possible that participants' gains would have decreased following the study but I did not collect any data at any time after the conclusion of the study.

Recommendations for Future Research and Practice

The results from the present case study suggest that secondary students could benefit from scaffolded instruction in the Toulmin (1958/2003) Model of Argument. In order to handle the complex task demands of argumentative writing, particularly those related to audience, secondary students need to go beyond strategies associated with

knowledge telling and thus require instruction in heuristics that support them in knowledge transforming. Such instruction can become a reality only if practitioners abandon the ineffective instructional practices that dominate our nation's classrooms that have been described by Pritchard and Honeycutt (2006) as comprising a "simplistic pedagogy" that is "linear and prescriptive," (p. 276), and denounced by Schultz (2006) as "formulaic" and concerned with "the teaching of writing merely as a skill" (p. 359). In light of the findings of the present study, I would make the following suggestions for future studies:

1. The intervention instruction in the Toulmin model should be refined in the interest of making it more effective in helping students handle the audience related task demands of argumentative writing. I believe that instruction addressing the components of the Toulmin model I focused on in the present study could be improved, and participants in future studies should also learn about other aspects of the model, especially qualification and backing as these components are related to the handling of opposition – an area of argumentative writing in which the two average ability participants showed little improvement.
2. Once the Toulmin model instruction has been refined, quantitative methods should be used to study a sufficiently large number of participants to permit claims of significant findings to be made.
3. Whole classes of students should be studied. In addition to providing larger numbers of participants, and therefore more significant and generalizable findings, such studies would also present practices that could be more

realistically implemented in classrooms. I am well aware that regular classroom teachers do not have the time and access to individual students to study their problem solving as I did in the present study. Creating zones of proximal development with individual learners should be replaced with whole class instruction. Such studies could include interviews with a small number of participants to gather detailed data on how certain cases problem solved, and this finely grained data could serve the purpose of shedding light on the effectiveness of teaching practices that have the potential of positively impacting large numbers of students.

4. A wider range of participants should be studied both in terms of age/grade level and in terms of ability.
5. If pragmatic considerations allow, it would increase the validity of the findings if participants could perform member checks on intervention protocols as well as essays.
6. If pragmatic considerations allow, it would be enlightening to study changes to participants' problem solving processes over a longer period of time – a semester or perhaps even a year – as opposed to a mere six weeks as the present study did.

Closing Remarks

In conducting this case study, I have attempted to contribute to existing lines of inquiry about how young writers problem solve argumentative writing tasks. I chose to focus on four sixth-grade writers in the interest of gaining a detailed understanding of how young writers who are still reliant on knowledge telling strategies can learn a

heuristic that facilitates knowledge transforming and incorporate such a heuristic into their existing schemas for argumentative writing. I endeavored to achieve this understanding for the purpose of refining the intervention instruction in the Toulmin model and implementing this effective instruction in my own teaching as well as supporting colleagues in adopting these practices. I would also like to conduct further research into the effects of scaffolded instruction in the Toulmin model on the argumentative writing capabilities of secondary students. The results of the study suggest that the intervention instruction in the Toulmin model enabled the four sixth-grade writers who participated in the study to more effectively handle the audience related tasks demands of warranting arguments and providing readers with convincing supporting data. By instructing learners in all facets of the model – especially qualification and backing – I believe that young writers will also be able to improve their handling of opposition.

In concluding the present study, I would like to return to an observation made by Bruer (1993) which, in part, inspired this study:

Many if not most students have difficulty using what they know to interpret an experiment, comprehend a text, or persuade an audience. They can't rise above the rote, factual level to think critically or creatively. They can't apply what they know flexibly and spontaneously to solve ill-structured, ambiguous problems that require interpretation (p. 5).

In the field of writing, progression from knowledge telling to knowledge transforming strategies represents very well this movement from less mature to more mature strategies that permit young learners to “rise above the rote, factual level to think critically or creatively” and “apply what they know flexibly and spontaneously to solve ill-structured, ambiguous problems” (and argumentative writing tasks are certainly ill-structured and

ambiguous). I set out to determine if, and to what extent, scaffolded instruction in the Toulmin model would affect the problem solving strategies of four sixth-grade writers. I believe the findings of this study indicate that the potential of the Toulmin model to improve the argumentative writing abilities of our nation's school students warrants further research. Given the importance of arguing effectively in academic, professional, personal, and social contexts, it is the obligation of every educator to provide all of our nation's students with the best possible instruction in this most indispensable capability.

Appendix A

Constructed Passages (McCann, 1989)

Food

The food in our school cafeteria should be improved. We should have a wider selection of food to choose from. The students want foods like stuffed pizza, lasagna, egg rolls, tacos, cheeseburgers, and fried chicken. The atmosphere in the cafeteria should be improved to make it more cheerful. Students like colorful murals and posters of rock stars and lots of hanging plants. These are all valuable recommendations. The administration of the school and the school board should consider these recommendations as soon as possible.

MCI Center

I went to a basketball game at the MCI Center last December. When the game was over and we left for home, it took us forty-five minutes to get out of the parking lot. There is only one access road from the parking lot to the highway. The thousands of fans, with their thousands of cars, all tried to enter the same access road at the same time. On the night we were there, it started to snow after the game, which made traffic move even slower, because everyone was trying to be very cautious.

Seat Belts

All automobile passengers should be required to wear seat belts. Many drivers insist that the government should not mandate laws concerning choices regarding personal safety, but automobile deaths and injuries cost everyone money. According to the National Highway Traffic Safety Administration, the injuries resulting from motor vehicle crashes cost the American public \$45 billion annually – in income lost, medical costs, insurance administration, and legal expenses. Many injuries and deaths that could have been prevented with the use of seat belts are costing everyone increases in insurance, medical, and legal costs. The decision to wear seat belts affects all consumers.

Smoking

Cigarette smoking should be banned in this country. My Uncle Ned was a chain smoker. My father remembers that Uncle Ned would get desperate when he ran out of cigarettes. Once they went fishing near Haywood, Wisconsin. They were in a cabin at night far away from any store. Uncle Ned ran out of cigarettes and couldn't sit still. He searched through all his pockets and bags, refusing to believe that he was out of cigarettes. He

finally went out to the pickup and selected some of the longer butts from the ashtray. My father said it was disgusting to watch Uncle Ned smoke the old cigarette butts.

Asbestos

Asbestos should be banned from use as a building insulation material. Exposure to asbestos dust can cause a number of illnesses. As reported by *Public Health Reports* (May/June 1979), exposure to airborne asbestos dust can cause lung cancer and gastrointestinal cancer. In addition, exposure to asbestos dust can cause other lung ailments, like asbestosis and mesothelioma. These illnesses often lead to death. Instead of risking the death of thousands of persons, asbestos insulation should be banned.

Poor

A greater proportion of farm families than city dwellers live below the poverty level. According to Robert A. Liston, author of *The American Poor*, “Twenty-two percent of the nation’s farm population lives in poverty, compared with 18 percent of the rural nonfarm population and about 13 percent of the city dwellers.” If we rely on movies and the television news broadcasts for information about the poor in America, it is easy to assume that most of our poor live in the inner-city; but as Liston points out, many poor families live on farms or in rural communities.

Violence

Violence in city schools has increased. Birch Bayh, former U. S. Senator from Indiana, reports: “In the first five months of the 2004-2005 school year, New York City reported 31 incidents in the schools involving the use of handguns, including shootings and armed robberies. Los Angeles reported 187 incidents involving the use of knives and other forms of deadly but non-firearm weapons on campus.” Bayh’s comments were made in *Viewpoints in Teaching and Learning* in 2006.

Appendix B

Survey and Prompts

Survey Questions

Persuasion

What does it mean to persuade someone?

When trying to persuade someone of something, what does a speaker or writer need to think about? What does he or she need to do?

Think of an experience you have had as a speaker or writer with trying to persuade someone. What did you do that was successful? What could you have done better?

Think of an experience that you have had where someone tried to persuade you. Was he or she successful? What did he or she do well? What could he or she have done better?

Expository Essay – Letter: Succeeding in Middle School

Last year, you were an elementary school student. Now, here you are at ____ Middle School nearing the end of your sixth-grade year. Going to a new school means a lot of changes. There are new people to get to know, a new building to get used to, and new rules to follow.

As someone who has successfully dealt with those changes, write a letter to a fifth-grader you know who will be coming to _MS next year. Think about the many changes you faced this year and how you learned to deal with them. Also, think about the things they most need to know in order to have a successful sixth-grade year at _MS.

Persuasive Prompt – McCann (1989)

Recently, members of the student council at Franklin Pierce Memorial High School held a meeting. They discussed the school's policy which forbids students from leaving the school grounds during the school day. The only students allowed to leave the building are those who have been excused to go home because of some emergency. Some student council members want to change the rule to allow students to leave during the lunch periods. During the meeting, one student pointed out the principal's reasons for the rule. She said that many homeowners who live near the school are afraid that their property will be damaged. In addition, students might be injured when they are away from school. Some students insist that they are old enough to leave the building on their own. They claim that the things that the principal is worried about would never happen.

Imagine that you are a member of the student council. Write a letter to the school principal. Explain whether or not students should be allowed to leave the building during lunch periods. Be sure to consider all possible reasons in support of your position. Explain each reason fully.

Persuasive Pre-Test – Letter: Gum (Based on McCann, 1989)

As the principal at _____ Middle School, Mr. H_____ wants to create the best school possible. Imagine that Mr. H_____ has just formed a student council at _MS so that students get to say what they think about school rules. You have been selected to be a member of the student council.

At the first meeting of the student council, students decided to talk about the rule against gum chewing. Some student council members said they wanted to change the rule to allow students to chew gum during their lunch period. This new rule would not allow students to chew gum outside of the cafeteria. As soon as lunch time was over, students would have to throw away their gum. Students said that they wanted to be allowed to chew gum after lunch because they don't have time to brush their teeth and chewing gum would get rid of any bad breath resulting from having just eaten. One student who spoke to Mr. H_____ about the no gum rule said that he had many reasons for having the rule. She said that according to Mr. H_____, when he was a vice-principal at another middle school that did not have a strict no gum rule, many teachers at that school found gum under desks, on floors, in water fountains, and stuck to the bottom of trash cans. Custodians spent a lot of time removing gum instead of doing other work to improve the school environment. Mr. H_____ said that gum chewing led to a lot of problems at the other school – problems that he did not want to see happen at _MS.

Some students responded to Mr. H_____’s reasons for the no gum rule by saying that the things Mr. H_____ is worried about would not happen.

Imagine that the student council has asked you to write a letter to Mr. H_____ explaining whether or not you think students should be allowed to chew gum during their lunch period. Be sure to consider all possible reasons in support of your position. Explain each reason fully.

Persuasive Posttest – Letter: Snack Machines (Based on McCann, 1989)

The snack machine by the _MS gym is not turned on until 4:00 p.m. on schooldays. Many students at _MS said they would like Mr. H_____ to turn on the snack machine in the morning and at lunch time, and to open the cafeteria before school for students to eat food purchased from the machine. Some students say this is a good idea because they don't have time for breakfast and sometimes forget their lunch. The student council has decided to meet to discuss a proposal that the snack machine be turned on before school and during lunch periods.

At the student council meeting, one member said that he spoke to Mr. H_____ about the proposal. He said that Mr. H_____ was against turning the snack machine on during the school day for many reasons. First, Mr. H_____ believes students are responsible for taking care of their food needs. They should eat a good breakfast before they come to school, and should pack or buy a nutritious lunch. Mr. H_____ thinks too many students would choose to eat junk food from the snack machine if it was available to them. In addition, Mr. H_____ is worried that students would take food from the snack machine and eat it in class or other places in the school. This would create discipline problems and messes for staff to clean up. He also did not want staff to have to supervise

the cafeteria in the morning, and turn the machine on and off, just so students could get food from the machine. Mr. H____ also said there is too much bullying at _MS and he did not want some students bullying others for snack machine money.

Many students said that they were in favor of the snack machine proposal. They said that they sometimes were too rushed to eat breakfast or forgot to bring a lunch, or enough money to buy a lunch. They felt that learning is hard to do on an empty stomach, and having something to eat is better than nothing. One student said that if students could buy food from the snack machine, she thought it would cut down on the number of kids who go to the office to borrow lunch money. Many students also said they liked having a choice about what to eat, and that bullies would bully other students for money whether the snack machine is on or not.

Imagine that the student council has asked you to write a letter to Mr. H____ explaining whether or not you think the snack machine should be turned on during the school day. Be sure to consider all possible reasons in support of your position. Explain each reason fully.

Persuasive Independent Essay – Letter: School Uniforms (Based on McCann, 1989)

The _____ County Board of Education is considering a proposal made by several middle school principals that all middle school students wear school uniforms.

At a meeting of the student council, students decided to talk about the school uniform issue. The student council president spoke to Mr. H____ about the school uniform proposal and said that Mr. H____ was in favor of students at _Middle School wearing uniforms for many reasons. First, Mr. H____ felt that a lot of students at _MS were wearing t-shirts that sent negative messages. In addition to sometimes catching students wearing t-shirts that advertised alcohol or tobacco products, which is strictly forbidden by the dress code, he found many students wore shirts that sent violent or insulting messages. Mr. H____ also said he was tired of teachers and administrators spending so much time and energy dealing with students who violate the dress code. He felt that if students wore uniforms, it would be easier for everyone to focus on learning because all students would be viewed as equals by teachers and other students.

Many students said that they were against the idea of wearing school uniforms. They felt that t-shirts could send positive messages as well as negative ones. They also said that they thought it was wrong for all students to give up their freedom to express themselves through their clothes just because some students were irresponsible. Some students said that no matter what the dress code is, students will try to find ways to violate it. Some would just be trying to express themselves, and others would simply be rebelling, but either way, even if there was a school uniform, teachers and administrators would still have to deal with dress code violations.

Imagine that the student council has asked you to write a letter to the School Board President, Mr. T____, explaining whether or not you think middle school students should wear uniforms. Be sure to consider all possible reasons in support of your position. Explain each reason fully.

Appendix C

Expository Intervention Protocol (Based on Swanson-Owens & Newell, 1994)

Pre-Composing Prompts

1. What does this prompt ask you to do?
2. What are some things that come to mind about this topic?
3. Who do you think of as your audience for this essay?
4. What do you think they already know about _____? (Things mentioned by subject in #2)
5. What are your goals? What are you trying to accomplish by writing this essay?
6. What do you think you will have to do in order to achieve your goals?
7. What would you like to do first?
8. How do you plan to do that?

(Instruct subject to do whatever planning he or she wishes to do, then **begin** writing.)

(The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)

Composing Prompts

1. What you have tried to say so far?
2. What goals have you met so far?
3. What are you going to write about next?

Post-Composing Prompts

1. Now that you are finished, what do you think of your essay?
2. Looking back at your goals, how well do you think you accomplished each one?
3. Is there anything else about _____ (topic) that you think that you should explain to your audience?

Appendix D

Argumentative Intervention Protocol (Based on Swanson-Owens / Newell, 1994)

Pre-Composing Prompts

1. What does this prompt ask you to do?
2. What are some things that come to mind about this topic?
3. Who do you think of as your audience for this essay?
4. What do you think they already know about _____? (Things mentioned by subject in #2)
5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting?
6. [If so], what are they and why might your audience have difficulty with them?
7. What are your goals? What are you trying to accomplish by writing this essay?
8. What do you think you will have to do in order to achieve your goals?
9. What would you like to do first?
10. How do you plan to do that?
11. How will you come up with your statement?
12. How will you come up with examples that support your statement?

(Instruct subject to do whatever planning he or she wishes to do, then **begin** writing.)

(The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)

Composing Prompts

1. What you have tried to say so far?
2. What goals have you met so far?
3. What are you going to write about next?
4. What examples have you written about that support your statement?
5. How does that example support your statement?

Post-Composing Prompts

1. Now that you are finished, what do you think of your essay?
2. Looking back at your goals, how well do you think you accomplished each one?
3. Do you think that your statement addresses the prompt?
4. Have adequately supported your statement with examples?
5. Did you explain how each of your examples supports your statement?
6. Do you think you have succeeded in persuading your audience to accept your statement?
7. Is there anything else you can do to convince them?

With the exception of a few additional questions generated by the researcher, the intervention protocol questions above have been taken, either verbatim or with minor modifications, from Swanson-Owens, D., & Newell, G. E. (1994). Using intervention protocols to study the effects of instructional scaffolding on writing and learning. In P. Smagorinsky (Ed.), *Speaking about Writing: Reflections on research methodology* (pp. 141-162). Sage Publications.

Appendix E

Scoring Criteria – NAEP Holistic Persuasive Rubric (1998)

1. **Unsatisfactory response** (may be characterized by one or more of the following)
 - Attempts to take a position (address topic), but position is very unclear OR takes a position, but provides minimal or no support; may only paraphrase the prompt.
 - Exhibits little or no apparent organization.
 - Minimal or no control over sentence boundaries and sentence structure; word choice may be inaccurate in much or all of the response.
 - Errors in grammar, spelling, and punctuation severely impede understanding across the response.
2. **Insufficient response** (may be characterized by one or more of the following)
 - Takes a position but response is very underdeveloped.
 - Is disorganized or unfocused in much of the response OR clear but very brief.
 - Minimal control over sentence boundaries and sentence structure; word choice may often be inaccurate.
 - Errors in grammar, spelling, and punctuation interfere with understanding in much of the response.
3. **Uneven response** (may be characterized by one or more of the following)
 - Takes a position and provides uneven support; may lack development in parts or be repetitive OR response is no more than a well-written beginning.
 - Is organized in parts of the response; other parts are disjointed and/or lack transitions.
 - Exhibits uneven control over sentence boundaries and sentence structure; may exhibit some inaccurate word choices.
 - Errors in grammar, spelling, and punctuation sometimes interfere with understanding.
4. **Sufficient response**
 - Takes a position and supports it with some pertinent reasons and/or examples; there is some development.
 - Is generally organized but has few or no transitions among parts.
 - Sentence structure may be simple and unvaried; word choice is mostly accurate.
 - Errors in grammar, spelling, and punctuation do not interfere with understanding.
5. **Skillful response**
 - Takes a clear position and supports it with pertinent reasons and/or examples through much of the response.
 - Is well organized, but may lack some transitions.
 - Exhibits some variety in sentence structure and uses good word choice; occasionally, words may be used inaccurately.
 - Errors in grammar, spelling, and punctuation do not interfere with understanding.
6. **Excellent response**
 - Takes a clear position and supports it consistently with well-chosen reasons and/or examples; may use persuasive strategy to convey an argument.
 - Is focused and well organized, with effective use of transitions.
 - Consistently exhibits variety in sentence structure and precision in word choice.
 - Errors in grammar, spelling, and punctuation are few and do not interfere with understanding.

Appendix F**Scoring Criteria – Toulmin/McCann (1989)*****Claims***

- 0 No claim related to the proposition or topic.
- 2 The writer makes generalizations that are related to the proposition or topic, but the assertions lack specificity or offer unclear referents. The writer leaves much for the reader to infer in order determine the impact of the claim.
- 4 The writer states generalizations that are related to the proposition or topic, but the assertions are not complete. Enough information is available to figure out the writer's intent, but much is left to the reader to determine.
- 6 The writer states generalizations which are related to the proposition and which are clear and complete.

Data

- 0 No data are offered or the data have no relevance to the claim.
- 2 The data that are offered are weak, inaccurate, or incomplete. Examples may include the following: (a) an attempt at using a general principle without establishing the truth of the principle; (b) the use of examples from personal experience that are not generalizable; (c) the citation of data when no source is identified; (d) the use of obviously biased or outdated material.
- 4 The data that are offered are relevant but not complete. The writer leaves much for the reader to infer from the data. The writer may have offered the data without the complete citation which would allow the reader to determine the reliability of the data as evidence. The writer may offer data which are not complete enough to allow the reader to determine their significance.
- 6 The supporting data are complete, accurate, and relevant to the proposition.

Warrants

- 0 No warrant is offered.
- 2 An attempt is made to elaborate about some element in the data. The attempt suggests that the writer recognizes a need to connect the data to the claim, but the writer fails to make the connection.
- 4 The writer explains the data in some way, but the explanation is not linked specifically to the claim.
- 6 The writer explains the data in such a way that it is clear how they support the claim.

Propositions

- 0 No relevant proposition is stated.
- 1 The writer states a proposition which does not directly address the issues. No particular policy or action is proposed.
- 2 The proposition is relevant to the issues but is not complete or clear.
- 3 The proposition is clear and specific and is relevant to the issues that the writer has identified.

Opposition

- 0 The writer offers no recognition of opposition.
- 1 The writer vaguely implies the existence of some opposition.
- 2 The writer identifies opposing arguments, but these reservations are not specific.
- 3 The writer systematically identifies the opposition and the opposing arguments.

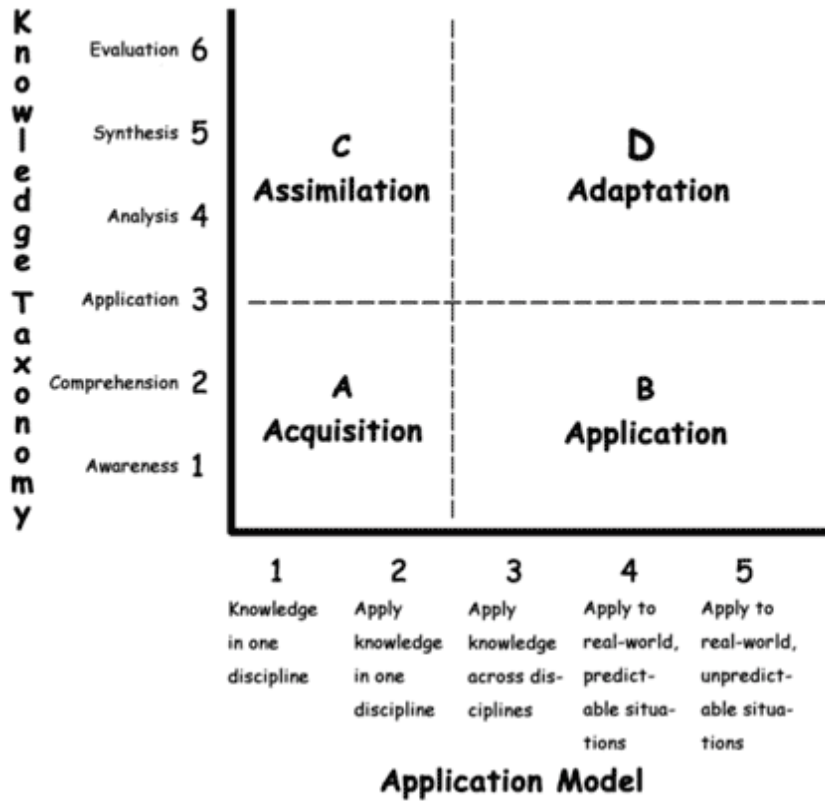
Response to Opposition

- 0 The writer offers no response to opposing arguments.
- 1 The writer vaguely addresses some implied opposition, or the writer weakly denies whatever the opposition claims.
- 2 The writer offers responses which address the opposing arguments which are identified somewhere in the composition. Much is left to the reader to link the counterargument to the specific opposition.
- 3 The writer states counterarguments which directly address the opposition and which are clear and complete.

Appendix G

Daggatt's Rigor-Relevance Framework

RIGOR/RELEVANCE FRAMEWORK



Appendix H

Coding Scheme for Intervention Protocols

Description of Types of Goals (Cherry & Witte, 1994)

Content – “plans for generating ideas or content”

Procedural – “tell the writer what to do next” or “specify a multilayered plan for approaching the whole writing task”

Rhetorical – “set out various relationships among ... reader, writer, content, and text”

Description of Levels (“Knowledge Taxonomy – Rigor/Relevance Framework,” Daggett, 2004)

1 Knowledge/Awareness – Comprehension

Content, Procedural, and Rhetorical goals are based upon, and largely or entirely limited to, material from the prompt.

2 Application – Analysis

Content, Procedural, and Rhetorical goals refer directly or indirectly to material from the prompt, but demonstrate some extension in the form of application and/or analysis.

3 Synthesis – Evaluation

Content, Procedural, and Rhetorical goals may directly or indirectly refer to material from the prompt, but are based largely or entirely upon information from the writer’s long-term memory.

Appendix I: Coded Intervention Protocol Tables

Coded Responses to Pre-Test Intervention Protocol Questions – Jessica

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p>	<p>1C¹ 1C², 2C³, 2C⁴, 2C⁵, 2C¹² 1R⁶ 1R⁷</p> <p>1R⁸, 2C⁹, 2C¹⁰, 1CR¹¹</p> <p>1CR¹³, 1R¹⁴, 2C¹⁵, 1CP¹⁶, 2CR¹⁷</p> <p>--</p> <p>--</p> <p>2R¹⁸, 1P¹⁹ 2CP²⁰, 1CR²¹</p> <p>C=15, P=3, R=9, S=0 1=11, 2=10, 3=0</p>
<p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? 	<p>--</p> <p>--</p> <p>-- / 2S²⁷</p> <p>--</p> <p>2S²², 1C²³, 2CR²⁴, 2CR²⁵, 3CR²⁶</p> <p>C=4, P=0, R=3, S=2 1=1, 2=4, 3=1</p>
<p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>--</p> <p>2P²⁸, 1P²⁹</p> <p>--</p> <p>--</p> <p>1R³⁰ --</p> <p>C=0, P=2, R=1, S=0, 1=2, 2=1, 3=0</p>

Total Segments: 30 Level of Complexity 1=14 2=15 3=1
 Agreement: 27 Goal Type C=21, P=5, R=14, S=2

Coded Responses to Pre-Test Intervention Protocol Questions – Brian

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? 	<p>1C³ 1C¹, 2C² 1R⁴ 1C⁵ 2CR⁹ 2CP¹⁰, 2R¹², 2CP¹³, 2P¹⁴, 2PR¹⁵, 2P¹⁶, 2R¹⁷, 2P¹⁸, 2CPR¹⁹ 1CP¹¹ -- 3C⁶, 1C⁷, 3C⁸ --</p>
<p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p>	<p>C=12, P=8, R=6, S=0 1=6, 2=11, 3=2</p>
<p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? 	<p>-- / 2R²³ -- 3R²⁰ 3CR²¹, 3CR²² 3CR²⁴</p>
<p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>C=3, P=0, R=5, S=0 1=0, 2=1, 3=4 -- -- -- 2C²⁵ / -- -- / -- C=1, P=0, R=0, S=0 1=0, 2=1, 3=0</p>

Total Segments: 25 Level of Complexity 1= 6 2=13 3=6
 Agreement: 15 Goal Type C=16 P=8 R=11 S=0

Coded Responses to Pre-Test Intervention Protocol Questions – Ann

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p>	<p>1CP¹ 2C², 2C³, 2C⁴ 1R⁵ 1C⁶, 1C⁷</p> <p>2R⁸, 3CR¹¹</p> <p>2CR⁹, 2CR¹⁰, 1CP¹², 2PR¹³</p> <p>1CP¹⁴, 2PRS¹⁵ -- 2CR¹⁶ 1CP¹⁷, 2CR¹⁸, 2CR¹⁹, 2C²⁰, 1P²¹</p> <p>C=16, P=7, R=10, S=1 1=8, 2=12, 3=1</p>
<p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? 	<p>1R²², 3PR²³, 2CR²⁶, 1R²⁷ -- / 2R²⁹ -- 2CR²⁴, 2CR²⁵, 2R²⁸ -- / 1C³⁰, 1C³¹ C=5, P=1, R=8, S=0 1=4, 2=5, 3=1</p>
<p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>2R³² (Q1&2) --</p> <p>2PR³³ -- / 2CR³⁴</p> <p>-- / --</p> <p>C=1, P=1, R=3, S=0 1=0, 2=3, 3=0</p>

Total Segments: 34 Level of Complexity 1=12 2=20 3=2
 Agreement: 22 Goal Type C=22 P=9 R=21 S=1

Coded Responses to Pre-Test Intervention Protocol Questions – David

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p>	<p>1C¹ 2R² 1R⁴, 2R⁵ 2CR⁶</p> <p>1C⁷, 1C⁸, 2CR⁹, 2C¹⁰</p> <p>2R¹¹, 2CP¹², 3CR¹⁷</p> <p>-- --</p> <p>2CR³, 2P¹³, 1C¹⁵, 2CR¹⁶ 2C¹⁴</p> <p>C=12, P=2, R=9, S=0 1=5, 2=11, 3=1</p>
<p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? 	<p>-- 2CPS¹⁸ 2CR²⁰ / 3CPR³³</p> <p>-- 2RS¹⁹, 3C²¹, 3CR²², 3C²³, 1C²⁴, 3C²⁵, 1C²⁶, 2C²⁷, 2C²⁸, 2C²⁹, 3C³⁰, 3C³¹, 3CP³²</p> <p>C=15, P=3, R=4, S=2 1=2, 2=6, 3=8</p>
<p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>-- --</p> <p>-- -- / 3R³⁴</p> <p>-- / --</p> <p>C=0, P=0, R=1, S=0 1=0, 2=0, 3=1</p>

Total Segments: 34 Level of Complexity 1=7 2=17 3=10
 Agreement: 31 Goal Type C=27 P=5 R=14 S=2

Coded Responses to Posttest Intervention Protocol Questions – Jessica

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p> <p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? <p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>1C¹ 1CR², 2C³, 1C⁴ -- 1CR⁵, 2C⁶, 2C⁷ 1C⁸, 2C⁹ 1CPR¹⁰, 1C¹¹, 1P¹⁷ 1C¹² 2CP¹³ 1C¹⁴ 2C¹³, 2C¹⁶ C=16, P=3, R=3, S=0 1=10, 2=7, 3=0 -- wrote essay -- start to -- finish → no -- opportunity -- to observe 1CR¹⁸, 1CP²² 2PRS²³ -- 1C¹⁹ / 1C²⁰, 2CR²¹ -- / -- C=5, P=2, R=3, S=1 1=4, 2=2, 3=0</p>

Total Segments: 23 Level of Complexity 1= 14 2=9 3=0
 Agreement: 21 Goal Type C=21 P=5 R=6 S=1

Coded Responses to Posttest Intervention Protocol Questions – Brian

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p>	<p>1C¹ 2C², 2C³, 2C⁵, 2C⁶ 1R⁷ 2CR⁸, 2C⁹</p> <p>1C⁴, 2C¹¹</p> <p>2C¹⁰, 1CPR¹², 1CP¹³, 2CR¹⁴</p> <p>2CR¹⁵ -- 2C¹⁶ 2CP¹⁷, 3CPR¹⁸, 2C¹⁹</p> <p>C=18, P=4, R=6, S=0 1=5, 2=13, 3=1</p>
<p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? 	<p>--</p> <p>2CRS²⁶ 2C²², 2CR²³ 3C²⁷ 2C²⁰, 3CR²¹, 2C²⁴, 3CR²⁵, 2CR²⁸, 2CR²⁹</p> <p>C=10, P=0, R=6, S=1 1=0, 2=7, 3=3</p> <p>--</p> <p>--</p> <p>--</p> <p>2C³⁰ / --</p>
<p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>2C³¹ / 2R³²</p> <p>C=2, P=0, R=1, S=0 1=0, 2=3, 3=0</p>

Total Segments: 32 Level of Complexity 1= 5 2=23 3=4
 Agreement: 26 Goal Type C=30 P=4 R=13 S=1

Coded Responses to Posttest Intervention Protocol Questions – Ann

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p> <p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? <p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>1C¹, 2CR² 2C³ 1R⁴ 2CR⁵, 2CR⁶, 3CR⁷, 3CR⁸ 2CR⁹, 1C¹⁰</p> <p>2C¹¹, 3R¹², 3CR¹³, 3CPR¹⁵</p> <p>3CR¹⁴ 2CP¹⁶ -- 3C¹⁷, 3CR¹⁸</p> <p>C=16, P=2, R=12, S=0 1=3, 2=7, 3=8</p> <p>2CR¹⁹, 2CPR²⁰, 2CR²¹ -- -- 2CR²² 3CR²³ C=5, P=1, R=5, S=0 1=0, 2=4, 3=1</p> <p>-- 2CR²⁴, 2CR²⁵, 2R²⁹, 2CR³⁰</p> <p>-- 2CR²⁶, 2CR²⁷, 2R²⁸, 3R³¹</p> <p>-- / --</p> <p>C=5, P=0, R=8, S=0 1=0, 2=7, 3=1</p>

Total Segments: 31 Level of Complexity 1= 3 2= 17 3= 10
 Agreement: 22 Goal Type C=27 P=3 R=25 S=0

Coded Responses to Posttest Intervention Protocol Questions – David

Intervention Protocol Questions	Type of Goals Prompted For
<p><u>Pre-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What does this prompt ask you to do? 2. What are some things that come to mind about this topic? 3. Who do you think of as your audience for this essay? 4. What do you think they already know about _____? (Things mentioned by subject in #2) 5. Do you think that there are some issues (mention those already raised by subject) that your audience will have trouble agreeing with or accepting? [If so], what are they and why might your audience have difficulty with them? 6. What are your goals? What are you trying to accomplish by writing this essay? What do you think you will have to do in order to achieve your goals? 7. What would you like to do first? 8. How do you plan to do that? 9. How will you come up with your statement? 10. How will you come up with examples that support your statement? <p>(Instruct subject to do whatever planning he or she wishes to do.) (The subject will give a signal to the researcher at the end of each paragraph or at some other time that they feel ready to talk.)</p>	<p>1C¹ 2CP², 2C³, 2CR⁴ 1R⁵, 2R⁶ 1C⁷, 1C⁸, 1C⁹</p> <p>2CR¹⁰</p> <p>2CR¹¹, 2CP¹², 2PR¹⁵</p> <p>-- -- 3C¹⁴ 2CP¹³, 3CR¹⁶</p> <p>C=13, P=4, R=7, S=0 1=5, 2= 8, 3=2</p>
<p><u>Composing Prompts</u></p> <ol style="list-style-type: none"> 1. What you have tried to say so far? 2. What goals have you met so far? 3. What are you going to write about next? 4. What examples have you written about that support your statement? 5. How does that example support your statement? 	<p>-- wrote essay start -- to finish → no -- opportunity to -- observe --</p>
<p><u>Post-Composing Prompts</u></p> <ol style="list-style-type: none"> 1. Now that you are finished, what do you think of your essay? 2. Looking back at your goals, how well do you think you accomplished each one? 3. Do you think that your statement addresses the prompt? 4. Have adequately supported your statement with examples? Did you explain how each of your examples supports your statement? 5. Do you think you have succeeded in persuading your audience to accept your statement? Is there anything else you can do to convince them? 	<p>2R¹⁸ --</p> <p>-- -- / 3CR¹⁹, 2CR²⁰, 2CR²², 2C²³ 2CR¹⁷, 3CPR²¹, 2CR²⁴ / 3R²⁵</p> <p>C=7, P=1, R= 8, S=0 1=0, 2=6, 3=3</p>

Total Segments: 25 Level of Complexity 1=5 2=14 3=5
 Agreement: 17 Goal Type C=20 P=5 R=15 S=0

Appendix J**Intervention Protocol Transcripts****Transcript of Persuasive Task Pre-Test – Jessica**

(researcher gives subject materials, reminds subject she will be asked questions throughout writing of letter, and reads prompt aloud)

W: O.K. So, ah, what does this prompt ask you to do?

[S: Um ... It's asking ... it ... like ... pretty much like my opinion. If that, um, we should allow gum chewing or not allow gum chewing, and um, to explain why or why not.] 1C

W: O.K. Very good. Um, what are some things that come to mind about this topic of gum chewing?

[S: Um ... well, I think no because like, the reasons that they said, like, 'cause the janitors and custodians do spend more time having to clean off gum.] 1C

W: Mm hmm.

[S: And a lot of people are probably just going to say that they're going to throw their gum away but they're not. And they're going to chew it during class.] 2C

W: Mm hmm

[S: And um, I remember that Ms. D. said she didn't care about gum until she stepped in it in the hallway.] 2C

W: Mm hmm

[S: So I'd have that problem too, and it getting on like, binders and lockers, and on the floor and tables and stuff.] 2C

W: O.K. Um, well, who do you think of as the audience for this essay?

[S: Um, Mr. Hill and the rest of the, um, the school, and the, the student council.] 1R

W: O.K. 'Cause it kind of addresses everybody. What are some things, um, that you think ah, Mr., well, let's talk about all of them because you mentioned all of them. Ah, but let's start with Mr. Hill. What do you think Mr. Hill already knows about gum chewing?

- S: Um, he knows that it is probably, that it leads to problems. And um, that he probably knows that some people are going to say they're going to throw it away, but they're not.
And stuff like, they're just not going to take responsible of it ...
- W: O.K.
- S: responsibility.
- W: Um, how about custo-, 'cause you, you said it was also like the whole ... did you say custodians? Or did you just say students and student council?
- [S: Well, now that you say something, it is custodians too because they ... they're the ones who have to clean up all the gum.] 1R**
- W: Right. And how about the students and the student council? What do you think they already know about it?
- S: Um, they probably know that, like Mr. Hill, that some of them are going to be responsible and throw their gum away but some aren't. And they're just going to leave it on a table or not throw it away at all.
- W: Mm hmm. O.K. Interesting. So ... ah, well, I'll tell you what, because it's addressed to Mr. Hill, I think, can we stick with him for now?
- S: Mm hmm.
- W: 'Cause that's who you're writing the letter to.
- S: Yeah.
- W: But I think what's important is, you're right, all these people are gonna be people you have to keep in mind as you're writing this. Um ... Do you think there might be some issues, ah, with gum chewing and the proposal the student council's making about just chewing gum during lunch that you think Mr. Hill might have trouble, ah, agreeing with or accepting?
- S: Say that ... say ... O.K. ... say it again.
- W: O.K. Mr. Hill gets this proposal from the student council. 'Cause you, you know ... they ... he's gonna know what they want to do. They're gonna say, "Hey, we want to just chew gum just during lunch periods."
- S: O.K.

W: What are some things that you think Mr. Hill might have trouble agreeing with or accepting about that idea?

S: Um ... 'Cause if somebody were to say that um, not everybody's gonna be responsible about it and not throw it away then um, he's not gonna be happy about it.

W: Mm hmm.

[S: So that he's not really gonna agree with chewing it in lunch.

W: Mm hmm.

S: He's not gonna, well, allow it at all.] 1R

W: O.K. Good. Um ... I know this is kind of a repetitive question, but can you tell me more about why he would have ... anything else you can think of about why he would have trouble accepting that proposal ... anything else?

S: Um ... Because it's pretty much destroying school property.

W: Oh, O.K.

[S: 'Cause you're sticking gum on somebody else's stuff. And like, other people could put it in, like, people's hair.] 2C

And it could get all over, like, the tables, and, like, throwing it away,

[people could throw it at somebody else,] 2C

and stuff like that.

[Little itty-bitty stuff that leads to big problems.] 1CR

W: Yeah. Have you known of stuff like that to happen ... with gum?

S: Yeah.

W: Yeah, 'cause, I mean, I hear you, like, with tables and floors and stuff, but people really put it in other people's hair and throw it at people?

[S: My sister does.] 2C

W: How old's your sister?

S: Six ... no, she's seven now.

W: Seven? Yeah. And my guess is maybe some people here aren't any more mature than your sister.

S: Yeah.

W: Is that true?

S: Mm hmm.

W: O.K. Alright. Um ... O.K. ... now that we've talked a little about the, the task, um, let's think of it in terms of goals. What are your goals for writing this? What are you trying to accomplish by writing this essay?

[S: Um ... Since I'm writing it to Mr. Hill I would try to accomplish, um, I would try to convince him not to let us chew gum,] 1CR

like at all on school property because, like I said before, there's ... every ... other people's stuff is getting destroyed and ruined.

W: Mm hmm.

[S: And um, like gum is going every-, like pretty much everywhere *but* in the trash can.] 1²R

W: Mm hmm.

[S: And like, people could swallow it and that's just disgusting.] 2C

W: Yeah. Yeah it is. There're some major problems. Um ... In order to achieve your goals, what do you think you're going to have to do here?

[S: Um, I'm really going to have to explain and give good, um, examples why] 1CP

and um, just pretty much like persuade him that, um, we shouldn't be allowed to chew gum in school.

W: O.K. In addition to examples, what are some other things you can think of that would help with persuading him?

[S: Um, to tell him that, like, his stuff could get destroyed and that, like, if he does make a rule, that he can't then, um ... probably a lot of people are still going to, um ... like ... not follow the rule and are still gonna chew gum, 'cause I know people in our class now chew gum.

W: Mm hmm.

S: And they've even admitted it to Ms. Dickensheets] 2CR

but ... and stuff, I, ah, I don't know, I just gotta let him know that we shouldn't be allowed to chew gum.

W: O.K Good. Um ... well, what, what do you think you want to do first with this?

S: Um ... Just say that, like, just at first say that like, I'm going against it, saying that we need, that we should not be allowed to chew gum.

W: O.K.

S: And um, then say ... that ... and then give like, one or two examples, and then, like, hit another topic and then give examples.

W: O.K. Good, Um, ah, how ... if, if we think about this in terms of SEE ... 'cause I know you're familiar with SEE, and I remember you gave me the other day your survey about that ... how would you come up with your statement for, like what would your statement be and how would you come up with it?

[S: Um, my statement would ... probably be, like persuading Mr. Hill, so then, like, as I'm writing it I'd have to keep thinking about that like, like if he were to be like a stubborn person and he'd, he'd come up with an example, like if I said, um ... like, there was gum under a desk, he would say, "Yeah, but we can get it off", or something like that.

W: Mm hmm.

S: Like if he's trying to go back against me ...] 2R

W: Mm hmm.

[S: then I'd have to explain, kind of, more in detail.] 1P

W: Mm hmm.

S: And ... yeah.

W: O.K. Now, you mentioned, um, ah, something about examples with that. Um. What are some ways that you could come up with examples that support your statement?

[S: Um, like, on here they have, like, on your desk and floors and water fountains. Like ... if you could give an example *about* the example or

explanation about it, you could say like, ‘in the water fountains it could clog up the water fountain and then it could overflow] 2CP

and then it hurts ... from one little thing and goes to a big thing.’

W: O.K. So that’s a way you could do, um, and I think you used the word ‘explain’, so you’re gonna kind of then go into more detail about the example.

S: Yeah.

W: O.K. O.K. Um ... good. Um, now, I remember last time you did, ah, you planned, you did a kind of a bubble map kind of thing. How, how would you plan for this, for this thing?

S: Um ... I’m going to list, and I’m gonna list examples of like the desk and the floors and the water fountains. And then, as I’m writing I might go on to it and then like, put like I said for the water fountains, put that, like, if somebody put it in the water fountain then the water fountain could go on the floor, and stuff like that.

W: O.K Good. Well, do you have any other questions about the prompt?

S: Um ... no.

W: O.K. I have one quick question for you before you plan this that I’m just trying to ask everybody, um, ‘cause I know you did a bubble map before. Now you’re talking about listing. What can you tell me about how teachers have taught you to plan? Or ... or how do you plan?

S: Um ... I think last time I said like it depends on like what I’m writing. I can ... you can just kind of think about it like this since it, it wants you give examples and stuff like that and I’d, I’d rather list than do a bubble because a bubble I think more like explaining.

W: O.K.

S: ‘Cause like last time we were doing it to the fifth grader, and then this time, we’re doing it to Mr. Hill, and it’s like more examples than like ... I don’t know how to explain it, it’s just ... you can kind of just like fit it with the, with the prompt.

W: O.K. You think listing works better with this prompt?

S: Mm hmm.

W: O.K. ... O.K. Um ... alright. Well, I will leave you alone to plan. As always, take your time. Do the plan as thoroughly as you want to. And when you feel happy with the plan, let me know. O.K.?

S: O.K.

(subject plans)

S: I have a question.

W: Sure.

S: Um, it gives like three or four examples. I can go on, like, my own examples, too.

W: Oh, certainly ... certainly.

S: O.K.

W: You can use anything from the prompt you want, and then come up with anything else.

S: O.K.

W: I'd also say that if there's something there in the prompt that you don't think is good ...

S: Mm hmm

W: that you don't have to use things from the prompt either.

S: O.K.

W: It's totally up to you.

S: O.K.

(subject resumes work on plan)

S: O.K. I think I'm done with planning.

W: Oh. O.K. Um ... well, tell me a little about, ah, how, ah, how you planned it and what you have, what you have here.

S: Um, I used, I think, all the examples from the prompt.

W: O.K.

S: And then, I kind of thought about, like, if people put it under a desk then it's probably gonna end up on a floor somehow. And then, like, it could end up on other people.

W: Uh huh.

S: And, um ...

W: I know Ms. Dickensheets was not happy about that.

S: Yeah. And um, like on other people's belongings. Like their binder and clothes.

W: Yeah.

[S: And, um, that custodians can't get the real job done. They have to worry about cleaning up the gum.] 1CR

W: Mm hmm.

S: And, um, that people could lie and not follow, like, his rule.

W: Mm hmm.

S: So like ... I kinda go off other things and just think about what would happen, like if people didn't properly throw their gum away.

W: Great. O.K. Um ... because you did it last time, I thought it was so cool, same thing here, if you, if you ah ... as you write, it seemed like last time, as you were writing, new things were occurring to you. You can add them to the plan or not. But I want to encourage you to just include as much in this prompt as you can by way of ideas. 'Cause it says at the end, you know, "Support as much as you can the reasons that you have" or "Give as many reasons as you can." So. Excellent. Well, um, if you're ready to go ahead and write this letter, I'm, I'm ready to let you do it.

S: O.K.

(subject works on letter)

S: So, the kids in the student council were trying to convince ...

W: Um ...

S: him that they wanted to chew gum?

W: Well, they've, they've made a proposal . And I think the idea here is, the kids in the student council say, "We want to talk about this rule." And, um, one of them said, well, Mr. Hill has these reasons for, for why we, you know, we don't have it. So it's, um, it's totally up to you which side of it you want to, you want to take. You get to say "yes" or "no".

S: O.K. So, if I disagree, that means I don't think we should chew gum?

W: Yeah, you're gonna ...

S: O.K.

W: you're gonna say this proposal's a bad idea.

S: O.K.

(subject resumes work on letter)

S: My pencil ran out of lead.

(subject replaces lead and resumes work on letter).

S: O.K. I've got one more and then ...

W: O.K.

[S: Can I keep like, where like it's under a desk, under a table and on fountains all together? 'Cause it's like, the examples of where gum could go?] 2S

W: Well, that's up you.

S: So ...

W: Whatever you, whatever ... This is your letter. However you want to put them together is up to you.

(subject resumes work on letter)

S: O.K.

W: O.K. Um, what have tried to say so far in this letter?

S: Um, I told him that the proposal was not a good idea. And, um, that it should, and then I said, um, I don't like the idea of the gum being chewed at lunch because, and then I gave the, ah, um, example of where the gum could go instead of in the trash can.

W: Oh, O.K. ... Good O.K., um, in terms of goals, what goals do you feel you've met so far?

S: Um, one of my goals was to give him examples of where the gum could go, and I think I accomplished that, because I gave him all my examples of where it could go.

W: Oh, O.K. And how do you feel those examples you gave, um, support the statement?

S: Um, I think they supported it good because ... or *well* or ... however you want to say it because ... my goal was to show, er to give examples, and I gave examples of how it could be on the table and then

[how that, how it may not come off,] 1C

and then how gum could end up being thrown a- ... being thrown ... like *not* being thrown away ...

W: Mm hmm.

S: and, like, them keeping it like for class ...

W: Mm hmm.

S: and then, like, how it could be thrown in water fountains and um, how that could cause an overflow. So ...

W: Mmm ... Mm hmm.

S: I kind of said like, that, one little thing could end up to a big thing.

W: O.K. Yeah. Good ... um, what do you think you might write about next?

S: Um, I think now I'm going to write about it being on other people ... like, being on, um, floors for people, you know, stepping on it ...

W: Mm hmm.

S: and then, like, stuck on other people and their hair and, um, like on other people's belongings ...

W: Good. O.K. ... O.K. Good. Ah, go ahead.

S: Do you want ... So, you want me to start another paragraph, right?

W: Ah, only if that's what you want to do.

S: O.K.

W: If you feel it's a new paragraph, go ahead.

(subject works on letter)

S: O.K.

W: O.K.? So, what have you tried to say in this section?

S: Um, I was saying how gum could be stuck to other people, to their belongings, and um, how people could step on it ...

W: Mm hmm.

S: like, so, kind of like what would happen to the people, if um, gum wasn't thrown away properly.

W: O.K. And, in terms of goals, what goals did you meet in writing about this?

S: Um, my goal was to, um, give more examples, but this time, examples of, um, like what could happen to people, um not just like supplies like in the first one or um, school stuff ... er, school property um, that it could also happen to like, people ...

W: Mm hmm.

S: from gum.

W: O.K., um, so, can you tell me a little about the examples you wrote about and how they support your statement?

S: Um ... my examples, um ... well they're just saying like, that it could be stuck to people's belongings, 'cause

[somebody could just go (*makes throwing gesture*) you know. And think it's a joke.] 2CR

And then

[they could throw it on the floors and think nobody's gonna see it.] 2CR

And um, people could step on that and I don't think Mr. Hill or students would like stepping on gum.

W: Mm hmm. Yeah.

S: And um ...and like if it was stuck on other people's like, belongings that it might not come off.

W: Mm hmm.

S: And, um ... so like if, I ___ to you, 'cause

[if you tell them that they wouldn't be happy if they stepped in it, then they might not throw it on the ground or somewhere because then they could think, like, "If somebody were to throw it and I were to step in it or sit on it or put my hand in it, I wouldn't be too happy."] 3²CR

W: Mm hmm.

S: So ...

W: Sure, that's something that, well, that you as, as, as a student at this school would really like not to have happen to you.

S: Yeah.

W: O.K. Um ... Good. Ah, well, what do you think you might write about now?

S: Um, I think I've, I've wrote everything so I think I might, I *might* add on to this and just put, um ...

[I do just, I do *not* think that the proposal is a good idea.

W: O.K.

S: Or ... cause I don't think that should ... well ... yeah,

I'm gonna put that like in another paragraph all by itself.] 2³S

W: O.K. So is this ... do you see this as being your last paragraph? Are you gonna wrap it up here? Or ...?

S: Yeah. Wrapping it up.

W: O.K. Just out of curiosity. O.K. Go ahead.

(subject works on letter)

S: O.K.

W: O.K. So, ah, what did you say in this little closer here?

S: Um, I just kind of like, 'cause I was always taught that when you do, like, your closing sentence you kind of want to like repeat ... your first sentence ...

W: Mm hmm.

S: 'cause that, out of SEE, that's your statement for the whole thing.

W: O.K. So this is, um ... so how, how did that fulfill a goal that you had?

[S: Um, 'cause that's ... 'cause we used SEE so that was a goal, 'cause that always helps you write better, and um ... this just kind of like, wraps it all up and ties it all together.] 2P

W: O.K. Good. Ah, did you have any exs ... any more examples in there or no?

S: Uh-uh.

W: O.K. ... Um, alright. Well, now that you're done with your little letter here, I want to ask you just a few kind of closing questions. Now that you're finished, what do you think of the letter?

S: Um, I think that it's a very good letter and I think that if Mr. Hill were to read it, he would think about, he would think about these ideas and think "Oh yeah ... What if was on my shoe?" or "What if it was on my desk?" or something like that.

W: Mm hmm.

S: And, um, I think that it is, it *would* convince Mr. Hill that, um, gum shouldn't be allowed in school

W: O.K. Um, again, thinking back on your goals, what were your goals and how well do you think you accomplished each goal?

[S: Um. My goals were to give examples about how to ah, like, persuade Mr. Hill on ah, not letting us chew gum ...

W: Mm hmm.

S: And um ... I think I accomplished them. Wasn't that the second one?

W: Uh-huh. Yeah. How did you accomplish them. Yeah.

S: **Um, I accomplished them because I did ... like I gave my examples and my explanation ...**

W: Uh-huh.

S: **for ... from SEE ...] 1P**

W: Mm hmm.

S: So ... and I gave, ah ... I gave just things, big problems that would end up happening to the school.

W: O.K. Good. Um, ah, do you feel that your statement addressed the prompt?

S: Yes because, um, I was saying that I just ... that I don't like the proposal and then I gave reasons why.

W: O.K. I know some of these questions are a little repetitive. Ah, do you feel that you, that you adequately ... that you adequately supported the statement with examples? Do you feel you had enough examples to really back it up?

S: Yeah.

W: O.K. Do you feel – 'cause we talked about explanation being that last thing in SEE – do you think you did a thorough job explaining how each of those examples relates to or supports the statement?

S: Yeah.

W: O.K. Um ... now here's a more open-ended question. Do you think you succeeded in persuading Mr. Hill to accept your statement, that you think the proposal is a bad idea?

S: Um, yeah because pretty much all these, like,

[in the prompt, it was saying how he wants to make West Middle the like best, or something like that, and um ... but if he lets us chew gum it could not, it's not going to be the best because things are going to be destroyed,] 1R

so ...

W: O.K. Um, now you don't have to add this to your letter or anything, but I'm wondering if now that you're done, and, ah, you've kind of thought about this, is

there anything ... anything else that you can think of that you could do to convince Mr. Hill?

S: Um, what I just said. That, um, since he, he wants West Middle to be the best school, that, um ... now that he, if he were to let people chew gum then it's not gonna be 'cause things are gonna be destroyed.

W: Mm hmm. And that's important to him, right? So, that would kind of be hittin' him where he lives, right?

S: Yeah.

W: Yeah, yeah. O.K. Well, I think we're done then. O.K.?

S: O.K.

Transcript of Persuasive Task Pre-Test – Ann

(researcher reads prompt aloud; invites subject to mark prompt or make notes on plan paper)

W: O.K. Before I have my little kind of prewriting questions do you have any questions about the prompt?

S: No.

W: Or is it all pretty clear?

S: Yeah.

W: Great. O.K. So, um, what does this prompt ask you to do?

[S: Um ... it just asks you to decide, first of all, whether or not you think the gum chewing rule ... whether you're against it or you're with it, and then you have to decide like ... first you've said that, and then you have to give reasons to support your thing like, if you don't, if you think Mr. Hill made a good decision not letting the students chew gum, you explain why the decision was good. If you didn't like it and thought it was bad, you explain why you thought it was bad.] 1CP

W: O.K ... um ... well what are some things that come to mind about this topic of gum chewing?

[S: Well ... my friend and me 'cause we like chew gum and ... ah ... yeah, I mean ... you just ... the rules, you know, I mean ... I mean, I, I've heard teachers talk about why they think that if they see chewing gum they make you throw it out because, um, like, they say that you can sometimes, like, Ms. Dickensheets, like, she got ... um ... it on her shoe ... and it's, it's really sick and, I mean, I think that's why I understand it but still ... the reasons that are brought up in this prompt, like, it gets rid of your bad breath and students would have to throw it away. I mean, I think it's good to have that choice whether you want to do it or not.] 2C

W: Mm hmm

S: And I like that choice,

[but I also think that there might be some problems if they think they can get away with it and just, you know, they stick it instead in their mouths or something so that nobody sees they're chewing it, and then just chew it during class ... then ... they'll get in trouble if somebody sees them] 2C

but, I just don't think ... it's still ... it's good either way because,

[it's nice to have some freedom but ... if people decide to misuse that freedom, things will get really crazy.] 2C

W: O.K. ... um ... well ... Who do you think of as your audience for this essay?

[S: Mr. Hill.] 1R

W: O.K., um, what do you think ...? ... You've talked about a lot of things that come to mind ...

S: Mm hmm

W: um .. about the topic. Um, what are some additional things you think Mr. Hill might already know about this issue of gum chewing that you might want to include in ... when you write this persuasive letter?

[S: Well, he probably knows already since there are some problems ... so, like, you know, obviously some people choose to disobey the rule.] 1C

The gum, the gum somehow gets some places that it shouldn't be besides the trashcan.

W: Mm hmm

[S: So, Mr. Hill has obviously dealt with that and the prompt just said that at another school they allowed it and it just was out of control 'cause gum's like, stuck in places like desks

and ...

I just ... I can't imagine that. I would not want to go to school where gum was stuck on your desk. I mean, that's just sick. (2)] 1C

W: Mm hmm ... yeah ... um ... What do you think ...? ... You, you did say some things that you think that were in favor of chewing gum. What are some things that you might think that you think Mr. Hill would have a difficult time agreeing with or accepting?

S: Well, he probably would have a difficult time just agreeing with the thing because he knows what happens, and that, you know, just during lunch ... he'd say just during lunch ... yeah, some people will be responsible and throw away their gum but others will *not*. And that's true, I think of that, you know. I think it would be good to have that freedom but again like,

[Mr. Hill says, like just going outside ... we have the same rights] 2R

It should be the same thing with gum chewing. If it was allowed that ... if you ... a lot of people abuse those rights to chew gum during lunch and chew it whenever they want during school, then they really, we should not be allowed to do it 'cause it would be getting out of hand.

W: Now were you saying that ... ah ... I wanted to ask you about people going outside. Are some people not allowed to go outside?

S: Well, um, sometimes we aren't allowed to go outside if there's been problems other days ... stuff like that but ... I'm not sure about certain people but, probably.

W: O.K. ... um ... O.K. ... good ...um ... What are your goals? In writing this essay, what are you going to try to accomplish?

[S: Um ... I'm trying to make sure I get my point across loud and clear and that, I have plenty of good reasons. And if I don't, you know, have good enough reasons, I can't just make anything up I want. I really have to *think* ... and I want to make sure I get the right reasons down.] 2³CR

W: Mm hmm

[S: If .. I think I'd be in favor of it ... 'cause I think it would be good, but I'll make the point clear that, if this is in favor of it, I understand completely that if people abuse their rights, we should have them taken away from us 'cause, I wouldn't want our school to get like this school with gum all over the place. If that happens, I would want to stop people being allowed to because ... now, other people think that's unfair, but they just don't mind the fact they have *gum* all over their stuff.] 2CR

W: Yeah, well, since you mention that ... and I forgot to ask you this ... What are some things ... ah, you mentioned that Mr. Hill might disagree with some of the things that you're ...

S: Uh huh

W: thinking about ... um ... I just ...and I thought you really covered the reasons why you thought he would have difficulty with them but I was going to ask you that again to see if there was anything else you might come up with, um, some other reasons why Mr. Hill might have trouble with this idea of 'let's just chew gum during lunch'?

S: Well ... people might ... since lunch is a time to go outside, people might like take it outside and that could involve, you know, running around and stuff I mean ...

[I'm smart so I know that I should not *chew gum* when I'm like, you know, running around, playing football or something, you know ... even if they're not allowed to tackle each other, if you, you know, I don't know, if the ball hits you or something, you could like choke ... with that gum, so you know, that's really risky and you have to make sure like, people don't do that because Mr. Hill probably realized that right away, you know, with us going outside, you know. People will say 'it's your lunch period ... that's when I get to chew gum' but, yeah, I mean, I think there'd definitely be some problems if that was true.] 3²CR

W: O.K. Good. Um .. Well, you've mentioned your goals. What are some things you think you are going to have to do in order to achieve the goals that you have for this?

[S: Well, I'll have to think about all the reasons that I'm in favor or not in favor of it,] 1CP

[and then just, [make sure I really explain them that, alright, so he really understands what *I'm* thinking inside *my* head.] 2PR

W: Mm hmmm

S: So, um, I should just make that really clear so, that way like he'll be able to understand it better and I'll be able to get my point across.

W: O.K. Good ... um ... well ... in writing this essay what would you like to do first?

[S: Um ... I'd like to first say where I stand.] 1CP

W: Mm hmm.

[S: Like, I mean, obviously if I just explain it somewhere in the middle, just tuck it there, he'll just be like 'what was the point of me reading this? I don't know what this person's thinking!'

W: Right ...

S: So I'll have to make sure first that I get that across and then go into more details. Like using SEE basically.

W: Ah ... O.K. ...

S: **Statement, example, explanation. That's ... that's basically what you do anyway with writing ... so, I mean, naturally you have to ... if you want to get your point across, especially with persuasion, you have to say first of all what you think, then you know, say "I think this because" and explain it.] 2³PRS**

W: O.K. ... ah ... Well, these two questions kind of go together. You said kind of pretty much the first thing you want to do is come up with your statement.

S: Uh huh

W: O.K. How would you ... what would you do to come up with that statement?

[S: **Well, I'd think about what my ... where I stand ... I'd think ... "Mr. Hill" ... you know, just something like ... "I want to let you know that ... I am ... I think we should be able to chew gum during lunch. I think it's a reasonable request. But I also believe that with that request, there's some responsibility that we need to make sure we have,] 2CR**

you know, and then explain that, you know, how ... why I think this'll happen though why we ... if that ... if we don't do that, we have to be sure to take that right away from us 'cause otherwise, again, there'd be gum all over the school and I don't think anybody really wants that."

W: O.K. Um, O.K. That's good. So we talked about the statement, and I know that you know that SEE stands for statement, examples, and then, explanation. So how do you think you might come up with examples that support your statement?

S: Um ... just think of a reason like, say ... since I think I'm going to be with it, you know, I might say "I think it's a great idea to chew gum during lunch, but I think you have to make sure that people don't go outside with it", and then, you know, that's basically the statement ... what I'm going to say, and then, example of what I'm going to say, but then I have to explain it and say, "Why? Because people could choke if they're running around and stuff and it would just be very hectic with gum all over, you know, the outside of the school as well as the inside."

W: Mm hmm ... O.K. ... Good ... um ... Well, I guess at this point, I want you to go ahead and do whatever kind of planning you want to do.

S: Mm hmm.

W: I'll ask you just a little bit about that and then, as you remember from last time, I'll just let you start writing, and I'll leave you alone until you come to what you

feel is the end of a section, and then I'll ask you a little bit about each little part of it that you're writing. O.K.?

S: O.K.

W: O.K. Go ahead and plan.

(subject plans)

W: O.K., so, how did you go about planning this?

S: Um ... basically I said that, first of all that, I was with the rule for gum chewing.

W: Mm hmm.

[S: And then I just explained like, you know, you must chew it during lunch, so I need to make sure I have that down.] 1CP

W: Mm hmm.

S: And I put good things and bad things if they happen ...

W: Mm hmm.

S: ... cause really like, with or without responsibility, you know, I put, you know, good things, you know,

[kids will feel "I have more freedom", you know, and they'll get rid of any bad breath, and not many kids will complain about the rules any more probably if they'd be like, 'finally they have something', I mean, ... gum chewing is ... one of the ones, I consider more minor rules ...

W: Mm hmm

S: **I mean naturally all rules all important but ... it's one of the least offensive ...] 2³CR**

W: Mm hmm

S: unless you keep doing it. So, you know, not many kids are probably going to complain about the rules

['cause I bet a lot of people feel, in this school, that, they like chewing gum, they want to *chew* their gum, but they don't see why they can't.] 2CR

W: Mm hmm.

S: So that way they'll have a bit more freedom, that they won't complain as much about not having any.

W: Mm hmm.

S: And also like *bad*, if it happened, you know, there might be gum all over the school, and

**[more people might try chewing gum in class because now they can in lunch,]
2C**

and it's also a choking hazard during recess but ... basically what I did, I did basically gave the examples ... kind of ...

W: Mm hmm.

S: And basically gave an example, you know, let's chew gum during lunch, and a bad thing about it, it's a choking hazard during recess, so basically ... basically

[I'm just putting examples down and then, in the actual letter, I'll explain them.] 1P

W: O.K. Good. Um, are you all ready to write?

S: Yep.

W: O.K. Great. I'll leave you alone to write, and whenever you feel you're done with a little section of it, I'll just ask you a few questions about each section.

S: Mm hmm.

(subject writes first section of essay)

S: O.K., I finished a chunk.

W: O.K. Great. What have you tried to say so far?

S: Um ... I just introduced myself and said like ... 'I'm here to say

[I'm with the student council] 1R

and we should be allowed to chew gum during lunch.'

W: O.K.

- [S: **And then I just, you know, I put, “however I do understand you must have some concerns about that, which I will explain what we will do about”. ‘Cause I thought, yeah this is good because if I just said this is why I think so he’ll be like ‘O.K.’ but he won’t know that I understand he probably obviously has some concerns about it and I’ll say “I want to note that I understand and I will try to explain them in there...”]** 3²PR
- W: O.K. Great.
- S: And then, I also wrote like .. the first reason like ... you know, ‘first of all kids will feel they have more freedom and because of that, you know, I mean, kids won’t complain as much about the rules.’
- W: O.K. Good ... So in terms of goals, ah, what goals have you met at this point?
- S: Well, I’ve met that I’ve got my statement down, so that way I know he knows what I’m gonna talk about.
- W: And you feel good and solid about how you stated it.
- S: Mm hmm.
- W: O.K. Good.
- S: And then I’ve already started to explain some of the good things about it, and then I’m going to finish doing that, and kind of explain some of the bad things that might happen and what we’ll do about them.
- W: O.K., but you think the next section will be about good things?
- S: Yeah. Some more of ‘em.
- W: Is that what’s happening next?
- S: Yeah.
- W: O.K. ... Ah ... Have you written about any examples that support your statement thus far?
- S: Um .. yeah that like, you know, they’ll have more freedom, and so that way, they’ll think that ... they have more fr-, ‘cause they have more freedom, they probably won’t complain, probably won’t complain as much about the rules, especially about gum chewing.

[So back to this one, the one that's more complained about, 'cause, I mean, obviously like, one of the rules, one of the big rules is not bringing any weapons or weapon-like things to school.

W: Mm hmm.

S: **I don't think many people complain about that 'cause they really understand that.] 2CR**

W: Mm hmm.

S: But I think about gum chewing,

[they think, 'it's like food, technically, it's candy. They allow us bring candy to school in our lunches. Why can't we eat gum?'] 2CR

So, now, if I ... you know you, that's one of the things you don't understand, and if they have the chance to chew gum, it's gonna be just during lunch, but they'll probably think, 'we finally got something that actually is reasonable, like a rule that ... I think is reasonable like, you know, have a chance to do.'

W: O.K. That was a real thorough explanation, but I was wondering, is there anything else you can think of about how this example supports your statement?

S: Um ... no, not really. I think I basically explained it.

W: Yeah. O.K. Good. O.K. Go ahead with the next part and let me know when, when you're ready.

S: O-key do-key ...

(student works on next section of essay)

S: O.K.

W: O.K.? O.K. Oh, and I should tell you, I have these questions that I have to ask so ... sometimes you have to forgive me if gets repetitive for you. O.K.?

S: O.K.

W: Well, again, what have you tried to say so far in this section?

S: Well, I tried to finish 'er up and, um, basically I just continued saying that, um, about the good things ...

W: Mm hmm.

S: you know, about, you know, the good ... be able to get rid of bad breath and that way, you know,

[we'll be happier and, of course, that'll make things more enjoyable for teachers ...

W: Mm hmm

S: **they won't have to listen to complaining] 2CR**

... and um, also about all the bad things that might happen, and about if that does happen, obviously we should ... he should change the rule and change it back to not being able to chew gum because, you know, we have to ...

[we'd like to keep our school beautiful and kids safe. So, and I'm sure that's what he would want, and, you know, that's important.] 1R

W: That was an interesting strategy, kind of saying "We'll give it a try, and if not then ..." er ... kind of like, "give us a chance".

S: Yeah, so it's, yeah basically it's like, you know, it's, it's more willing that he would *try* it 'cause it's like, he understands that we're taking responsibility for it ...

W: Mm hmm.

S: and that if you mess up, that he has the right to take it away from us, like anything of course, but he also understands ... knows that we understand that ... and that we just know that it's o.k. if ... if we know if we disobey the rules that we obviously won't be able to do it again.

W: Can you think of an example where he's taken things away?

[S: Um ... yeah, sometimes like, if um, there's some problems during recess like supplies like ... balls and stuff _____, we haven't been able to go outside that day but ... um ... he really isn't that strict, he like gives us a chance to be responsible so, it really isn't much.] 2³R

W: O.K. ... um ... What goals have you met so far?

S: Well, I've met the goals that I wanted to help me, you know, finish explaining and make sure he understands our responsibility, and that we understand that we can have it taken away from us if we abuse it.

W: Mm hmm

[S: And just kind of finish it up saying that, you know, “thank for taking time to read the letter and please consider what I would like.”] 2³R

W: O.K. And you feel at this point you're done, so there's nothing ...

S: Yes

W: that's going to come next.

S: Yes.

W: Ok good. Ah ... maybe I'll go ahead and put these two things together. Um ... what are some examples here, and I know you've mentioned some that support your statement ...

S: Mm hmm

W: and how do they support your statement?

S: Well, um ... basically for all the bad things, I kind of just said that

[people will think they'll be able to chew gum in class which distracts people]
1²C

and it's against the rules.

W: Mm hmm.

S: So that explains itself, but like um, us you know, since recess is part of lunch, some kids might not throw their gum away and play during recess which is a choking hazard.

W: Mm hmm.

[S: And however, then they can make sure kids throw away this gum before going outside, things should be fine.] 1²C

W: Mm hmm.

S: But I basically explain at the end that if any things happen, we should not be able to chew gum any more during recess to keep our school beautiful and kids safe. So, basically, that just explains it that, you know, basically I just tell him all the bad things that happen, some things explain themselves, but that, if that happens,

you know, which ... anything really could happen, you know? So this is just a few things that I thought of that might happen.

W: Mm hmm. Good ... Um, now that you're done, over all, how do you feel about this, this persuasive letter that you've written?

S: I think it's good. I mean, I think I put *my* point across without, you know, doing anything like saying like, you know ... just anything that maybe he just would not see us doing, you know, or anything that he thinks that we would not be able to handle. Basically

[I think he would possibly might agree to it, since he understands that *we* understand ... we ... have responsibility, I mean, like we need to follow it, you know. It's chewing gum and not chewing it when we're not supposed to, it's like any of the other rules. So he might feel like, it's a good choice so that way he sees the good things, you know, people won't really complain and, it would just give them more freedom which I think a lot of people want in middle school now.]

W: Mm hmm.

S: **'Cause, I mean its middle school and obviously we have a whole lot more freedoms, but, you know, maybe just, you know, one thing that a lot of people like.**

W: Mm hmm

S: **So it would be good for the whole school if we could get the choice and we do it right.] 2³R**

W: Mm hmm ...O.K., good ... um ... Do you feel that you that your statement addresses the prompt?

[S: Yeah ... yeah ... I mean like, it just says, you know, just really, it's kind of like saying, "Hi", you know, "this is what I'm going to say". I mean, like, usually that's always what we do, like, you know, you walk up to somebody and want to talk to them about sports or something, it' like, 'Hey what's up', you know, 'I saw this game last night and it was really cool.' I mean, so basically it's the same with writing, you basically, you've just kind of introduced yourself and then you start talking about what your whole point of the letter, or speaking, is.] 2³R

W: Mm hmm ... OK, good... um ... How adequately supported ... er ... do you feel that you've adequately supported your statement with examples?

S: Yes ... I do, I mean ... yeah ... I mean ... like I have, you know, 'however', you know, 'I do understand some concerns that I will explain' which I did. And you know, and things that might happen. And, you know, things that kids would like, just stating, you know, 'first of all kids will feel that they have more freedom, because not many kids complain as much about the rules', you know. Good things, bad things, and ... yeah, I feel like all the statements I've made are adequately sup-... oh gosh ... supported, I guess. Yes. Supported. That works.

W: O.K. Good. Did you explain how each of your examples supports the statement?

S: Yeah. I think so, I mean, especially like, even the beginning statement, 'I'm here to say, I'm with the student council. That you should be able to chew gum during lunch.'

[Everything in there supports it. Nothing says, you know, anything else about it, you know. I'm not trying to fit anything else like, 'Oh, also I think we should be able to do this ...' I think I'm sticking to the statement and not wandering too far off.] 2³CR

W: O.K. Good. Um. Do you think you've succeeded in persuading your audience to accept your statement?

S: Yes. I think so because there's plenty of good things but there's also bad things that, again, which I've said like a million times already, you know it's good for him because he knows we have responsibility and we know how to follow it.

W: Mm hmm. OK ... last question ... yes!

S: Yes!

W: Is there anything else you could possibly do ... 'cause I'm kind of thinking back to the survey ... anything else you can, you could possibly think of that you could do to convince, to convince them?

S: Um ... well I think, something that would be really nice, obviously this is a written prompt, but it also helps if you can talk to the person as well, I think, 'cause there's some things you put down in writing. There's some things, I don't know, that's different when you talk to people. That when you talk to them, there are things you can explain more 'cause, you know, sometimes you can 't just put it down on paper 'cause you're like, "How do I write that down?" Or you write something down that you think, "Well, that kind of explains but I'd need to talk to him to make sure he completely understands what I'm saying." So, I mean, that's the only thing I can think of, I mean. There's probably, I mean, there's a whole lot more like, you know, any-, again, anything can happen, you know. There could be more problems and if I talked to him, you know, he might say, you know, something that he thinks might happen that I didn't think of since he might

have seen it before and I haven't. Then I could explain more what we would do, you know, based on what's happening here.

W: Mm hmm. O.K. ... well, I think we're done.

S: Yea!

W: Thank you so much.

Transcript of Persuasive Task Pre-Test – Brian

(researcher reads prompt aloud to subject)

W: O.K.?

[S: **I think that's right, I mean, if they, if it's disposed correctly, or put in the trash can ...**

W: Mm hmm.

S: **instead of just like, under the table, or something.**

W: Mm hmm.

S: **Then I guess it would be O.K.] 1C**

W: OK...but....

S: But, on our team we get referrals in our agendas if we don't have um, if we have gum 'cause um, [Ms. Dickensheets, she, she had an experience. She, um, she was like walking down the hallway and she stepped in gum, all over her new shoe, so, she got ... really upset about that, and ...

W: Alright.

S: **so they're very strict on Team 2 with gum.] 2C**

W: OK....well that's something you might get that you might be able to think about as you as you do this.

S: Mm hmm.

W: Um...OK, well, do you have any questions about the prompt before I do my questions?

S: Um...no....I'm feeling good.

W: O.K. Um, before I ask them, too, as you can see today, I'm gonna ask you to do something by way of planning.

S: OK.

W: I'll ask you a little bit about how you plan.

S: OK.

W: Ultimately, this is where you're gonna write your response so we won't need to worry about that for a while. OK? And you know I can take this away from you...

S: OK.

W: so you have a little bit more room. If you wanna be able to look at the prompt and the plan at the same...

S: OK

W: ... time that's good too, you won't need this for a little while. OK Uh, what does this prompt ask you to do?

[S: **They are asking us to write a letter to Mr. Hill to state whether if they want gum or not want gum....during their lunch time.] 1C**

W: OK... um, what are some things that come to mind about this topic of chewing gum here at WMS?

S: Um...Well...like I just said the um, like some people might step in gum. But, I mean if they...if they only have it at lunchtime and it is put in the trash can, and not like, thrown or stuck underneath the tables, or on the floor, then I think they should have gum at lunch.

W: OK. Um who do you think of as your audience for this essay?

S: Um...[**Mr. Hill....'cause you're writing a letter specifically to him...**

W: Mm hmm.

S: **to give him reasons why if or not you d... want to have gum.] 1R**

W: OK...Um...What do you think Mr. Hill already knows about this topic?

S: Well, um...[**didn't it say here that they had...they spent a lot of ti-, time like um, like in the other school where he was at, they spent a lot of the time cleaning up gum...?**

W: Mm hmm.

S: **instead of like making the school better?**

W: Mm hmm...Yeah. Well, who ... who was the "they"? Do you remember?

S: The custodians.] 1C

W: Mm hmmm...Yeah. Um...OK. Uh...Now, it sounds to me like, like you're thinking you might write in favor of having gum...during lunch.

S: Yeah, but I mean...**[I'm kinda in between 'cause I mean, there's some other things that can happen when you have gum I mean tha... it canlead to a lot of like um, people like stealing people's gum] 3²C**
and like **[not getting thrown away correctly,] 1C**
and stuff like that so ...even though if it doe-, if it is just at lunchtime then,
[even if the like sixth and eighth graders...do it correctly, it doesn't mean like the seventh grade would, and stuff like that.] 3²C

W: Oh, oh, OK, I like how you're thinking here. What are some things, some additional things, you could think about that Mr. Hill might have trouble with agreeing to or accepting about this idea of chewing gum?

[S: Um...well, if...um, like it's ... if it's thrown away in the trashcan, and not underneath the table, and the custodians don't have to worry about it; all they have to do is like refill the trashcan like, take out the bag, and then dispose of that, if it's just like that then I guess he would say "Yeah" ...

W: Mm hmm.

S: **but probably some kids wouldn't follow that rule; they wouldn't really care...or they, or when they run outside for like the break time...**

W: Mm hmm.

S: **like instead of like playing ball they might like stick it on the trashcan or put it on basketballs and stuff like that....**

W: OK...

S: **so kinda destroy...property.] 2CR**

W: OK...so th...yeah, OK, good. So definitely some problems. Um... uh...as you think about what your goals would be for this what, what goals do you have? What are you trying to accomplish by, by writing this letter to Mr. Hill?

S: Well, I'm trying to accomplish, um, if either I want gum or, I don't want gum in the school at all...

W: Mm hmm.

S: but I mean...what if you're kind of in the middle?

W: Mm hmm.

S: Like I mean, what if you want gum but then bad stuff could happen...

W: Well that's

S:stuff like that

W: ...that's an, that's an interesting question.

S: Can you write that in your letter? Like both sides?

W: You certainly can...

S: OK

W: yeah, um...and, and that's one of the things that, that will be interesting to see is how you try to do both things that, that, that's fine.

(student jots ideas on planning paper)

S: Mmm...

(Long pause – student continues working)

S: OK

W: OK. Oh, just out of curiosity, what did you jot down there?

S: Uh, well I don't know how to spell "opinion." I think it's I don't know.

W: Oh, the-, yeah, do-, don't worry about "opinion." That's fine...

S: Umm...

W: Wha-, wha-, what did you write?

S: I, I can write both opinions...

W: Mm hmmm.

S: ...and, um, that I ca— **[I need to list some bad things and some good things about having gum.] 2CP**

W: Ok...um, well just out of curiosity...

(Announcement interrupts)

W: Can you—can you think of some ways that, that either way you could work in the other side, and that that would actually help you in making an argument?

S: Yeah because...if y--, to making an argument, if you can't, that would be kinda settle both things cause I mean, it, people like that don't want gum wouldn't say like.... Well, that, wouldn't that kind of settle an argument if you have both things in it?

W: Well, yeah, ho--, how do you think it would help settle it?

S: Oh, um, uh, because it has both bad and good things about gum and it's not just from one opinion; it's from both opinions.

W: Mm hmmm. Mm hmmm. OK, yeah, um, um, I'm gonna be interested in seeing how you ...work in both things that's, that's cool. Um...what do you think you'd like to do first here?

[S: Um...I think I wanna start by, um, addressing the letter of why I'm writing to him] 1CP

Is this more of a like a formal letter? It said like the one that we did last y--...

W: I'm not sure what you did wa—was it something that you did last year?

S: N—n—

W: Er...

S: No...um, well, we were talking about persuasive writing last year...

W: Oh, OK.

S: We were talking about like um, like uh different kind of letters. Like if it's a friendly letter or a business letter...

W: I see...

S: ...Wouldn't you kinda consider this a business letter since you're talking to a head boss of a school or something? Instead of just like talking to a fifth grader?

W: I...I ... that seems really reasonable to me, yeah. I, I think there is a difference. 'Cause I guess what you're saying is 'hey, depending on what audience I'm writing to...

- S: Uh huh.
- W: ...that's gonna change how I do certain things in this letter.'
- [S: **Like how you say stuff. You gotta like say more, like um, older stuff like um, like more bigger words instead of just like, telling like a fifth-grader like, he might not, like a fifth-grader might not even know what "comprehend" means and stuff like that like...**
- W: Mm hmm.
- S: **...you gotta use bigger works to sound like you're-- what you're talking about to, um, make him actually kind of think 'cause he'd probably think like he's, they're older and they might be a little bit more responsible and stuff like that.] 2³R**
- W: OK. Good. Yeah. I, I, I think, I think, I think you're right about that...good. Um.... How do you plan to uh... plan?
- S: How do you plan to plan, hmm?
- W: Yeah. How do you, how do you think you're gonna plan this?
- S: Oh. Um...well, **[I think I kinda have the outline of what I need to do. Like I need to list the good things, the...and how it could be, um, good for the school. (1)**
'Cause I mean kids wouldn't be getting referrals left and right for having gum during class because they would already have that need for the gum ...
- W: Mm hmmm.
- S: **...during lunch period...**
- W: Mm hmmm.
- S: **...and so that would be less time of yelling at kids and more time having classwork... and class time...**
- W: Mm hmmm.
- S: **... instead of interrupting class and stuff like that.**
- W: Mm hmmm.
- S: **And then less bad things that could happen.] 2CP**

W: OK. Now when you, when you do plans or when you've been taught to do plans in the past, what are some different ways you've been taught to plan?

[S: **Um, we've been, I've been taught to like, plan like, you gotta take it like in steps and write it down...**

W: Mm hmmm.

S: **... like um Mr. _____ said on the announcements like if you have a big problem you need to take it down by steps and stuff like that.] 2³P**

W: Mm hmmm. OK...good. Um...uh...I had you do a little thing in the survey about SEE.

S: Mm hmm.

W: Are you pretty up to speed on SEE?

S: Umm....

W: Do you remember what it stands for?

S: Yeah, Statement, Example, and Explanation.

W: OK. Uh...

[S: **I guess it's kinda like a formal letter. 'Cause, you'd say like, "Dear Mr. Hill. That, this is a student here. My name is _____. I'm a student here at West Middle School. I, um, I think ... I'm ... I'm in the middle of "we should have gum," or ... something like that.] 2¹PR**

W: Mm hmm.

S: What's another word that I can use for "middle" ... like "in the middle"

W: Hmm

S: ... "between" ...

W: I'm not sure. "Un... unsure"? ... maybe, "undecided"?

S: Yeah, undecided between if we should have gum or not have gum.

W: Mm hmm.

[S: **And then like, start giving, like, an example** like, it could be good because kids... kids **wouldn't have the need to chew gum during class,...**

W: Mm hmm.

S: **...and then the explanation] 2P**
be like, um ...kids... it would leave you more time to teach the class instead of yelling and, um, giving referrals...

W: Mm hmm.

S: ...to the person.

W: Mm hmm..... OK. Um... So h-- how'll you come up with your statement, though?

S: Um, like, saying... well, you gotta like um, it's a kinda like a topic sentence.

W: Mm hmm.

[S: **Like you gotta kinda, like, say... you gotta get them.. you gotta get the, um, start of the letter, like, um... like you gotta, um, get his interest to read 'cause I mean, if you just, like, write whatever's th – ever, EVER, he's not gonna have any interest reading the rest of the letter.**

W: Mm hmm.

S: **So you gotta kinda make it a good statement so that he listens to the letter and maybe actually thinks about.] 2³R**

W: OK, well for the purpose of this assignment...

Announcement interrupts.

W: Please, _____, please report to the office.

W: Um, uh... for the purpose of this letter that you're gonna do this task, what would uh, 'cause you talked about it should be a good statement...

S: Mm hmm.

W: What would a, what would a good statement do or say?

S: Um, it would... it would kinda, um, show that they're, um, like I said before like they're more responsible and they should ac-- get a chance to actually get some more responsibility with that—the gum rule thing

W: OK, so you think that's gonna be your approach?

S: Yeah.

W: Maybe give it a chance?

S: Yeah.

W: OK. Good. Um... Well, now that you have said that what you'd like to do is, is, you know, say "hey, give it a chance" and you've also said "I wanna include good things and bad things, you know, both sides of it", Um, how do you think you're gonna come up with examples that support your statement?

S: Um, like, um, come up with, like, the, um, possibilities that could happen if something's— like, if some students don't follow the rules, and if they do follow the rules, like, give examples of how, like, um, that'd be good for the students.

W: Mm hmm. OK. Very good. Um... OK, well I'm gonna ask you to plan, I mean, however it is that you do planning if you could, uh, go ahead and do that for a little bit, and then let me know when you're done, and uh, as soon as uh— I might ask you a few questions about your plan, and then you can go ahead and write the actual letter.

S: OK.

W: OK.

(Student plans)

S: OK.

W: OK.... So, how did you... Wh—what have you done here with your...

S: OK.

W: ...with your plan?

S: Um... well, **[I think I pretty much had the outline of the plan.**

W: **I see that you, that you say, "Use SEE".]** 2P

S: Yeah ...

W: O.K.

S: because ... it ... it's probably a little bit more formal instead of just, like, doing the, like, elementary thing, like, topic, um ... detail, detail, detail, concluding. That's more like a friendly letter.

W: O.K

S: And then the signature. But this ... SEE is more, um, in detail.

W: Mm hmm.

[S: Like instead of just saying examples like, what they call detail in elementary school, like instead of just saying ... I don't know, "Tom went to the store and got groceries." And then, and then, then it would go into, then it ... the explanation is more in detail and it gives *more* detail and it gives, um, *more* of a ... the audience can actually see it better.

W: Hmm. ... Oh, O.K. When ...now, what is it that you think the audience can see better exactly?

S: Like, the problem and how it can be fixed or how ... how, how it *can* happen and be improved and ... stuff like that

W: O.K. And you think SEE can help you write *that* kind of ...

S: Better ... better letters.

W: Better. O.K., good.

S: Better ... better *responses* ...

W: O.K.

S: to like, um, what's it called? Prompt?

W: Mm hmm. The prompt.] 2³CPR

Sure. Yeah. Yeah. Whatever that task is. Yeah. Mm hmm. Um, O.K., ah ...

S: And I've got ... you got ... you gotta get a good statement. You gotta ask to give it a chance. And if it, and if you try and it doesn't work out then just, that'd be it, like 'cause I mean ... Or you could try it another year since there're new kids, and the kids that may have done it before would be, maybe hopefully, more mature ...

W: Hmm.

S: and stuff like that. Um, and, and if you have examples for the good they've gotta be *good* 'cause ah, like, if you just say, like, you gotta get into detail like *how* it can be good and *how* you *can* give it a chance and how it *would* be O.K.

W: O.K. Well, excellent. Well, I'm gonna go ahead and let you go ahead and write this letter, then.

S: O.K.

W: O.K.

(student works on letter)

S: O.K.

W: O.K. Well, what have you tried to say so far?

S: Well, I've ... really I've only given two good, good reasons why they should have gum and I've gotten almost a whole paragraph done. I've ... I've got, 'I'm a student here at West Middle School. I have an undecided opinion about having gum.' Then I was ... that's my statement. And then my, one of my examples are 'some good things about having gum are, it lets the kids get their gum craved out and this would give the class more time to learn instead of stopping the class and giving a referral in his or her agenda. Another good thing is if it is thrown away properly then the custodians,' and I've got it in quotes, "'in the past" ... will not have,' like telling him like, if it's thrown away properly, then the custodians that he used to work for, with, like that's why I've got "in the past", 'will not have to scrap gum off desks, off of desks, tables, trashcans and the floor.'

W: O.K. Um ... Well, in saying this, what goals have you met, have you met so far?

S: Um ... I've given a very ... I've given a strong statement.

W: Mm hmm.

S: I have list some good ... um ... examples.

W: Mm hmm.

S: And I have given him ... I've asked to give it a chance.

W: O.K.

- S: Well, that's what I'm going to say at the end of the letter. I'm gonna ask him, 'so please give gum chewing a chance at the students' lunch period.'
- W: O.K. O.K., good. Um. What do you think you're gonna write about next?
- S: I think I'm still going to continue with some good things about it, and then go into the bad things.
- W: Mm hmm.
- S: And then, like I trying to get like four good things and then like four bad things. And then to wrap it up like ask him to give gum a chance, like that I've given him some good reasons to, um, maybe give it a chance and some things that, **[if it went wrong, then he wouldn't have to try it again if he didn't want to.]**
3²R
- W: Mm hmm. O.K. Um. Now you did mention a couple of examples there ...
- S: Uh huh.
- W: to support your statement. How, how do you feel those examples supported your statement that you, that you gave?
- S: Um, I think they supported my statement because it tells him that, students at West Middle School may be more responsible, and stuff, and they may actually keep with that rule of throwing it away like properly and stuff like that if they let them have it at lunch time.
- W: Mm hmm. O.K. Very good. Um. O.K. I'll let you go ahead and do your next part.
- S: I've got a question though.
- W: Sure.
- S: Can this letter actually be given to Mr. Hill? 'Cause I do think it's a good idea. (researcher laughs) *I do.*
- W: Ah, well, actually, I don't think there's any reason why you can't, kind of organize this if you want.
- S: That might actually be a good idea ...
- W: O.K. Cool.

S: to try to persuade him.

(Subject works on letter)

[S: I've got a question. Do you think I should add, like, 'and even if the teachers or, or *you* even want to chew gum you can during this period too.' Stuff like that. **Or do you think that's more of a friendly letter.] 3²CR**

W: I'll leave that up to you.

S: O.K.

W: Yeah.

(Subject resumes work on letter)

[S: Is it ... is it that they say ... I forget ... didn't they say before like, peppermint or something, makes your brain think more ...

W: I don't know.

S: 'Cause I remember them saying something ... either peppermint or spearmint or something makes your brain ... think more. I don't know. I don't know if I should put it in 'cause what if it's not true? Hmm.

W: Do you think you should put it in?

S: I do. 'Cause I mean if ... if it is true, I think it is ... I heard it from my mom, I think ... But if it *is* true, it'd be good 'cause kids would think more and they'd do better in school.] 3CR

(subject resumes work on letter)

S: O.K.

W: O.K. Um.

S: I'm done.

W: Oh, you're done. O.K., great. So I'll, ask you a couple of questions about this piece and then the whole thing.

S: O.K.

W: O.K. So what have you tried to say in this part of it?

S: O.K. Let me see where I stopped.

W: I think you stopped after the word “floor.” Mm hmm.

S: Yeah.

W: Right there. Yeah.

S: O.K. ... I’ve got, ‘And even if you like gum, you could chew it at this time. And I heard peppermint gum makes your brain think better. With students thinking better, they will have a chance to ... they, they will achieve in school . Now here are some not good things ... not too good things ...

W: O.K.

S: ‘Some students may not follow the rule and abuse it.

[Now, it doesn’t mean you’ll have fifteen, twenty kids not listening. You may have none. Like you ... like you’ve said, ‘West is the best’ so you should let the best shine and let students enjoy gum at their lunch period. Please give it a chance.>] 2R

W: Oh, O.K. ... Alright ... Um, so in this section, what goals do you feel you’ve met?

S: Um, I’ve told some ... I’ve asked him to give it a chance. And I, I asked if it tried not work out then you could have none, if you choose to.

W: Mm hmm.

S: I used SEE. I had statements, then examples, and explanations.

W: Mm hmm.

S: I listed good and bad stuff.

W: Mm hmm.

S: I wrote both, in both opinions. And I also ... gave ... (long pause)
And

[I also think if, if he lets *gum*, then if it is true that pepper ... that gum makes your brain think better, then at the lunch time or near the MSA when you take a break to go to lunch then have to come back to the MSA ...

W: Mm hmm.

- S: then they ... **the school's um points may go up with testing ...]** 3CR
- W: O.K.
- S: and stuff.
- W: That's interesting. Um, so, what examples have you written about that supported your statement and, and how do you think they supported your statement?
- S: Um, I think I supported my statement fairly well because it um ... it gives examples and then the explanation of how it may help or not help ...
- W: Mm hmm.
- S: a school.
- W: Um, alright. Well, now that you're finished, what do you, what do you think of this letter?
- S: I, I think it's pretty good ...
- W: Mm hmm.
- S: And um, I think I met all the, um, objectives that I wanted to meet.
- W: Oh, O.K. And I, I know you've talked about each of those goals. How well do you ... how well do you feel you've accomplished each of these goals?
- S: I think I did pretty well. I, I accomplished the good and bad stuff. I used SEE. I had a pretty good statement. And I had both opinions.
- W: Mm hmm.
- S: I asked to give it a chance and if doesn't work out then he can change his mind not to have gum.
- W: Mm hmm.
- S: Um, and ... and I have some pretty good, um, arguments for the good things. And, um, I gave reasons how the school can be better with ... like, testing and stuff. Like it could, they could, the kids could be smarter and then they could achieve better and maybe all be on the honor roll.
- W: Uh huh. O.K. So kind of thinking in a SEE kind of mode ...
- S: Mm hmm.

- W: ah, and I think you've said this to, to an extent. So you, do you think your statement had addressed the prompt?
- S: Yes.
- W: Yep. Um, do you ... did you explain how each of your examples supports statement?
- S: Mm hmm. Because all of them reflect back to the, um, opinions about having gum.
- W: Mm hmm. And, and you said you were undecided so that's one of the reasons why you presented both.
- [S: **Yeah. And I know friends, I mean, I know my friends want to chew gum and stuff like that.**
- W: Mm hmm.
- S: **In fact one of my friends got a referral because he had gum. But I, I think we should.] 2C**
- W: Mm hmm. O.K. Um, well, do you think that you've succeeded in persuading Mr. Hill to accept your, ah, your statement?
- S: Um, I think I did pretty good. I think, I think I described the statement and the problems and how West Middle may be better than the school he went to with the gum ... the strict, not strict gum rule and stuff like that.
- W: Oh, O.K. 'Cause that was a big part of the prompt.
- S: Mm hmm.
- W: So, yeah ... Um, you don't have to write it here and now but ...
- S: Mm hmm.
- W: can you think of anything else that might be able to say that would convince Mr. Hill?
- S: Um, maybe like, um ... like how, um, hmm... yeah, um ... like, if he's like a big gum chewer – I don't know if he is – then I know, I mean like ... not only the kids could enjoy it, well I think I did say that. Like, go into more detail with him like not, ah, not only the kids could enjoy it that, like, him and the assistant principals or whoever's there. The teachers, if they want gum, then they could

have gum then too because, ah, if they *do* like gum, it's kind of punishing them too 'cause if they like gum then they can't have it at that time ...

W: Mm hmm.

S: and if they chew it they'd have to let everyone else chew it.

W: Mmm ...

S: So it kind of reflects off of them ... their opinions, and stuff.

W: O.K. Very good. Well, I think, I think that's it.

S: O.K.

W: O.K.

Transcript of Persuasive Task Pre-Test – David

(subject read prompt aloud – researcher and subject then moved to another location for interview – subject reads over prompt again)

S: Ready?

W: Yeah, I'm ready.

S: Alright ... so ...

W: O.K. Well. Ah ... Yeah. A lot of these questions are going to similar to the ones I asked last time, except this time they'll be some stuff in there that's about persuasion. And ... ah ... I did these with [another subject's name] yesterday, and one thing you might find is they might be repetitive, but if you're just willing to stay on board and maybe repeat yourself a lot ... alright? ...

S: That's fine.

W: that'd be cool. O.K. well, what is this prompt asking you to do?

[S: Um ... it's asking me to write a letter to Mr. Hill, explaining why or why not I should think that gum chewing should be allowed during the lunch period, or any other time.] 1C

W: O.K.. ah ... What are some things that come to mind about this topic of gum chewing?

[S: Well ... knowing Mr. Hill, he'd probably give us like maybe one chance during lunch. He always says that, um, you can earn good things or bad things. If you do something bad, then you earn something bad.] 2R

W: Mm hmmm.

[S: So, um, I think I'd probably write to ask him for one chance, and then if we mess up, just ban the whole rule for like ... just not have the rule of gum chewing.] 2CR

W: Oh, O.K. Ah ... well ... Who do you think of as your audience for this essay?

[S: Mr. Hill.] 1R

W: Ah ... O.K. ... Do you ... anything more to say about Mr. Hill when you think about him as an audience?

[S: Um ... I don't think so, 'cause he's just ... the big man ...] 2R

W: O.K. ... the big man in charge, alright. Um, what do you think Mr. Hill already knows about gum chewing?

[S: **Well, he knows that it's a problem ... because he can't be checking class ... um ... It causes a lot of problems like ... you know ... I know I've felt before sometimes, like, I'm putting my desk like this ... started feeling the end and I feel gum under there and I'm like, yuck.] 2CR**

W: Mmm ... yuck ...

S: Yeah ...

W: big-time yuck. O.K., um ... Do you think that there are going to be some issues because, of course, you know, this proposal is, "Hey, let us chew gum during lunch". Um ... When you think about the things you might say to Mr. Hill, ah, do you think there are going to be some things that he would have a difficult time with ... agreeing with or accepting?

[S: **Yeah ... um ... Probably just having gum, because I don't think he wants the custodians, like, under the tables scrubbing gum off, 'cause that's just sick,] 1C**

[and there are like, sometimes, there's other things that need to be tended to, and if they need have to, like, clean the gum off, then they can't attend those things and other problems.] 1C

W: O.K. ... Good ... O.K., yeah, you mentioned the reasons ... the things he might have trouble agreeing with or accepting. Can you tell me a little bit more about, ah, why ... you know, why he might maybe have trouble with it.

[S: **Because, um ... like, there's some times there's health hazards, like if somebody vomits ... um ... that's one of the important things, and that's why they need to get there and not scrape gum off the chairs things like that.**

W: Mm ... Mm hmm...

S: **and ... I really don't know why otherwise.**

W: O.K.

S: **Other than health hazards 'cause he likes safety.] 2CR**

W: O.K. ... That's good ... When you think about this essay in terms of goals, ah, what are your goals? Ah, what are you trying to accomplish by writing this essay?

S: To persuade Mr. Hill to let us try chewing gum once in lunch ...

[even though there ... we're probably going to lose the privilege of chewing gum.]

W: Well, why do you think that?

S: **'Cause there's some people I know who chew gum even in regular classes.**

W: Um hum ...

S: And like, sometimes they don't get caught and sometimes they do, and if they do get caught, they spit it out, get a referral and then maybe next day they'll still be chewing gum.

There are just some people who don't listen.] 2C

W: O.K. It's good to maybe keep in mind. Um ... what do you think you'll have to do in order to achieve your goals here?

[S: Um ... be very persuasive ... not like, drag it out, like just keep saying, and iiff yoooouu ... like pulling it out more than it needs to be ... like that ...

W: O.K. Now, why do you think it's important to be ... to be short and, you, you talked about kind of not dragging it out. Why do you think that's important?

S: **Because if you like keep like, talking and talking and then you restate your reasons, you're getting nowhere. And it just gets annoying after a while, I guess.] 2³R**

W: Hmm ... good, um ... What would you like to do first here?

S: Um ... I guess I will plan.

W: O.K. ... um ... and ... ah ... now this is something that last time, you didn't plan. How do you, when you do do plans, um, well what kind of ... what kind of plans do... er ... how have teachers taught you to plan? What are some ways you've planned?

S: Sometimes there's bubble maps ... sometimes there's chain maps ... sometimes they just say write quick, quickly like, with a little dot and then a sentence sort of, except not really.

W: Just like the little phrases ...

- S: Yeah ...
- W: things. O.K. Can you think of a name they have for that? Have they ever named that for you?
- S: I ... I've had like a couple teachers say "I don't care how you plan just ... even if you just write down ideas" ... and so they don't really name it.
- W: Oh, O.K. O.K. Hmm ... Is there a kind of planning that you find most helpful?
- S: Yeah. Just like writing ideas down as they come to me when I'm planning, 'cause ... bubble maps and other lines, they just ... I don't really like 'em.
- W: O.K. Once you have the written words and phrases written down, how do you use that plan while you write?
- S: Well, I sort of do it into my head, but, um, I say, well, I need to say this first or this second.
- W: Mm hmm.
- S: Er ... I need to say this in a group. Because if I put it over here it won't make any sense.
- W: Mm hmm
- S: And ... um ... things like that.
- W: When you write down the ideas do you ever try to group them as they're occurring to you when you're planning, or do you usually just look back and then try to group them afterwards?
- S: Afterwards, probably.
- W: And is there anything else that you write to group them, or do you just kind of look at them and ... how do you do that?
- S: Well sometimes I would like, maybe circle a few ... or, like ... like have one group up in the corner, another group up in another corner ... something like that.
- W: Mm hmm ... oh, so, so at first sometimes you might try to put them one place or the other?
- S: Yeah.
- W: O.K. O.K. Um ... ah ... so, how, how do you think you'll plan this?

- S: I'll probably ... um, do a bubble map just to make it easy
- W: O.K.
- S: 'Cause sometimes just writing down ideas is ... a little hard.
- W: O.K. Do you ... given the prompt , you know, and the, and the fact that it's persuasive writing, do you have any ... ah ... 'cause you talked about sometimes you might, you know, try to do this different ways, do you have any ideas about how you want to try to do the bubble map?
- S: Um, just, I guess, draw the bubble in the middle and write "gum chewing" and then have bubbles coming off of it.
- W: O.K.
- [S: I might have, like, maybe, one side that says "good ideas", "bad ideas" to see, like ... one of those little weighing things to see which is better, good or bad ...**
- W: O.K. So, so what will the good ideas and bad ideas represent?**
- S: Um ... I guess, like, these little weight things ... like, then I'll have ... I'll like sort of pretend there's a scale, and if I have two over here for good, then I guess good'll win, and I use those ideas to help ... but if I have more bad then I'll use the bad ideas, to *not* have gum chewing.] 2³CP**
- W: Oh, I see, so 'good' means in favor of, of trying it and 'bad' means, not.
- S: Yeah.
- W: So you're still kind of open-minded about whether you're going to be in favor of it or not.
- S: Yeah.
- W: Oh, O.K. O.K. Good ... um, 'cause the prompt does say you can, you know, whatever it is that you, that you think after this discussion, O.K.? Um ... Now I know you're familiar with statement, example, idea ...
- S: Right.
- W: So I wanted to ask you ... um ... what is your statement gonna ... what form is it going to take and how do you think you're going to come up with your statement?

[S: I think ... like ... I will probably use ... um ... a question 'cause I really like opening with that.

W: O.K.

S: Like, do, would you want an example?

W: Oh, sure. If you have one, sure.

S: O.K., um ... I think maybe like, "Should we chew gum at lunch?" And then like, go into, you know, the positive or negative sides of it.] 2³P

W: O.K. And I guess, so you're saying, after planning, you'll kind of ... is your plan to kind of know what ... which of those you want to argue for ...

S: Yeah.

W: when you're done planning?

S: Mm hmm

W: O.K. O.K. Um ... Once you have that statement, how will you come up with examples to support it?

[S: Um ... I guess memories from seeing people chew gum in school, if they're bad ... or seeing how they're *not* chewing gum in school, I guess, 'cause ...either way there's no way good to chew gum properly in school, if they banned it.] 2C

W: O.K. O.K. Well, ah, thanks for answering all these before-planning questions. So, I would say, go ahead if you, ah, unless you have any other questions, you can go ahead and do your plan.

S: O.K

W: And feel free to, you can write on the prompt, too. Whatever it is you want to have out in front of you, ah ...

S: O.K.

W: you know ... feel, feel free to have it all out to look at if you wish.

S: Alright. It's just this pen leaks, sometimes.

W: O.K.

(subject plans)

S: I guess I'm kind of stuck.

W: O.K.

S: Um ... I have five on each side and I can't think of another idea.

W: O.K.

S: So ...

W: Well, what might that mean for your, for your letter?

S: Um, may I ask a question now?

W: Sure.

S: Can I take both sides and write the positive and negative, or would you prefer me to take a side?

W: Let's ... let's ah ... that's interesting ... Let's ... let's take a look back at the prompt. Why don't we try that. Go ahead and read just that that bottom, that last little paragraph here on the prompt. And let's ... let's, let's see what it said.

S: O.K. (*reads*) "Image the student council has asked you to write a letter to Mr. Hill explaining whether or not you think students should be allowed to chew gum during their lunch period. Be sure to consider all possible reasons in support of your position. Explain each reason fully."

[So, it appears I have to take a position.] 1C

W: O.K. And how do you think ... 'cause I ... I, I, I see what you're saying when you talked about your system for trying to determine whether you'd be for or against ... and it seems like you have an equal number ...

S: Yeah.

W: of ideas. So how ... how might you ... um ... 'cause I guess this could have an impact on, on your statement.

S: Yes, um ... well,

[my statement is still gonna be the same because

... it's why or why not do you think we should have gum in school during lunch periods, so ... I'm trying to think ...

If I were on the council, um ...

W: Mm hmm.

S: **I don't, I think maybe some of my friends might be in there, and I wouldn't want to let them down by writing the letter saying that we shouldn't ...**

W: Mm hmm.

S: **But ... if we don't mention all these bad things, and then bad things happen, Mr. Hill's gonna say ... might say, "That wasn't a very good idea. Why didn't you say all these things?"] 2CR**

W: Mmm, O.K.

S: So ...

W: Can you do both things in that, in that, in one letter, do you think?

S: Well, I could, but that wouldn't be taking positions. Could I say, like, all the things that I think we should have gum, but mention a couple bad side effects that might happen?

W: Sure, I mean, do you, do you think that would help you in persuading Mr. Hill in any way?

[S: **Yeah, because ... um ... like, salespeople, when they try persuade you, they like ... they don't mention the bad parts. And then you get all mad; then it could go into a law case or something like that.**

W: Mm hmm.

S: **So, if I do mention the bad parts, but I don't make them seem as big as they really could be, then I think that will persuade him more if we told him we wouldn't do these things and make sure that certain people didn't do them.] 3CR**

W: O.K. I ... I ... I think that sounds ... I think that sounds like you solved that pretty well.

S: O.K.

W: O.K. So, you ready to write?

- S: Sure. Is there any other questions you want to ask?
- W: Ah ... No. I'll ask you to do the same thing we did with the expository one. Whenever you feel like you've done a, a, a part of it, or you've met a certain goal, I'll ask you a couple of, of questions about what you've done so far.
- S: O.K.
- W: So just let me know whenever you feel like you've done a part of it.
- S: Alright.
- W: O.K. You gonna to be O.K. here with that ... with the stuff blowing around?
- S: Yeah.
- W: Alright? O.K.? If anything goes I'll chase it down for you. O.K.?
- S: Alright.
- W: Alright. Can you use this? (object offered to subject to hold papers down in wind)
- S: Yeah. That'll be good.
- W: O.K. Alright, I'll leave you alone. Go ahead. (researcher's paper blows away; subject retrieves it). Thanks.
- S: You're welcome.
- (subject works on first section of letter)
- S: Um ... I just wrote my introduction.
- W: O.K. Great
- S: Are there any questions you want to ask on that?
- W: Yeah. Sure.
- S: It's not very long.
- W: Oh, O.K. Um, in this introduction, what have you tried to say so far?
- S: Well, um, the first three sentences, er, are like, a series of questions. And then, um, next I explained that um ... our student council thinks we should be allowed

to chew gum after we ate our lunch, but we, I also said there are also a few bad sides to it ... along with a few positive effects.

W: O.K. Um ... In terms of goals that you have this, what goals do you feel you've met here in the introduction?

[S: Um ... I believe I've stated what we think, and what we want. And have my statement. And now I'm probably going on to an example ... which next comes an explanation and this time

instead of doing it as SEE in all one paragraph, I'm gonna spread it out in different paragraphs ... three different paragraphs probably.

W: **O.K. So, thinking about SEE ... um ... is this your statement? The first paragraph?**

S: Yes.

W: **O.K. And then, so, how would you describe each of these paragraphs in terms of SEE?**

S: **Well my first paragraph stating what we think ... um ... asking the opinion, stating that ... we think we should have it, but also stating ... that there could be some bad side effects and good side effects. Um ... my second paragraph would be examples which I would give examples from both, um ... ah, positive and negative effects ... to ... say, "This is what could happen."**

W: Mm hmm.

S: **And then my third paragraph I'm ex-, explain each individual situation or example in detail.] 2CPS**

W: O.K. Interesting. O.K. Um ... so I guess you've told me about what you're gonna write about next. It's gonna be a ... kind of a big examples paragraph. O.K. And then you're gonna explain those later. Interesting. Um ... Have you written about any examples yet that support your statement?

S: Um ...

W: And if so, how does it support your statement?

S: I haven't written any yet 'cause ...

W: Mm hmm.

S: um ... I really didn't think of writing examples in the statement.

W: Right. O.K. Just checking. Great. Ah ... well, that's ... that's it for now, so go ahead and, ah, do your next section, and let me know when you're done.

S: Alright.

W: Thank you.

(subject works on next section of letter)

[S: I think now I'm sorta changing it. 'Cause ...

W: O.K.

S: it's gonna be a little hard. I'm probably going to do my first paragraph from the five examples then explanations after them ... of how they're good and then the second paragraph, er, third paragraph being bad.

W: O.K.

S: It's just ... it just would be a little harder ...

W: O.K.

(subject resumes working on the letter)

S: That about finishes up my second paragraph.

W: O.K. Cool. Um ... So, in this paragraph, what have you tried to say so far, in this one?

S: Well, like I said, when I was, like, going down through it, I thought, it's kinda like ... I stated the positive ... um ... examples about chewing gum ... be-, because I thought **it's going to be hard ... when ... um ... to restate something later and explain it ... like ...**

W: Mmm ... Mm hmm.

S: like, he might be thinking, "What?", and have to re-read everything which I don't want him to have to do.] 2RS

W: Good. So, in terms of goals, what goal or goals or goals do you feel you've met?

S: I believe I've met, um, my goal of stating how good it would be to have gum, and, like during the lunch period. And that it has some very good, positive aspects.

W: O.K. Good. Um ... so, what are you going to write about next?

[S: **Um ... I'm going to state the bad ... the, um ... the five examples that can prove to be bad for gum ... but make them sound not *so* bad.] 2CR**

W: Yeah, 'cause I, I was wondering about that. How, how would ... um, well, I was ... actually not so much with the next things, but ah, with the ones you had in this paragraph, the good things, how ... how do you ... what examples have you written about that support your statement?

[S: **Well, the cafeteria could sell gum.**

W: Oh ... O.K.

S: **So people ... one, they couldn't bring ... people, one, they couldn't bring it in, and then like maybe hide like some like drugs in the wrappers or something, which could be a problem of course. Two, they could make a big profit off of it 'cause everybody loves gum, except for people who have braces.] 3C**

W: Mm hmm.

S: Um ... do you want another example?

W: Ah, just ... any, any that you wrote about that you think support your, your statement.

[S: **Well, I wrote all five of these so ... well, I wrote, I also wrote that if people can chew gum, they'll probably say, "Hey, Mr. Hill. He, You're really cool. You let us chew gum." And then they'll start listening to more. So when he says, "I don't want you to' like, we had this example, er, like there was this one time when like these people were bullying up this kid. And he said, "I don't any danger here. I don't want someone to go out here on a stretcher they never hope to go on." And so people say, "You know what ... if Mr. Hill ... Mr. Hill let's us chew gum. I think he knows what he's talking about" or "He's really cool."]** 3CR

W: O.K. Good.

[S: **So, um ... also, um, on there I wrote people could chew gum and not get in trouble. I added on to that this and wrote, if people chew gum during lunch period, then they won't have to chew gum during, like, class. If like, they feel like they have to keep going like this _____ they like, hopefully there's time to do that at lunch and get it all done.] 3C**

W: Mm hmmm.

[S: **Um ... the ... I also wrote, um ... if we can prove to Mr. Hill that we can chew gum without, like, putting it places we shouldn't put it. Or like, spitting it at people, something like, stupid like that, um ... if we can prove that we can do other ... we can have more other freedoms and we won't get yelled at as much ... 'cause we have these other freedoms to keep us occupied. And, another thing I was wrote was, if a person's like breath just stinks, then if they chew gum during first period, or, like the lunch period, it might like cover up the like, stink er like ... sort of like, something like that.**

(So they won't have to feel worried that their breath stinks,) 1C

and they'll do better in class, or something like that.] 3C

W: O.K. Good. Um ... And I guess also we've, we've already talked about this next thing, the next question was, How does each of those examples support that statement?, but I think you made that pretty clear.

S: Oh.

W: That all of them are ... you know, um ... influencing Mr. Hill to accept this as, as, as benefits of chewing gum.

S: Yeah.

W: O.K. O.K, great. I'll let you go on to the next paragraph. Thank you.

S: O.K.

(subject works on letter)

S: Well, I finished my third paragraph.

W: O.K. Great. Thanks. Um ... Let me go ahead and ask you a few questions about that. So, in this ... in this paragraph, what have you tried to say so far?

S: Um ... I gave ... each five examples of bad things, but I explained how we would solve them, and in punishment.

W: O.K. Can that you relate that idea to your ... to your goal?

S: Well, my goal was to say that these are some of the bad aspects, but we can solve them. And I believe we did, er ... I did, at least.

W: O.K. Can you go ahead and tell me about those examples and how you feel they support your statement?

S: Well, the first one ... well ...

[people will get sick under ... er, wait ... people will stick it under like things, like tables or chairs at lunch.] 1C

[Well, one thing is, um, people won't do that because if they're caught, you can find out where they sit 'cause some people sit in the same places almost everyday.] 2C

W: Mmm

S: Er, like, you can ask, "Well, who was sitting there the other day?"

W: Mm hmm.

S: And then, I think the punishment was, like ... oh, you can't buy, like, my suggestion was if it does work out you can buy gum at school, like in the cafeteria ...

W: Mm hmm.

[S: One, you can't buy gum in the cafeteria and you can't bring it in to chew it. But if you're caught the second time, it's an automatic office referral. Something like that.] 2C

W: Mm hmm.

[S: And if you solve the problem of people putting it under there, then custodians won't waste time washing it off or something like that.] 2C

W: Mm hmm.

[S: Um ... Another thing was people sticking it on other people, getting in their hair. Um ... one, its just wrong. And two, if you're caught doing that, you'll get in-school suspension ...

W: Mm hmm.

S: which is worse than suspension because I know some people they like, um, their parents don't really care what they do, and if they get a suspension, like, they'll just go home and play video games all day, which I don't think is fair.] 3C

W: Right.

S: Even if they do make up the work, it's still not fair. They don't do it.

W: Mm hmm.

[S: My other thing was abuse by ... abuse it by bringing in drugs in the gum packaging. Um ...If you're caught with that ... like ... ah, wait, if you're selling the gum at school, and then people can't bring it in, then you won't have the problem of people slipping drugs in it.] 3C

W: Mm hmm.

[S: Um ... Then the last thing was ... um ... people start bringing other candies, like tic-tacs or mints Um ... if you get it, they'll just throw it away, and then your money's wasted. If you bring it in again and you're caught, they'll throw it away. 'Cause it's no big deal really ... and then ... that's all my ideas I put in.] 3C

W: O;K. Are you ... ah ... what do you think you'll write about next?

[S: Um ... I'll probably do, like, last conclusions saying ... like, um, some people might say, "This is not... this isn't fair. Why would we get in so much trouble for these things?" And so, I could say, like, if you were to ask that, I could say, "Well, you don't *have* chew gum at lunch. You don't *have* to bring in candy ... So, you don't have to *have* to buy it.] 3CP

W: O.K. Um ... would you want to go ahead and write your conclusion then?

S: Yeah.

W: O.K. Excellent.

(subject works on letter)

S: Um, that was just my short conclusion.

W: O.K. Well this will probably go quick. Ah, what did ... what did you say in your conclusion?

S: Oh, I said, um ... my state- ... my r- ... like, to start off my conclusion, I said, 'now some people might say this isn't fair', and just to match that that I basically said well ... "You don't have to buy the gum. You don't have to bring in the candy and lose it.

[You don't have to anything, really.]" 3R

- W: O.K. Um ... how, how do you feel, feel that met a goal? Is there ... did that ... ah ...
- S: Well, I feel it met the goal for that, if Mr. Hill were to ask the question 'why?' ... er, really like, what if people don't think this is fair, I can say, I can like, say well ... 'you don't *have to*' and the like, um ... I just met the goal that ... this is not something you *have to* do ...
- W: Um, well you're not going to write about anything next, so there's no point in my asking you that question, huh?
- S: Right.
- W: Ah ... Um, even though this was really brief, this conclusion, did you have any, any, any examples in it that you feel supported your, ah, statement?
- S: Well, no examples of my bubble map but, the example of the fact people didn't *have* buy the gum or *have to* abuse it or anything ...
- W: O.K. Well, now that you're done with your essay, what do you think of this persuasive letter to Mr. Hill?
- S: I think if Mr. Hill were to read it, he would seriously think about letting gum happen. I'm not sure he could sell it 'cause you'd have to get copy rights and all that stuff. But he might allow it during lunch.
- (researcher and subject are asked to move to another location nearby)
- W: O.K. Yeah. Looking back at your goals, ah, thinking about your, objective for writing this, how well do you think you accomplished your goals?
- S: I think I accomplished my goals to the max.
- W: Uh huh ...
- S: Um ... For what I wanted ... because ... um I was with the council and if my friends were in there I wouldn't have let them down.
- W: Mm hmm
- S: But also, um, Mr. Hill wouldn't have any chance to say, "Well, you didn't say this was gonna happen." And if there is, for some reason, something really weird and bizarre that happens, like someone brings in weed and then like, slips it there and then somebody sells it ...

W: Mm hmm

S: ... and say "You didn't say that was going to happen." And I could say, "How was I supposed to know?"

W: So you feel that by kind of thinking of all these things that could happen and presenting the fact you thought about them ...

S: Yes

W: that would ... You think that that would help persuade him to give this a try.

S: Yes.

W: O.K. Good. Um ... ah ... do you feel that your statement addresses the prompt?

S: Um ... yeah, um, it's a, I guess, a series of statements, like three, but they all say "Should we chew... should we be able to have gum during lunch? Should we be able to chew it during lunch, that time period? Is there good and bad possibilities?" ... and I stated all those things ...

W: O.K.

S: that I wanted to.

W: O.K., good. Um, do you feel overall that you adequately supported your statement with your examples?

S: Yes. Um ... Should I repeat them for the little mic things?

W: You know, I don't think you do. I think, I think you did a really great job with all that, ah, explaining them. Um ... ah ... O.K and I think also it says, it says here, "Did you explain how each of your examples support your statement?", which I think you've done really, really thoroughly already. Um ... So here's a different question, "Do you think you've succeeded in persuading your audience to accept your statement?"

S: Um ... I think I believe I've gotten his interest, and that he will look into the subject. But I'm not sure whether or not he will ... let us have gum during lunch.

W: O.K. Um ... Now you don't have to, to add this to the letter now or anything, but is there anything else you can think of that you could do in this letter by way of convincing him?

S: Other than bribing him which I don't think I should do, um ... no.

W: O.K. Alright. Oh, great. I think we'll all done with this part of it, so thank you very much.

Transcript of Persuasive Task Posttest – Jessica

(researcher read prompt aloud and gives subject all materials; reminds subject she will be asked questions throughout composing of letter)

W: So, what does this prompt ask you to do?

[S: Um, it's asking to ... oh ... O.K., it's asking, um ... like if I'm in favor, or like it's asking ... let's see ... like if the, if I think that the school lunch mach-, er, lunch machine (laughs), snack machine should be turned on during school hours and lunch periods, or like if I'm not in favor ... of it.] 1C

W: O.K. Um, what are some things that come to mind about this topic of the snack machine?

S: What do you mean?

W: Or, you know, if you think about the snack machine and ... ah ... whether kids ever want food from it or, um, kids having food in school, that kind of thing. What are some things that come to mind about that?

[S: Um, I'm kind of going, like, with Mr. Hill. I don't think that they should be turned on. I think they should be turned on at four p.m. because, like he said, the students are probably gonna like try to eat in class. They can become unhealthy with the junk food.] 1CR

[Um ... then like, it's kind of like the gum. The staff has to clean it up. It'll be all over the place ...] 2¹C

W: Mm hmm.

S: and people can be bullied.] 1C

W: Mm hmm. O.K., good. In addition to the stuff you just mentioned, and of course Mr. Hill is your audience, we know that. Um, in addition to what you just mentioned, what are some things Mr. Hill might already know about problems with food or the snack machine?

[S: He's probably gonna know that like, kids are probably gonna like abuse it, and take it too far, like over the top of the level.] 1CR

[And then that like, some of them could probably like, break the machine.] 2C

[Um, it would cost the score, score, the school more money because they have to put the snacks in the snack machine.] 2C

W: Mm hmm. O.K. Um ... when you think about this proposal of turning the snack machines on during school day, are there, ah ... you mentioned some things, are there other things you can think of that Mr. Hill might have difficulty with agreeing with or accepting ... about that idea?

S: Hmm?

W: Are there some other things you think, problems you think Mr. Hill would have with this idea of turning the machines on. You mentioned a few.

[S: Um ... like they could eat it in class, or like other places in the school.] 1C

[And then like, they'd probably have to change the rules to where, if they let the kids get the snack then they have to let 'em eat it, like, in the hallway or in class, 'cause then they can be like, 'well, then they should turn them off' or whatever.] 2C

W: Mm hmm. O.K. Um ... ah, when you think about this in terms of goals, what are your goals here for writing this essay?

[S: Um, to let Mr. Hill know that what he has right now is a good idea to keep ... just turn the snack machines on at 4 p.m., and then to give him reasons why.] 1CPR

W: O.K. Good. Um ... what do you think you'll have to do to achieve that goal?

[S: Um, just tell him all the bad things that are gonna happen to the school and, safety and stuff ...health ...] 1C

W: O.K. Good. Um, what would you like to do first with this?

[S: Um, probably just ... tell him that I'm not in favor, well, wait, how would I say it, since I'm going like, against it? I'm not in favor?] 1C

W: Mm hmm. Yeah.

S: Alright so I'd say that I'm not in favor of the snack machines being on during the school ... er, during ... before school and during lunch periods. And then I'd give him examples why.

W: O.K. Good. Um. Ah ... how do you plan to organize this ...

S: Um ...

W: to, to meet these goals?

[S: well, like I said before, just put down that I'm against it. Then put the examples down, and then give my claim and then give my warrant.] 2¹CP

W: O.K. Good. Um, so, ah, you talked about your claim. How do you think you'll go about coming up with it? I mean, you, you know what it is, but how did you ... um, I guess I'm already, I guess I'm asking, how did you already get there. How did you decide what you were gonna, what your claim was gonna be.

[S: Um ... I don't know. Just kind of that like ... just, the way that they wrote it. Kinda like, it's written. You can kind of tell ... yeah.] 1C

W: O.K. Um ... now you talked about your claim, and we also talked about, ah, you know, having good examples and, and explanation with this.

S: Mm hmm.

W: Um, how, how do you think you're gonna go about coming up with some examples, and how are you gonna explain how your examples support your statement?

[S: I'm just ... Think about it kinda like the gum essay, 'cause like, it's pretty much like, the same thing 'cause they're sticky foods.] 2C

[And then there's foods that are crumbly that can get all over the place for the staff to clean up ...] 2C

W: O.K. Good. Um ... alright, well, ah, it's, I want to give you some time to plan. I know you're a planner. So, take your time. Um, make the plan whatever you want it to be. And I know sometimes you add to plan as you go. That's, of course, always totally fine with me. So ... alright! I'll, ah, be quiet and leave you alone to think and plan.

S: O.K.

(subject plans)

S: How do you spell irresponsible?

W: i-r-r- ...e-s ...

S: sponsible?

W: Mm hmm ... yeah e-s ... yep ... p-o-n ... mm hmm ... there you go.

S: Mm hmm.

(subject resumes work on plan)

S: O.K. I think I'm done.

W: O.K. ... Well, how did you go about planning this? Tell me about your plan.

S: Um, I just took most of the examples out of ... Mr. Hill, and then I kinda went off them on my own.

W: Oh, O.K. So did you come up with some things that you ... that, that were ideas you had as well as what was in there already?

S: Mm hmm.

W: O.K. Um, you already have a statement, and you already mentioned that you have examples.

S: Mm hmm.

[W: You said earlier you wanted to, um, come up with a, with a warrant. Do you feel that you've done that too?

S: No. Not yet.

W: Oh, O.K. I just, I just wanted to ask you about it 'cause you mentioned it.

S: Alright. I'm gonna do that now.

(subject reads over data and claim on plan and then records warrant on plan)] 1CP

S: I think that's funny when I read it.

W: What's that?

S: I said, you're gonna think it's funny when I read it. Lookit. Just the way it's written, it sounds funny.

W: Well, it's just a plan so, I mean, as you go to write it, of course, you can change anything you want, you know, in terms of making it sound the way you want it to. O.K. Um, is there anything else you can tell me about the plan?

S: N ... no.

W: O.K.

S: Not really.

W: Alright. So, you, you feel like you're ready to go ahead and write the letter?

S: Yep.

W: O.K. Great. Here you are. (researcher gives subject form on which she is to write letter) And, um, ah, just as a reminder, any time you feel like you've finished a little section of it, or you've met some goals, you feel like, you're kind of at a stopping point, if you can let me know, I'll ask you a few questions in there. O.K.? Thank you.

(subject writes letter from start to finish without stopping)

S: O.K. (subject stops writing and looks over what she has written so far)

W: Are you at a stopping point?

(subject nods)

W: O.K. Did you ... did you write the whole thing?

S: Yeah.

W: Oh, O.K. Alright. Well. Let's see, um ... Well What did you try to s- ... The question was, "What have you tried to say so far?" but you've gone to the end, so I'm just gonna say: So, in your own words, tell me, what have you tried to say here?

S: Um, I just had to say that I'm not in favor ... or, wait ... wait, I'm against the snack machine ...

W: Mm hmm.

S: being on during school hours.

W: Mm hmm.

S: And then I just gave my examples and my warrant.

W: O.K. Ah, what goals did you meet in doing ... that?

[S: Um, I wrote it pretty well, so I think, and gave good examples, so I think I persuaded Mr. Hill.] 1CR

W: O.K. And that's what you wanted to do? (subject nods) O.K. Um, well, tell me about some of the examples you decided to use, and how you feel they support the statement.

S: Um, I did ... some of them were that, ah, the students could abuse the snack machine.

[Um, the school may become very unsafe since the students could be bullied for their snack money.] 1 C

W: Mm hmm.

S: Um, the machine could be broken. Um, students may become very unhealthy. And

[I did this because those are bad things that could happen to the school and to people ...

W: Mm hmm

S: **if we had the snack machines on.] 1C**

W: O.K. And um, I guess we're gonna get to the warrant part of it, 'cause you talked about your statement and your examples. What did you use to ... what was the warrant that you used to connect those to the statement?

[S: Um, I said that the school should be like a safe, healthy, clean place, not an unsafe, bullying, junk food, dirty place.] 2CR

W: Is that what you thought was kind of funny, the way you said it?

S: Mm hmm.

W: But, no, but I, I think ... I think that's a good warrant. That makes a lot of sense ...

S: Good.

W: to me.

W: Um, did you say it that way in your, in the essay or did you change it a little bit?

(subject smiles)

You said it just like that?

- S: Yeah. I said, (*reads*) “The school should be a safe, healthy, clean place not an unsafe, bullying, junk food, dirty place.”
- W: Alright. Um. O.K. Ah. Let’s see. Um ... Because you’re done, some of this might sound a little repetitive, but I’m gonna, like, go ahead and skip to the end questions. Um, what do you think of your essay?
- S: Um, I think it’s good. I think it’s probably one of the best ones ... yeah.
- W: O.K. So, what ... You say you feel one of your best ones. Um, why? Wh-, why do you feel so good about it?
- [S: Um, I just feel like it was a good topic and I explained it well. I got good examples ...**
- W: Mm hmm.
- S: explanations ...] 1CP**
- W: O.K. Good ... um, well, I think we already talked about your goals and how you felt you accomplished them. And we know what your statement is. Do you think your statement addressed the prompt?
- S: Yeah.
- W: Mm hmm. Yeah. Sure did. Um, well here’s, here’s a, here’s a question that’s a little bit different. You have a lot of ... ah, you talked about examples already. Do you feel that those examples are adequate to support your statement. Like, do you feel like you’ve given enough there to support it?
- S: Yeah. I think I gave a lot.
- W: Mm hmm. O.K. ... um ... Let’s see ... Well, here’s a question. Do you think you’ve con- ... ah ... succeeded in persuading Mr. Hill?
- S: Yeah ... mm hmm ...
- W: O.K. Is there anything else you can think of that could convince him?
- S: No. Not besides what I have written down.
- W: O.K. I tell you what. I’m gonna ask you to do something we haven’t done before, which is ... and I think this might be just kinda fun. Um ... And it won’t take too long I don’t think. Ah ... Would you be willing to read the essay aloud?
- S: Yeah!

W: Yeah. Why, why don't we do that. And, and if there's anything that you ... like, while, while you're reading it, if there's anything that you think that, "Oh, while I was writing this I thought that" or "I said this because" ... O.K.?

S: O.K.!

(subject reads essay aloud – subject gets caught up on “may bullie” wanting to say “may be bullied by”; “just eating snacks” which she later changed to “just eat snacks”; and at the end on the line “I am not in favor” – saying “wait, it should ... yeah” seemingly forgetting she argued against the proposal)

S: (student erases –ing off “eating”) I took the –ing off ...

W: O.K.

S: because it didn't sound right.

W: Well, ah, I wanted to ask you one other thing about the warrant. Um ... How did you, in terms of how you set up your essay, or, organized it, where did you fit the warrant in? Like, where did you put it?

[S: **Like, last. Like I always pretty much do.**

W: **O.K. Why do you ... why do you put it last?**

S: **Um, 'cause I feel like what you should do is give your topic and then give your examples ...**

W: **Mm hmm.**

S: **and then most people, by then'll be saying like, “Why?” “Why would she do that?” And then you come out with your warrant and then ... it's all done.]**
2PRS

W: You kind of nail it down at the end.

S: Uh-huh.

W: Mm hmm. O.K. Well, I guess we're done

S: O.K.

W: Alright.

Transcript of Persuasive Task Posttest – Ann

(researcher gives subject prompt and other materials, and read prompt aloud)

S: O.K.

W: O.K. Um ... Now, it's been a little while since we've done it this way, but I'm gonna have you do the thing where I'll, I'll have some questions for you and then we'll plan and then we'll do the writing.

S: O.K.

W: O.K. So, um, well, what's this prompt asking you to do?

[S: Um, well, it's asking me to decide, first of all, if I think that students should be able to purchase food from the snack machine during the day. And then, from that, just ... basically sup-, give reasons to support or, basically to support your reasoning.]1C

[And, ___ and, ah, whether or not you chose a position would depend on what you say. Alright. First ___ thing ___ 'I think it's O.K if its turned on during the day. It's not during breakfast. But you understand having to supervise the cafeteria. Maybe not during breakfast, but maybe during lunch.'] 2CR

W: O.K. So, I.. so that's something you could do. You could argue just for it being on during lunch. So that's ...

S: Yeah.

W: what you're thinking now you might want to do?

S: Yeah.

W: O.K. Um, what are some things that come to mind about this topic?

[S: The gum essay, really. 'Cause there's Mr. Hill again. It's like ... it's something about food during lunch and, it seems like there aren't a lot of rights during lunch, so that's what ____.

W: O.K.

S: So, that's what it reminds me of.] 2C

W: O.K. O.K. Um, who do you think of as your audience?

[S: I think of Mr. Hill as my audience because that's who you're writing the letter to ...] (1)

W: Mm hmm.

S: and that's who you're trying to get to support your reasoning.] 1²R

W: O.K. Um, what are some things you think Mr. Hill might already know this issue of food in the school and, the snack machines ...?

[S: Well, I think you obviously already know from gum, since he used to work at other schools then he knows about that.] 2¹CR

[Then he probably knows, the gum and food are fairly similar. I mean, food you can't normally stick under desks. It .. it's, it makes a mess if you don't clean it up ...

W: Mm hmm.

S: so obviously you have some reasons about that.] 2CR

[And about the snack machines, he knows plenty about them because, um... like now, like in the news, you know, schools use snack machines, like ___ high school, like they have them on I believe. And they can't have, um, sodas. They can only have, like, diet sodas, I believe, water and like, orange juice and stuff like that.] 3CR

W: Mm hmm.

S: So he probably knows about that. And ...

[I bet a lot of students before now have asked, you know, if they could turn on the snack machines, so ...] 3²CR

W: O.K. Um ... With this proposal that you're gonna support of turning the machines on, at least during lunch, um, what are some things you think Mr. Hill might have trouble agreeing with or accepting, and, and why?

[S: Well, he might have trouble accepting that, students like, when going to and from the cafeteria, unless they moved the vending machines in the cafeteria, then it'd make more sense, I'd say. 'Cause otherwise they'll be running the hallways. And you'd probably have to have somebody there, 'cause, again it's during other people's class time, and who knows? If they don't go back to the cafeteria, somebody might not know. Obviously their friends would, but they could just slip out and walk around the school eating their stuff and, or just say, you know, 'I need to go to snack machine' and they don't. And

they just go somewhere else, so that obviously could cause problems. Unless the kid's like, bullying for money, but , but I've never seen it before, but it's always possible. Anything's possible, so ...] 2CR

[And they're right when the student council said in here, 'yeah, if people are bullying people for lunch money, most likely, that won't change if the snack machine ... it would just the same thing.' It'd be, instead of buying lunch, they might buy a snack. And, so ... yeah ...] 1C

W: O.K. Um, well, ah, thinking in terms of goals, what are your goals for this? What do you want to accomplish in this letter to Mr. Hill?

[S: **I want to make sure I've my data, which is in here, the claim and warrant. I want to make sure about that.] 2¹C**

[And I also want to try my best to convince Mr. Hill and not use ... try to ... bribe him or anything. I just want to try to persuade him. I don't want to do anything, like, I don't want to start arguing with him. I don't want to have the debate with him. I just wanna ... 'cause he's the principal you know. _____ the decision, so you know, just, you know, try to persuade him. And if he doesn't, you know, I'll be like, you know, certainly a lot of people will be disappointed, but, nothing we can do about that.] 3²R

W: Good. Um, what some things you think you're gonna have to do to achieve the goals that you have?

[S: **Well, I'll have to make sure I have a really good statement, 'cause in order to persuade somebody, you need, really, well, *persuasive* writing. 'Cause if you don't, if you're just, like, 'I think we should do this. And I think we should do this. And this too', all about the snack machines. Then I'll be like, 'Yeah, you kept on topic' but if you don't actually *explain*, 'cause otherwise it'd be like, 'I want this, I want this, I want this. ' It's like you going to the candy store being like, 'Mom, I want that, that, and that.' And she'll be, like, 'Why? You have candy at home.' And you'll be like, 'Cause I'm hungry' or something, something lame. And she'll be like, well, when you get *home* ...] 3CR**

W: Good. Um, well, what do you think you'd like to do first?

S: Well, I'd like to create a good statement. And then plan, of course, what I'm going to say. The _____

[good statement and good reasons to support it, 'cause that's, I believe, a really important ... you need plenty of examples. I think examples and a good statement are kind of like the *bone* of the writing and, like, the meat is like all the examples, 'cause ...

W: O.K.

S: **that just helps makes it more ... reasonable. Examples and explanation. They're ... well, more the explanation, 'cause that's what gives it ... 'cause I mean, you could just have the bone, which is important obviously -- the statement and good examples -- but if you don't have that meat on there it's like, why bother?]** 3CR

W: O.K. Well, it's ... so, you've said that you're gonna basically try to come up with a good statement, a good example, um, some good examples ...

S: Mm hmm.

W: um, and, ah ... So, I guess I'm gonna ask you, how do you plan to plan?

S: Well, I kinda like just think it out, like something ... start out,

[I love to start out with very persuasive statements like, you know, 'Mr. Hill, I really think that snack machines should be turned on, if not, if not during the morning, then at least during lunch for students.' And then, you know, I ... like something like that to just kinda state what I'm gonna say 'cause if you're just like ... 'I, I hope you'll do this and that' in the statement, he'll be like, 'yeah, but ...' He kinda needs to know where you're coming from, 'cause otherwise he's gonna be like, 'why are you doing this?' But if you say like, if don't say like, if you're a kid or adult, he might be, like, 'who's saying this to me?'

W: Mm hmm.

S: **And so you gotta say like, 'I'm on student council, and I believe that we should have snack machines turned on.']** 3²CPR

W: O.K. Alright. Well, I guess I'll, ah, leave you alone to plan, so why don't you go ahead and do a plan.

S: O.K. Let's see ... hmm ...

(subject plans)

S: O.K.

W: O.K.?

S: Yep.

W: So, tell me, how did you go about planning this?

S: Well, I started with saying that I needed a strong statement to tell where I was coming from.

**[I made a list of pros and cons as my data. And then made a claim that ‘students should have the option of getting stuff from the snack machine.’]
2CP**

[And then my warrant was, ‘students work hard and if they forget their lunch they have, and have a bit of money, they can still eat.’] 3C

W: O.K.

[S: ‘Cause I mean, I think that ... I know some people like, um, I had a friend ... I still have a fr-, he’s still my friend but I don’t see has as much, in fourth grade, like ... he was very strict in what he ate, and he forgot his lunch but he didn’t like *anything* the cafeteria had that day

W: Mm hmm.

**S: ... so, he basically didn’t eat. I mean, he eventually, like, got something. I think one of the janitors is really nice and convinced him to go eat. Or somebody shared food with him, which we weren’t supposed to do. But I think if that happens, some people, a *lot* of people don’t like the school food, and if they forget their lunch, they’ll be like, ‘what am I supposed to do?’ Or, sometimes they don’t have money like, and, like, sometimes, like, I have some spare change and I give people a little bit of money but usually it isn’t *all* they need. So, but if they just need, like, a few cents to go get something from the snack machine, then they wouldn’t go hungry and they, they wouldn’t be complaining and it just makes us healthier. I mean, ‘cause, I mean, that’s one of the goals of school, kinda. ‘Cause P.E. and stuff, to make you healthy and, if you’re not gonna eat, you know, there’s nothing that the school can really do to say you have to eat. But they prefer you to, certainly.]
3CR**

W: O.K. Well, I don’t want to hold you back. (researcher gives form on which subject is to write letter) You can go ahead and write this letter to Mr. Hill.

S: O.K.

W: O.K. And, ah, remember I’m gonna ask you if you get to a point where you feel like you’re at a stopping place ...

S: Mm hmm.

W: let me know and I'll ask you a couple real quick questions.

S: O.K. ... (subject looks at watch). Let's see if I can get this done.

(subject works on letter)

S: O.K.

W: O.K., well, ah, what have you tried to say so far?

[S: **Well, I tried to say, here's my, my statement, that 'I'm with the student council and I think students should be able to purchase items from the snack machines'.**] r¹

[And then I just basically put like, my main reason for that, you know. 'If a kid forgets their lunch or has limited money, most of the time they don't want to charge, so don't eat. Sure the students perform better at school not being hungry. So with a few cents, a snack is able to be brought so the kid is not hungry. Not as many students will complain about being hungry and there will be more free choices.'] 2CR

W: O.K.

[S: **So, basically, that's what I put to kinda make him think about the *good* things about it. And not as much focus on the bad because I'm gonna get in that later.] 2CPR**

[And also go more into like what, if this happens, you know, kids wandering off and stuff, and like about maybe just limiting the amount, the, the kind of food that's in there ...

W: Mm hmm.

S: **like, maybe more healthy stuff, so maybe kids won't buy as much from there, but if they're hungry, certainly, I mean, maybe a bag of pretzels is better than nothing, I mean ... like maybe not as much, I can understand not having like, sodas or candy bars in there ...**

W: Mm hmm.

S: **maybe some, but ...] 2CR**

W: Well with what you've written so far, what goals do you think you've met?

S: Well, I think I've met the statement, as well as, um, pretty much, um, examples, which is ... and a lit-, some explanation in there, but I'm gonna get more into that later, so ...

W: Well, tell me a little more about examples. What have you, ah ... what examples do you have in there and how do they support your statement?

[S: **Well, many examples ... if somebody forgets their lunch, or has just some money but not enough to buy, actually *buy* something, 'cause I know most kids don't want to charge lunch, they just ... their parents'll get mad at them or something like that, so ... I just ... that's my main example, and so ... it supports my statement by saying that, you know, kids'll be hungry, and you know, you don't want that in your school, I mean, nobody'd really want that. And then, there's some explanations written there. Ah, it kinda explains itself really.] 2CR**

W: O.K. Good. Um, well, what do you think you might write about next? I know you mentioned a little bit but ...

[S: **Yeah, I'm planning to write about ... go more in depth to the things that, well, could go, can go *bad*, and how to limit, maybe, stuff in the snack machines. 'Cause I'm just, sure like, the reason they have, like, all the *candy* in there, like, after gym my friends would go walking out and me, and we would like, see that stuff, and I'm like 'Oh my gosh. There's Mike and Ike's in there. I love Mike and Ike's! Why can't we have them?' I mean, obviously, I don't think there'd be as much *candy* in there if we *could* get it from there, because those are mainly for people who are ath-, athletes and stuff, and so they'd like, they sugar kids, it gives them a lot of calories and they usually they burn 'em off and stuff, but ... since, you know, lately it's always been talking about obesity and stuff, it's' like, they might not put as much candy in there, maybe just take it out and put healthier snacks, but still snacks we'd like ...**

W: Mm hmm.

S: **like maybe potato chips with bay salt, or something like that ...] 3CR**

W: O.K. Well, I'll let you go ahead and write that, then. Sounds good ...

(subject works on letter)

S: O.K.

W: Alright. Did you ... oh, did you finish it?

S: Yeah.

W: Oh, awesome! O.K. Well, in this section, what did you try to say?

S: Well I tried to say that, bad things would happen like, you know, kids would bully and kids would wander around the hallways, but I said, like, um ... and also

[if you're worried about the stuff in snack machines just take off, out the junk, healthy stuff or put healthier stuff in, so kids won't always buy candy bars.] 2CR

[And also that, um, I put, however if bad things happen because of the snack machines being on, you could limit snack trips only to lunch ...

W: O.K.

S: **or you could just take away the privilege for all, 'cause, obviously, going to school'd be fine, and then I'd just like him to consider these, um, these proposals.] 2CR**

W: O.K. Um, what goals did you feel you met in this part of it?

[S: I feel I met that ... my explaining, and also telling him I knew there'd be disadvantages, because if you just said to somebody all advantages, um, they'll be like, 'O.K. That's nice that, all the good things, but, they want to make sure you know that bad things could happen.

W: Mm hmm.

S: **So, I just think that's very important to stress that.] 2CR**

W: O.K. Um, tell me about examples. What examples do you have that support your statement and how do you feel they support it?

[S: Well, in this ... this one I'm like, they kinda, it's kinda weird, they kind of opposed the statement, 'cause you need to show both sides ...

W: Mm hmm.

S: **And this one, 'cause it really just says that, the bad things that'll happen and this one .. and so ... that kind of supports it, the ways it can be helped by taking out the non-healthy stuff ...**

W: Mm hmm.

S: **... and things like that ...**

W: O.K.

S: **So ... but, still, if you don't tell any of the bad things that'll happen, they'll think, 'So, this is all gonna be good?!'] 2CR**

W: Mmm ... O.K. Excellent. Well, there's nothing you're gonna write about next, so I'm gonna ask you, um, now that you're finished with it, how do you feel about it?

S: I feel pretty good about it. Um, I think I basically covered everything ...

W: Mm hmm.

S: Yeah, I mean. I think that the claim and warrant ... data, that kind of helps. I mean, the data you always have, but the claim, I tried to make that in there. And the warrant ... it's like examples set off. I think I've got that throughout, so I accomplished that model ...

W: Good.

S: I think, in writing it.

W: Oh, O.K.

S: And then, um, I think I also did pretty good, just the _____. I wasn't trying to argue with him at all. I was just trying to say, you know, 'thank you for considering this' and 'thank you for reading it'.

[I was like, trying to be kinda polite, you know, kinda like a polite argument, you know, 'but I don't think that' ...stuff like that ...] 2R

W: O.K. Good. Um, well, you've said what your goals are pretty clearly. How well do you think you accomplished each, each of those goals?

[S: I think I accomplish-, accomplished them pretty well, I mean, obviously nothing's perfect and things can be improved. If I had more time, I mean, I could probably like write much longer if I had more time, but it'd be random, giant stuff, right? Like, I'd stress him out, but ...] 2R

W: O.K.

[S: Um, yeah, I think I basically accomplished it. I mean, I put, like, all the stuff, a good statement that, you know, let's him know where I'm coming from. And, um, the good things and the bad things, so he knows that, both sides of

the story, and how I think that if, you know, the bad things happen, they could be helped. So that's basically what I tried to express.] 2CR

W: O.K. Um, I'm gonna collapse a couple questions together. When it comes to your stat-, well, ah, well, first, do you feel your statement addresses prompt?

S: Yes.

W: O.K. And then, when it comes to, es-, especially the examples and the explanations, um, do you feel like your examples adequately support the statement, and do you feel that, ah, you've done a good job explaining how they support it?

[S: Yeah, I think so. I think the examples ... really help support the statement. ____, obviously, somebody might oppose it, but you made sure both sides ... 'cause they're like, you know, you, obviously you don't want kids to be hungry and stuff like that. That kinda, that kinda sympathy a little bit, you know, just, kinda, go like, 'You don't want kids to be hungry do you?'] 3²R

W: Well, that's good.

S: Yeah

W Um, well, do think you succeeded Mr. Hill in, ah, accepting your ...

S: Yes.

W: proposal?

S: If not, I think I came very close!

W: O.K. O.K. Alright. Um, is there anything else you can think of that you could, ah, say to convince him?

S: No, not really. Not at the moment ...

W: Alright. Well I think that does it. Excellent!

Transcript of Persuasive Task Posttest – Brian

[(researcher reads prompt; subject records thoughts on plan paper while prompt is being read – first three bulleted items on plan paper; researcher pauses while subject records ideas)]

S: O.K.

W: O.K. So, ah, before we ... is there anything else you want to jot down before I ask you a couple questions? ... before you plan?

S: No.

W: Alright. O.K. So ... (one of subjects papers is blown off table; he retrieves it)
O.K. Well, what does this prompt ask you to do?

S: Oh, are we doing questions now?

W: Mmm, yeah. We'll do questions first and then we'll do the planning.

S: O.K.

W: Yeah ... What does ... ah,]

what is this prompt asking you to do?

[S: It's asking me to, um, write a letter to, to Mr. Hill, um, about if I agree or disagree that we should have snack machines on during school hours.] 1C

W: O.K. Um ... what are some things that you, ah, that come to mind about this, ah, topic?

[S: Um ... well maybe it might make the kids hyper because sometimes ... I know, ah, some parents won't let their kids, like, eat sweets ...

W: Mmmm.

S: and maybe, um, if they eat that then they'll, um ... what's the word I'm looking for – they'll um, like, get hyper and stuff and they'll be, get yelled at and get in trouble ...] 2C

W: Mm hmm.

S: and stuff. And if ...

[and with the snack machine turning on at four, that doesn't really help because there's third bus wave kids ...

W: Mm hmm.

S: **and if they bring money, that's really not stop them ...**

W: Mm hmm.

S: **from getting anything because, I mean, they go to the cafeteria, the third wave, because the teachers leave by, after second wave ...] 2C**

W: Mm hmm.

S: right? I think. I don't know.

W: Mm hmm.

[S: **But, um ... what else did they say? ... (reads over prompt). Well, it says, he says first Mr. Hill believes students should be responsible for taking care of their food ...] 1C**

W: Mm hmm.

[S: **and it should be, um ... it's kind of their parents' job.**

W: Mm hmm.

S: **Make sure your kids eat. Make sure they have a lunch.] 2C**

W: Mm hmm.

[S: **I mean, that ... their parents aren't doing much of good job school-wise, 'cause if, if they don't care if their kids don't take a lunch or anything then ... they'd be um, like, crazy and ... not crazy ... why'd I say that? Um ... they'd be like, um ... they'd, they'd become unhealthy 'cause a lot of kids would probably like to eat more the junk ...**

W: Mm hmm.

S: **and they might, like, give some other kid their sandwich or apple or something, and then go over to the machine and buy a ... a soda with, and chips I mean ...**

W: Mm hmm.

S: **it ... it will make 'em unhealthy.**

W: Hmmm.

S: **especially the sport kids 'cause I'm ... sure they don't get sweets and soda ...**

W: Mm hmm.

S: **'cause they got to stay thin and active ...**

W: Mm hmm.

S: **so they might take that advantage to do that.] 2C**

W: Hmmm ... O.K. Um ... who do you think of your, as your audience for this essay?

[S: **Um. Mr. Hill. Again.] 1R**

W: O.K. And what are some things that you know about Mr. Hill that you might think about while you're ...

S: Well, he ...

W: preparing this?

[S: **hmm ... Well, I don't really know much about *him* 'cause I don't ... I don't, like, get in trouble and... *know* him, know him. I, um, I'm not sure ... I guess, well, I mean, he probably *would* say no, 'cause then that'd give him *more* referrals to sign, *more* parents to call, it would make his job more hectic.] 2³CR**

(subject writes "make job more hectic!" on plan)

W: O.K., so, jot that down ... good ... O.K.

S: O.K.

W: Well, actually, this is ah, good 'cause the, the next, um, question is, is ... you were kind of already getting to that. What are some things you think he already knows about ah, you know, kids and food and the snack machine issue and ... ?

[S: **Well, I'm sure a lot of kids *would* like that, I mean, *I* would but ... I mean to eat junk food all day ... 'cause I'm sure kids would take money like, and**

their parents not know, buy a soda and snack in the morning, then at lunch time ...] 2C

W: Mm hmm.

[S: **but, I'm gonna ... I'm, I'm disagreeing with this, but I'm gonna use the, um, kids that forgot a lunch or something. I'm gonna use that against it, with it? Because, I can like turn around and say 'Kids should be' ... 'Kids ... If, if kids forget their lunch, they well, they should have something to eat, but' ... do you, do you think this sounds? ...'but the parents should make sure that their children get a nutritious breakfast, and make sure that they get a lunch.'**] 2C

W: Mm hmm.

S: Doesn't that kind of use it against it?

W: Um ... I'm gonna let you make all those

S: O.K.

W: kinds of decisions, but ... O.K. You go ahead and ... (subject adds to plan)
I like that you're, you're jotting some things here. You're thinking. That's good.

(subject continues to add to plan)

W: O.K. ... Um ... well, you've already mentioned some things that you think Mr. Hill might have trouble accepting ...

S: Uh huh.

W: when it comes to this idea.

S: Yeah.

W: I was just wondering if there were any other things you can think of ...

S: Um ...

W: that he would have trouble with, with this idea of turning the snack machines on ... during the school day.

S: Kids'd be using it.

W: O.K.

- [S: **I mean, even though it would kinda help the school out and give it more money ...**
- W: Hmm ...
- S: **but ... I mean ...students don't need those snack things, see? It's not like they need it to live, or something. It's, it's not ... a must have.**
- W: O.K.
- S: **In fact, I ... they should take it away because it's on hours that it says it's not supposed to be on ... unless they say that so that kids don't go buy it.] 2³C**
- W: Hmm.
- S: But, it, he'd have trouble 'cause he'd have to ... like I said before, he'd have to keep ... signing papers for referrals and calling parents and, it would just ... make the, it would make chaos. That's what it'd make.
- W: O.K. Um ... Well, thinking back to the prompt again, ah, what are your, what are your goals? What are you trying to accomplish by writing this essay?
- [S: **Um ... hmm. I'm trying to either convince Mr. Hill if I agree with him or disagree with him, and then give reasons why I think so or not ...] 1CPR**
- W: O.K. Um ... ah, what do you think you'll have to do to achieve your goals?
- [S: **Um ... well, ... use that, use SEE with the warrant, ex- .. um, claim, and the, um, data.] 1CP**
- W: Oh, O.K. How, how is that going to help you do you think in achieving the goals?
- [S: **It's, it will help, the data will help me tell person what I know about the issue. The warrant will tell me why I think this way. And the claim ... oh, come on ... the claim's the statement. Yeah, and the claim tells the reader why ... not why I think this ... what I think.] 2CR**
- W: O.K. O.K., good ... good. Um ... Ah, so what would you like to do ... when you start working on this, what would you like to do first?
- [S: **Um, I'd like to start, um, like telling him that I agree with him and that, um, put the claim in here that I think that the snack machine should not be turned on during school hours.] 2¹CR**

W: O.K. Um ... let's see, how do you plan, you, you talked about the claim. How do you plan to come up with the claim?

S: Um, well, it's pretty much in what you think. I mean, it's pretty much, straight forward. It's like your S is SEE. Your statement. It's, what you're saying, like, my claim would be 'I agree with M ... I, I think that we should not have school snack machines ...

W: Mm hmm.

S: on during the day.' And that would be my claim. And then the data would be all the stuff in between. And then the *warrant* would be *why* I think it shouldn't be on.

W: Mm hmm.

S: *Why* is it a bad idea. Which, I've pretty much already said like, it would make kids hyper. And kids won't listen, and it would make his job, like, harder to complete, and

[it'll make the school worse because ... MS, MS, MSA's coming up ... no, it already came ... but tests and stuff, like if, students would fail because they're like, hyper and can't concentrate ...] 2C

W: O.K. Alright, well I, I want to ask you ... I'm just gonna ask one more question and kind of put it together ...

S: Mm hmm.

W: 'cause your already kinda doing this and I, and you have a lot of good ideas ...

S: Mm hmm.

W: Um, ah, you already talked about coming up with the statement. Um, how are you going to come up with examples, and explain how your examples support your statement?

S: Isn't that pretty much the warrant?

W: What ... Whi, which one?

S: The, the one that ... the question that you just read.

W: Oh, O.K. So, how, ah, how would you come up with ex... Maybe I should have asked them separately. How would you come up with examples?

S: From the ... um, the ... um, oh gol, what's it called? *Passage*.

W: Mm hmm.

[S: Use the data in the passage to come up with my examples, and then ...

W: O.K.

S: and then explain them. You can kinda use the warrant a couple times.

W: Oh, how, how so?

S: Like you can have like, um ... you can have like, the statement, your claim, you can have your claim then you can have a data, then you can have another, a little warrant to go along with that piece of data, and you can have, like, little warrants and then at the end have the big warrant.] 2CP

W: Hmm.

S: And ... stuff like that.

W: That sounds really cool.

[S: See, you can kinda ... um ... ex- ... have the warrant go from everything, like, 'it would make kids hyper. Why? Because if they eat junk food' ... no, wait ... wait ... 'if, if students eat junk food, then, it ... it is bad for some students to eat junk food.' That would be my data. And then, why? It would make kids hyper, and it would make your job harder to complete. So you can kinda do like little things like that, and then have the big warrant at the end.] 3CPR

W: O.K. And ah, I think you really hit this but I'm just gonna throw it out there just ...

S: O.K.

W: ... just to be sure. So, how exactly are you going to explain how your examples support the statement?

[S: Um, ... going back to same topic, ah, not getting off topic.] NC²

W: O.K. Not getting off topic. O.K. Um, alright. Well, I want you to, ah, it looks like you already have a plan started ...

S: Mm hmm.

W: but I want you to have all of it. Take more time to plan.

S: O.K.

W: And so, I'll leave you alone while you plan, O.K.?

S: O.K.

(subject plans)

[S: O.K. ... Let me see how many I got ... (subject reviews plan) ... Oh, wait a minute ...

W: O.K

S: Let me ...

W: Alright. Well, tell me, how did you go about planning this?

S: What'd you mean?

W: Um, when you planned this ...ah ...

S: Mm hmm.

W: tell me about what you did.

S: Well, I ... I made a list of things that I could put in my letter. And, I mean, not ... not like the whole thing like, trying to brief ...

W: Mm hmm

S: that I know what I'm talking about. And um, yeah, I think that's ... it for that question.

W: O.K. Um, well, I guess it's time to go ahead and write.

S: O.K.

W: So, I'll turn this over to you, and, if you remember how we did this before ...

S: Uh huh

W: what I'd like you to do is, ah, go ahead and write.

S: O.K.

W: *And when you feel like you're done with ...*

S: *a section.*

W: *a section of it, right, and you feel you ...*

S: *Then you just ...*

W: *like you've met a goal or ...*

S: *O.K.*

W: *something like that, let me know*

S: *O.K.*

W: *Thank you.*

(subject works on first section of essay)

S: *I've got a question.*

W: *Sure.*

S: *They said that it would take away money from the school, if they had to go down to the office to borrow money. Well, isn't it pretty much going right back to the school?*

W: *I don't know if it says that in there. I mean, you could check.]*

[S: 'Cause I mean, if ... if the cafeteria is in the school. They have to pay some of the money to the office for giving them ... for letting them, I don't know, work there and stuff, like a tax ... but ... wouldn't, wouldn't it pretty much just come right back at, back to the office?

W: *I'm not sure*

S: I mean, if ... if a student borrows money and has to go to the office ... since it's in the same building, it would come back, I guess. Oh well ...] 2C

(subject resumes work on essay)

S: *O.K*

W: *O.K. Um, well, what have you tried to say so far?*

S: O.K. Well, I've got: (student reads from essay)
"I agree with Mr. Hill. School snack machines should *not* be on during school hours. If some students eat sweets or junk food it will make them *hyper* because maybe that student might talk a lot if they eat a candy bar. With students hyper kids will be sent down to the office, so this will make more referral papers to sign. It will make your job harder. Yes if students forget their lunch they should eat but it is the parents, job to make sure the kids breakfast and pack them a lunch."

W: O.K. Well, in terms of goals ... (papers blow away; subject retrieves them)

W: O.K. Let me try that again. O.K. So, thinking about the goals you had for writing this ...

S: Yeah.

W: what, what goals ... tell me about a goal you feel you've met.

S: Well, I think I have told Mr. Hill some good reasons why they shouldn't be on. And that it's the parent's job, as a *parent*, they *should* make sure their kids get a good, nutritious lunch.

W: O.K.

S: Oh, I've got another thing to add to my plan.

W: Oh. Go ahead.

(subject adds to plan)

[S: I've got, I just added, 'It would make the students fat. And in P.E., they wouldn't be able to participate as much, as much.'] 2³C

W: Oh, O.K. ... Are you gonna ... do you think that can find its way in there somewhere?

S: Yeah.

W: Oh, excellent. O.K. Um, are there any other goals you feel you've met so far?

S: Um ...

W: Other than what you've said?

S: Well ... I've told him like, oh yeah, I've used that little, the little claim. I've used the claim which is, Mr. ... it shouldn't be on during the school hours, and I've

used some of my details that I'm using, those little warrants, like for example, I've got, 'if some students eat junk food it will make them hyper be-' and then this is the warrant, this is the warrant part, 'cause maybe the students might talk a lot if they eat a candy bar.' I mean,

[that stuff affects people differently.] NC²

W: Um ... what are some ex-, have you written about any examples yet?

S: Yeah. The, ah, like, um, ... like, they would be sent down, and it'd make it ... they'd send, they'd send 'em down to the office 'cause I know it, they wouldn't get in trouble once and stop, because ... so it would make his job a lot more tough to complete.

W: O.K. And, well, how does that support your statement?

[S: Um, because it's giving him reasons why it will affect not only *him*, but everybody around him. And it would make school, be, um ... it wouldn't be very nice if you had students running around ... um, hyper on candy bars. Yes, but then you have that nice, relaxing, outside thing that they can all let it all out, though. But, that's only like, fifteen minutes. Huh. Not enough time, probably.] 3CR

W: O.K. Um, well, what do, what do you think you're gonna write about next?

[S: I think I'm gonna put that part in about the gym. And then, Oh, wait a minute! I used the positive thing to help my argument. I've got like, it, it should be the parents' part to make the, um, kids' lunch.] 2C

W: Mm hmm.

[S: I used this too! So, I got ... (subject checks off items on plan paper as he names them) I've used some strong examples. I've used my claim. I've used my ... I've used *this* thing. I haven't used warrant. I have a good statement. So I've got ... I need to have a strong warrant, and you put the warrant in ...

W: O.K.

S: in this part. And then if I can think of anything else that I can add in to make him side with me ...] 2CR

W: Alright.

(subject says he is cold and subject and researcher move to nearby table in sun)

[S: Don't they serve, like, healthy things in the lunch room? Don't they have like ... Isn't everything like low fat something?

W: You know what? I honestly don't know.

S: 'Cause their milk says 'low fat milk', and, stuff but I ...

W: Hmm ...

S: **some of the stuff doesn't taste *real*, sometimes.] 2C**

W: Hmm.

(subject resumes work on letter)

S: O.K. I'm done.

W: Oh, you're done with the whole thing? Alright, well, first let me ask you about the, the part you just wrote.

S: O.K.

W: O.K.? Um, what did you try to say in this section of it?

S: Well, I said ... Students ... oh (reads aloud from essay)
 "Students over a period of time will get fat from eating chips, candy and soda. This will make the students not participate much in gym.

[This will lower the student's grade.] 3²CR

Also this will make students unhealthy. So back to my statement. The school snack machines should not be on during school because, as I've said, it will lower students grades, make your job hard and students will fail classes due to being hyper. I disagree with this."

W: O.K. Um, in, in that part of it, what goals do you feel you've met?

[S: I've met to have the warrant. I have the part about being fat. And it will just make 'em unhealthy and, and it'll not be very pleasant to see all these fat, unhealthy kids walk around the school. That's not good.] 2CRS

W: O.K. Um, tell me about examples ...

[S: I just thought of something! Whoops. I just thought of something else!

W: O.K. Go ahead and put it in wherever you want.

- S: **You know how some people like, get really ... big on sports and stuff?**
- W: Mm hmm.
- S: **It like ... dads and sons? Yeah. O.K. If they're fat ... If, if students are getting fat all of a sudden, their parents are gonna wonder what the school's feeding 'em.**
- W: Mm hmm.
- S: **And they could sue the school for having the snack machines on. So ... so having, I guess I could write, 'So, having snack machines on during the day could cause parents, um, complaining about their kids being fat.'] 3C**
- W: Good.
- (student adds this idea to letter)
- S: O.K.
- W: Um, well, in addition to the example you just talked about ...
- S: Uh huh.
- W: um, ah, with, with kids getting fat ...
- S: Uh huh.
- W: and parents saying, "Hey, what are you feeding my kid here?"
- S: Yeah.
- W: Um, are there some other ... well, ah, well, first let me ask, ah, how does that support your statement?
- [S: **Because, um, I wouldn't, I, if I was Mr. Hill I wouldn't want tons of calls coming in and parents wanting conferences one right after the, another why their kids are fat, saying the same thing over and over. 'Cause your students are buying snack machine, ah, your students are buying things from the snack machine. And then that will lead to a whole big argument and stuff. Just cause chaos and more time wasted.] 2CR**
- W: Mmm ... Are there any other examples in this part?

S: Um, well I've got the part that I've said before like, it'll make his hard, his job harder, and it would lower students' grade and

[they would fail classes.

W: O.K. And how does that support your statement?

S: **Because, Mr. Hill wants everybody to success, and if they're not ... if they're eating the junk food and that's what's causing, maybe causing it, their, their failure, then, I don't, if I was him, I would want no snack machines so that no students fail ... they'd do well in school.**

W: Mmm.

S: **I mean, I know some kids. They get grounded if they get, like, a C, or something below. So, just ... make the students mad at the teacher, I mean, at the principal, but, it wouldn't really be his fault.] 2³CR**

W: O.K. Um, well, you're not going to write about anything next so let me ask you about the whole thing.

S: O.K.

W: Now that you're done, what do you think of this essay?

S: I think I did pretty well.

W: O.K.

S: I did better than that gum thing.

W: O.K.

S: *Way* better.

W: O.K. ... Um ... Ah, thinking about, thinking about your goals again ...

S: Mm hmm.

W: and this is kind of at the end of it, asking again, so the goal again was to ...?

S: Persuade Mr. Hill, or agree with Mr. Hill, to or not have snack machines on during school hours.

W: O.K. Um ... then, so your statement was, what?

S: I agree with Mr. Hill and, and that he shouldn't have it on during the day.

W: O.K. And you feel your statement addresses the prompt?

S: Mm hmm.

W: O.K. And, ah, again, just thinking back on your statements, do you think that you've ... that the, ah ... or the examples, do you think the examples adequately supported your statement?

[S: **Yeah, 'cause it all pretty goes back of *why* it shouldn't be on.**

W: O.K. Um ...

S: **'Cause if it's not on, you wouldn't have all these problems.] 2C**

W: O.K. O.K. Um ... do you think you've, that you've succeeded in persuading Mr. Hill to accept your statement?

S: Yeah. I mean, I don't really have to if he says 'no' to it already, but ...

W: Mm hmm. Well, also, what about, um ... what about, ah ...

S: The council.

W: The council, yeah. 'Cause you're kind of agreeing with Mr. Hill.

S: Yeah.

W: Saying, 'Yeah, I agree with you buddy.' So in some way, so, how ... do you think that you may have succeeded in convincing your fellow student council members?

[S: **Yeah. 'Cause I mean, I'm sure they don't want to be fat. I mean, especially if some of 'em are girls, they're like, 'Oh my God! Am I fat?' And they ... they worry too much about what they look like.**

W: O.K. Ah ...

S: **Probably a lot of people do.] 2C**

W: Yeah Um, is there anything else that you could do to convince ...

S: Um ...

W: people who are in favor of this? Who say ‘Yeah, we want snack machines here.’
Is there anything else you can think of that you might say to convince them?

[S: **No. I think I’d kind of turn ‘em away. ‘Cause there’s this thing that if you’re like, overweight now, you know, they’ve got this thing, and you call, and they will digitally enhance what you’ll look like when you’re 40 if you should keep eating the way you are.**

W: Mmm.

S: **So that would kind of turn ‘em away if they’re fat and stuff, and they ...**

W: O.K.

S: **Unless they’re stupid and they don’t care.] 2³R**

W: O.K. Alright. Well, I think that’s it.

Transcript of Persuasive Task Posttest – David

(researcher gives subject all materials to write letter; reminds subject to stop when he feels he has completed a part of the letter so that the researcher may ask him questions)

W: O.K. So, ah, what does this prompt ask you to do?

[S: What the prompt asks me to do is ... to write a letter to Mr. Hill explaining whether or not we think the snack machines should be turned on during ... before school, during lunch time, and still after school.] 1C

W: Mm hmm.

S: Which it isn't always.

W: O.K. Um, what are some things that come to mind about this topic?

[S: That I'm going to need to use the data, claim, warrant, and ...] 2¹CP

W: O.K. And also, thinking too about the topic of, ah ... the proposal itself. The snack machine.

S: Oh ...

W: You know, food ... kids with food in school. That sort of thing.

[S: Well ... I guess it's a privilege that we should be given to try,] 2¹C

[because ... if we *do* start getting more grades and we ha-, and we *do* stop using more, um ... lunch money from school ...

W: Mm hmm.

S: then, um, it would be better for the school ... so they can have reasons instead of just saying, um, 'I'm so special, that's why' ...] 2CR

W: Hmm.

S: or something like that.

W: O.K. Um, who do you think of as your audience?

[S: Mr. Hill, 'cause it says I have to write a letter to Mr. Hill, so ...] 1R

W: O.K. Anything you know about Mr. Hill that you'll think about or take into consideration as you, as you write this?

[S: Well, he always says, um, that because of your actions you can either earn good rewards or bad rewards. And so... like if you do, if you get like ... sometimes, like we'll be doing really good and he'll say, 'Today I trust you so much that I'm going to allow you to go out a little early.' Other days, he might say, at lunch, um, he might say, 'I ... Yesterday and the day before weren't so good. I'm not gonna let you go. I'm gonna only give you ten minutes outside today.'] 2R

W: Mm hmm. O.K. Good. Ah, what are some things you think Mr. Hill might already know about the topic?

[S: Um, well I know that he said that, um, people will get bullied for snack machine money.] 1C

W: Mm hmm.

[S: Um. That there will be a problem cleaning it up.] 1C

[And then that staff doesn't want to stay in the morning to supervise people eating food there ...

W: Mm hmm.

S: in case they fool around.] 1C

W: O.K. When it comes to this proposal of turning the machines on, is there anything you can think of that the audience might have, ah, Mr. Hill might have difficulty accepting, and, and why.

[S: Well, one of the things might be the bullying thing he suggested because ... we just got a talk about gangs, and about poking people and breaking skin ...

W: Mm hmm.

S: so, if people are bullying, they might say, 'Let's start a gang and take people's lunch money, and then we can get stuff.'] 2CR

W: Mm hmm. O.K. Um, well, in writing this, what are your goals? What are you trying to accomplish in writing this?

[S: I'm trying to persuade Mr. Hill to say yes to the snack machine money. Or at least try it for like maybe a w-, day or two, and see if it works out.] 2¹CR

W: Oh, O.K. Um, what do you think you'll have to do to, to achieve that goal?

[S: Persuade him using ... data, a claim, and a warrant.] 2¹CP

W: O.K. Um, in order to do that, what do you, ah, what would you think you'd need to do first? Where do you want to begin?

S: I will probably plan.

W: Oh, O.K. Um, in planning to plan ... ah, I just wanted to, I'm, I'm going to put these three questions together. Obviously you're going to have to come up with a statement. You're gonna have to come up with some examples. You're gonna have to come up with ways to support the examples, like, how do they support your statement.

S: Yeah.

W: How, how are you gonna, how are you gonna to make that happen?

S: You mean what is my, like, planning strategy?

W: Yeah. How are you gonna come up with a statement, examples that support the statement, and explain how the examples support?

[S: Well, I'll use the data-claim-warrant chart.] 2¹CP

W: Oh, O.K.

[S: And then I will use data from here, and data from my personal opinion, because I'm writing the letter, and not, like, another person.

W: O.K. So you, so you may find yourself adding some things to what's there ...

S: Correct.] r¹

W: what's in the prompt already. O.K. Um, alright. Then I'll leave you alone to plan.

S: O.K.

W: Thank you.

(subject plans)

S: I was wondering ...

W: Mm hmm.

S: Can I sort of *twist* the proposal?

W: You mean alter it somewhat?

S: Yeah.

W: Certainly, yes.

S: Sweet.

W: Mm hmm. You can ... I guess we could call it, 'modify' it.

S: O.K.

W: Mm hmm.

[S: 'Cause I was just thinking, instead of turning it on during breakfast, or like, before school and lunch, I was thinking of turning it on for the whole day ...

W: Mm hmm.

S: but like ... sort of have, maybe ... I don't know, not somebody guarding it but, instead of having it out by the gym ...

W: Mm hmm.

S: we could put it in the cafeteria ...

W: O.K.

S: and then, like, if someone were to walk in, the cafeteria ladies could obviously hear something dropping or something of the machine working.] 3C

W: Mm hmm. Yeah. You can do that.

S: Sweet.

(subject resumes work on letter)

S: I've finished my planning.

W: O.K. Um, can you tell me a little bit how, how'd you go about planning it?

[S: Um, I did do the data, claim, er, yeah, data, claim, warrant thing ...

W: O.K.

- S:** And I sor-, sort of mix it with, like, one of those scales that, like with the weights ...
- W: Right ...
- S:** For the data I put a big plus here, and then I listed all the positives ...
- W: O.K.
- S:** and then I put the minuses and listed all the minuses ...
- W: O.K.
- S:** and it still came out even, but the plusses have more of a reason, and the minuses are just like, little things that like, always happen.] 2PR
- W: O.K. ... O.K., um, well, can you tell me, ah, and, O.K., beyond the data, how else, what did you do from there?
- S: Um, then I went to claim ...
- W: O.K.
- S: and I made a statement that we should move the machines into the cafeteria, and then turn them on ...
- W: Mm hmm
- S: all day or at least until everybody goes ...
- W: Mm hmm
- S: and then, like, that was my statement.
- W: O.K.
- [S:** And then my warrant is, like, saying, I think we should do this because we should have a choice in what we eat. I mean like, if you pack a lunch, you still get a choice. But say like, your mom has to go to the grocery store that day, then you ... and you like need a pack, you want a pack of cookies or something, something small like that. You can just go to the machine, plug in a couple coins, get your cookies.
- W: Mm hmm.

S: And like, you can't do that with the, with a whole lunch. If you buy a whole lunch, what's the point of that? 'Cause you may not like the thing they have there. Where if you have a machine, you have a variety.] 3CR

(Student begins composing. He writes the letter Mr. H. without stopping.)

W: Alright. O.K. Um, so, um, in this letter, in your own words, what have you, what have you tried to say to Mr. H.?

[S: Um, I've tried to tell him that moving the snack machine to the cafeteria and turning it on is good for the school, because people will be able to concentrate more. They won't have to worry about, like, eating problems. And they'll be able to eat something in the morning to get through until lunch. And eat something at lunch.] 2CR

W: O.K. Um ... ah, in terms of the essay overall, what do you, what do you think of it? What do you think of this essay?

S: What do you mean by that?

W: Um, what, what, what are your thoughts about it? I mean just kinda overall, if you said, 'You know, I think I did _____' or ... How, how do you feel about it?

[S: Um, I feel that if I were really, really writing this letter to Mr. Hill, that I could probably persuade him to some extent ...

W: Mm hmm.

S: and not just something like, far off the wall, like, saying, 'You should let us bring drugs to school' or something like that 'because I said so', so ...] 2R

W: O.K. And then, I know, you said, you asked me, I think the words you used were, 'is it O.K. if I *twist* ... *twist* it a little bit'

S: Yeah.

W: You know, I thought that was kind of cool. Well, thinking about the goals that you had with this, um, what were your goals, and how well do you think you accomplished your goals for this piece of writing?

S: Well, my goals were to persuade Mr. Hill, and ... um, letting us move the snack machine to the cafeteria, and turning it on, in a persuasive letter ... assuring that I have data, claim and warrant, and I believe I've hit those three things that I wanted to hit ...

W: O.K.

S: and that, I was able to say what I wanted.

W: O.K. Good. Um ... well thinking of data and claim and warrant, did you feel like the claim addressed the prompt?

S: Um ... I guess even though I twisted it ... 'cause ...

W: O.K.

S: um ... they told me to write a letter, er like, they said the student council wanted something, and since I kinda twisted it ...

W: Mm hmm.

S: which you know, and I put it in my writing ...

W: Mm hmm.

S: I believe I did that.

W: O.K. Actually, I, I realized I could have asked you this question a lot better. Um, with the data that you had here ... why did you decide that the best thing would be to, to kind of twist it, as you say?

S: Well ...

W: What was here that made you decide, 'I'm think I'm gonna decide to come to this conclusion?'

S: Well, 'cause ... um, out in the hallway, er ... um, so the question is, the data, why I said to twist it using my data?

W: Yeah, 'cause you have that idea of, of, of maybe coming up with something different, like a different thing to propose, and so I thought, how did ... in looking at the data that you had, why did you decide that that would be the best way to go with it?

[S: **Because you can always, like ... you can always like, if you put it, something in the cafeteria, then it's not an easy access room like just putting it in the hallway ...**

W: Mm hmm.

- S: **I can understand for the people who do sports, but the school isn't supposed to be *for* sports, it's supposed to be *for learning*. And since you're demonstrating that you have this time that you have to eat so that you can continue learning, it would be better if, you were to put this thing that everybody likes, or something like that, in the cafeteria instead of just putting it out in the hallway where everybody can reach it ...**
- W: O.K.
- S: **so that only secluded people can get it.] 3CR**
- W: O.K. Well, that's, that's kind of interesting. Um, I want to ask you about your examples and explanation, you know. Or, ah, you know, we would call it data, but then that data kind of becomes examples when you use it, you know? Um, in terms of what you decided to put in your letter to convince Mr. Hill about moving it into the cafeteria and kinda leaving it on all day, tell me about your examples, and how you feel the examples that you used support your proposal of moving the machine.
- S: Well ... in moving the machine, people will be able to get the food in the, in a place where the food is supposed to be ...
- W: Hmm.
- S: I mean, you can also use it as a privilege, in some respects ... so that moving it in here makes, and not just like turning it on at certain times, when you move it in here, you like ... you're making it so that not everybody can get it ...
- W: Mm hmm.
- S: I guess ... and that ... I mean, just, like, I guess I'll use one example. Some people don't have time for lunch ...
- W: Mm hmm.
- S: Well, like, the proposal is to move it into the cafeteria, turn it on, and let ... the caf-, and you'd be able to use the cafeteria in the morning ...
- W: Mm hmm.
- S: Well, sometimes there's like, excuses and sometimes there's not ... so ... I'm sorta gettin' lost around here, a little bit, 'cause ... yeah ... so the data is why they claim ... yes ... sorry, I'm just ... gettin' ...
- W: Oh, that's O.K.

- S: What was the question again? Just, ah ...
- W: Ah ... ah, with the examples that you decided to use, the things that you pulled out of the data and decided to actually use in the letter, as examples ...
- S: Oh ...
- W: I was thinking about those and, um, I was wondering, um, how you picked those and how you think the, the examples that you chose support this idea, this 'twist' idea that you had of, you know, let's change the proposal a little bit and, and move the machine. Which I think you were answering that pretty well ...
- [S: **Um ... because if we were to just leave it on in the hallway, then like, there would be *more* bullying and stuff, because you can't have a teacher sitting out there in the hallway, and I'm sure the custodians don't want to do that.**
- W: Mm hmm.
- S: **But if you move it into the cafeteria, that's *solving* the bully problem, which is one of the examples ...**
- W: Uh-huh ... yeah ...
- S: **of Mr. Hill gave why he *didn't* want it.] 2CR**
- [And I used an example with a solution to throw it back at him.] 3CPR**
- W: O.K. Very good. Yeah. Excellent. Um, can you think of any other examples? That was kinda cool. Any other things that you kinda decided to use ...?
- [S: **Um ... I guess, one of my other negative ones might be ... that the staff will have to watch the cafeteria and the snack machine so that people aren't bustin' up the snack machine for it.**
- W: Mm hmm.
- S: **Um, like in the cafeteria, I know, I've known this from before, it just gets really quiet in there, 'cause like, I was at play practice, you know once, and then we had to go through the cafeteria, and it was like, silent in there. So if, like, the people in the back are making food and stuff, er, the lunch, and then they hear somebody put in money, and then you hear the little beeeeeeeep or whatever, and so they can come out and say ... or they can say 'Who is it?' or, at least come out ... 'cause I don't think the teachers should be using it, 'cause they've got their own, like, teachers' lounge with everything and stuff ...**

W: Yeah ... yeah, we do ...

S: **so ... they would be able to hear it and they wouldn't have to watch. Unless, of course, you're deaf, which is your problem, not the school's.] 2³CR**

W: Alright. Ah, well, just out of curiosity, because you mentioned it, um, tell me a little about your warrant. How did you, ah ... in, in, in connecting it all, what did you decide to ... how did you connect the examples to the, to the statement with your warrant?

[S: **Um, well, school food isn't always a choice. I know I don't like school food. And so ... and I don't think it's fair if you, if you're like, if your mom packs, like, your lunch or something ... if your mom doesn't have time to pack your lunch, or she was working the night before, and then say you overslept by accident ...**

W: Hmmm ...

S: **'cause we're humans and we make mistakes ...**

W: Mm hmm.

S: **we should be able to go to school, pick up a, like, maybe, pack of crackers, and eat *that* at school.**

W: Mm hmm.

S: **and that ... so I'm saying that we should have the choice of what we want to eat, and not just the school saying 'O.K. This is what we're having for lunch today because I said so.'**

W: Mmmm ...

S: **I mean, you could always pack lunch, but sometimes you don't have the time, and you have to live with what you get, so ...] 2C**

W: Alright, um. O.K, ... ah ... I think you said this already, but I'm gonna ask you the question again anyway. Um, do you think you've succeeded in persuading Mr. Hill, and if so, ah, why?

[S: **Well ... with my gum essay, um, I also wanted to hit on the negatives that he either suggested or was, it has happened in the past and that's why the banned gum. So like for whatever reason they don't on the machines, like bullying for money, have to watch, litter and stuff, well, for all those, I was**

able to say, ‘Oh, well, we can twist this, provide a punishment, or a solution to it and then, so you don’t have to worry about that problem.’] (2)

W: Mm hmm.

[S: And all the positives were positive, and not like, something like, ‘Well, we should do this because the kids say we should’.] 2CR

W: O.K. So, if I’m understanding you right, you’ve found, ah ... ways to ... use ... his points of view or his concerns, you able to address them, and kinda flip ‘em around.

S: Yes!

W: O.K. Cool. Um ... ah, is there anything else you can think of that you might add to this, you know, of course you don’t have to write it, but anything else you think of that might be able to put in there that could, that could convince him?

[S: No, not really. ‘Cause ... in my opinion, it’s ah ... you, you can only say so much and then, otherwise, you have to drop it if he says no ... so ...

W: Oh, O.K. So just kind of, ah, thinking about your audience, like he doesn’t have all day to ...

S: Yeah. If you keep going on, ‘We should do this because blah blah blah blah blah’, he’s eventually gonna just say ‘no’, ‘cause that’s what I do with my mom. My mom says ‘maybe’ and then I keep bribing her and bribing her, then eventually she gets so mad she says, ‘no.’ So, I’ve learned to stop it at some point.] 3²R

W: Alright. Well, guess what? We get to stop it at this point.

S: Sweet.

W: Alright.

References

- Applebee, A. N., Langer, J. A., & Mullis, I. V. S. (1986). *The writing report card: Writing achievements in American schools* (Report No. 15-W-02). Princeton, N.J.: Educational Testing Service.
- Applebee, A. N., Langer, J. A., Jenkins, L. B., Mullis, I. V. S., & Foertsch, M. A. (1990). *Learning to write in our nation's schools: Instruction and achievement in 1988 at grades 4, 8, and 12*. Princeton, N. J.: Educational Testing Service.
- Aristotle. (1991). *The Art of Rhetoric*. (Trans. H. C. Lawson-Tancred). New York: Penguin.
- Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition*. Hillsdale, NJ: Lawrence Erlbaum.
- Bogdan, R. and Biklen, S. K. (2002). *Qualitative research for education: An introduction to theories and methods*. Upper Saddle River, NJ: Pearson.
- Borchers, T. A. (2002). *Persuasion in the media age*. Boston: McGraw Hill.
- Britton, J., Burgess, T., Martin, N., McLeod, A., and Rosen, H. (1975). *The development of writing abilities*. New York: Macmillan.
- Bruer, J. (1993). *Schools for thought: A science of learning in the classroom*. Cambridge, MA: Harvard University Press.
- Bruner, J. S. (1975). From communication to language: A psychological perspective. *Cognition*, 3, 255–287.
- Burkhalter, N. (1995). A Vygotsky-based curriculum for teaching persuasive writing in the elementary grades. *Language Arts*, 72, 192-199.

- Chambliss, M., & Calfee, R. (1998). *Textbooks for learning: Nurturing children's minds*. Malden, MA: Blackwell Publishers, Inc.
- Corbett, E. P. J., & Connors, R. J. (1999). *Classical rhetoric for the modern student* (4th ed.). New York: Oxford University Press.
- Crammond, J. G. (1998). The uses and complexity of argument structures in expert and student persuasive writing. *Written Communication, 15*, 230-268.
- Crowhurst, M. (1988). Research review: Patterns of development in writing persuasive/argumentative discourse. (Eric Document Reproduction Service No. 299 596).
- Crowhurst, M. (1991). Interrelationships between reading and writing persuasive discourse. *Research in the Teaching of English, 25*, 314-338.
- Daggett, W. (2004). Rigor/relevance framework. International Center for Leadership in Education.
- Emig, J. (1971). *The composing processes of twelfth graders*. Urbana, IL: National Council of Teachers of English.
- Englert, C. S., Mariage, T. V., and Dunsmore, K. (2006). Tenets of sociocultural theory in writing instruction research. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 208-221). New York: The Guilford Press.
- Evens, H., & Houssart, J. (2004). Categorizing pupils' written answers to a mathematics test question: 'I know but I can't explain'. *Educational Research, 46*, 269-282.
- Everson, B. J. (1991). Vygotsky and the teaching of writing. *The Quarterly, 13*(3), pp. 8-11.

- Fahnestock, J., & Secor, M. (1983). Teaching argument: A theory of types. College Composition and Communication, 34, 20-30.
- Flower, L., & Hayes, J. R. (1977). Problem-solving strategies and the writing process. *College English*, 39, 449-461.
- Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication*, 32, 365-387.
- Fulkerson, R. (1988). Technical logic, comp-logic, and the teaching of writing. *College Composition and Communication*, 39, 436-452.
- Fulkerson, R. (1996). *Teaching the argument in writing*. NCTE.
- Gall, M. D., Borg, W. R., & Gall, J. P. (2006). *Educational research: An introduction*. White Plains, NY: Longman.
- Glynn, S. M., Britton, B. K., Muth, K. D., & Dogan, N. (1982). Writing and revising persuasive documents: Cognitive demands. *Journal of Educational Psychology*, 74, 557-567.
- Golder, C., & Coirier, P. (1994). Argumentative text writing: Developmental trends. *Discourse Processes*, 18, 187-210.
- Graham, S. (2006). Strategy instruction and the teaching of writing: A meta-analysis. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 187-207). New York: The Guilford Press.
- Hayes, J. R. (1996). A new framework for understanding cognition and affect in writing. In C. M. Levy and Ransdell (Eds.), *The science of writing: Theories, methods, individual differences, and applications* (pp. 1-27). Mahwah, NJ: Earlbaum.

- Hayes, J. R. (2006). New directions in writing theory. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 28-40). New York: The Guilford Press.
- Hernandez, A., Kaplan, M. A., & Schwartz, R. (2006). For the sake of argument. *Educational Leadership*, 64, 48-52.
- Hillocks, G. (1995). *Teaching writing as reflective practice*. New York: Teachers College Press.
- Hillocks, G. (2002). *The testing trap. How state assessments of writing control learning*. New York: Teachers College Press.
- Hillocks, G. (2011). *Teaching argument writing, grades 6-12: Supporting claims with relevant evidence and clear reasoning*. Portsmouth, N. H.: Heinemann.
- Huot, B. (1990). Reliability, validity, and holistic scoring: What we know and what we need to know. *College Composition and Communication*, 41, 2, 201-213.
- Jolliff, W. (1998). Text as topos: Using the Toulmin model of argumentation in introduction to literature. *Teaching English in the Two-Year College*, 151-158.
- Kellogg, R. T. (1994). *The psychology of writing*. New York: Oxford University Press.
- Kneupper, C. (1978). Teaching argument: An introduction to the Toulmin model. *College Composition and Communication*, 29, 237-241.
- Knudson, R. E. (1992). The development of written argumentation: An analysis and comparison of argumentative writing at four grade levels. *Child Study Journal*, 22, 67-84.
- Koulzin, A. (1986). Vygotsky in context. In L. Vygotsky, *Thought and language*. A. Koulzin (Ed.). Cambridge, MA: MIT Press.

- Krathwohl, D. R. (2009). *Methods of educational and social science research*. San Francisco: Jossey-Bass, Inc.
- Kroll, B. M. (1978). Cognitive egocentrism and the problem of audience awareness in written discourse. *Research in the Teaching of English*, 12, 269-281.
- Kvale, S. (2008). *InterViews: Learning the craft of qualitative research interviewing*. Newbury Park, CA: Sage Publications.
- Langer, J. A., and Applebee, A. N. (1987). *How writing shapes thinking*. Urbana, IL: National Council of Teachers of English.
- Lee, C. D., and Smagorinsky, P. (2000). Introduction: Constructing meaning through collaborative inquiry. In C. D. Lee and P. Smagorinsky (Eds.), *Vygotskian perspectives on literacy research: Constructing meaning through collaborative inquiry*. Cambridge, UK: Cambridge University Press.
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.
- Lindeman, E. (2001). *A rhetoric for writing teachers* (4th ed.). New York: Oxford University Press.
- Lunsford, A., Ruskewicz, J. J., and Walters, K. (2010). *Everything's an argument*. New York: Bedford / St. Martin's.
- Lunsford, K. J. (2002). Contextualizing Toulmin's model in the writing classroom. A case study. *Written Communication*, 19, 109-174.
- McCann, T. (1989). Student argumentative writing knowledge and ability at three grade levels. *Research in the Teaching of English*, 23, 67-76.

- McCutchen, D. (2006). Cognitive factors in the development of children's writing. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 115-130). New York: The Guilford Press.
- Miller, C. (2006). ACE. Retrieved September 22, 2008, from <http://www.intercom.net/local/school/sdms/mspap/ace.html>.
- National Center for Educational Statistics. (2012). *The nation's report card: Writing 2011*(NCES 2012-470). Institute of Education Sciences, U.S. Department of Education, Washington, D.C.
- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards*. Washington, DC: Authors.
- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects*. Washington, DC: Authors.
- Nystrand, M. (2006). The social and historical context for writing research. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 11-27). New York: The Guilford Press.
- Nystrand, M. & Graff, N. (2000). *Report in argument's clothing: An ecological perspective on writing instruction*. Albany, NY: National Research Center on English Learning and Achievement. (ERIC Document Reproduction Service No. ED 439 429).
- Partnership for Assessment of Readiness for Colleges and Careers. (2013). Retrieved October 19, 2013, from <http://www.parcconline.org/>.

- Pederson, D. (2002). Question and answer: Reading nonfiction to develop the persuasive essay. *English Journal*, 91, 59-63.
- Persky, H. R., Daane, M. C., and Jin, Y. (2002). *The Nation's Report Card: Writing 2002* (NCES 2003-529). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.
- Prior, P. (2006). A sociocultural theory of writing. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 54-66) New York: The Guilford Press.
- Pritchard R. J., and Honeycutt, R. L. (2006). The process approach to writing instruction: Examining its effectiveness. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 275-292). New York: The Guilford Press.
- Rohman, D. G. (1965). Pre-writing: The stage of discovery in the writing process. *College Composition and Communication*, 17, 2-11.
- Rosenshine, B. (2008). Five meanings of direct instruction. *Academic Development Institute*, 1-6. <http://www.centerii.org/search/Resources%5CFiveDirectInstruct.pdf>.
- Salahu-Din, D., Persky, H., and Miller, J. (2008). *The nation's report card: Writing 2007* (NCES 2008-468). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education, Washington, D.C.
- Scardamalia, M., Bereiter, C., and Steinbach, R. (1984). The teachability of reflexive processes in written composition. *Cognitive Science*, 8, 173-190.

Schneider, M. (2008). *The nation's report card: Writing 2007* (NCES 2008-468).

National Center for Education Statistics, Institute of Education Sciences, U.S.

Department of Education, Washington, D.C.

Schulz, L. M., & Laine, C. H. (1987). A study of eleventh-grade writing: Implications for teaching. *Journal of Teaching Writing*, 6, 1-8.

Shultz, K. (2006). Qualitative research on writing. In C. A. MacArthur, S. Graham, and J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 357-373) New York: The Guilford Press.

Smagorinsky, P. (1989). The reliability and validity of protocol analysis. *Written Communication*, 6, 463-479.

Smagorinsky, P. (1994). Think aloud protocol analysis. In P. Smagorinsky (Ed.), *Speaking about writing: Reflections on research methodology* (pp. 141-162). Sage Publications.

Smith, M. (2011). Forward. In G. Hillocks, *Teaching argument writing, grades 6-12: Supporting claims with relevant evidence and clear reasoning*, (pp. ix-xii). Portsmouth, N. H.: Heinemann.

Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.

Stake, R. E. (2010). *Qualitative research: Studying how things work*. New York: The Guilford Press.

Steinburg, E. R. (1986). Protocols, retrospective reports, and the stream of consciousness. *College English*, 48, 697-712.

- Swanson-Owens, D., & Newell, G. E. (1994). Using intervention protocols to study the effects of instructional scaffolding on writing and learning. In P. Smagorinsky (Ed.), *Speaking about writing: Reflections on research methodology* (pp. 141-162). Sage Publications.
- Toulmin, S. (1958/2003). *The uses of argument*. Cambridge, UK: Cambridge University Press.
- Tudge, J., and Scrimsher, S. (2003). Lev Vygotsky on education: A cultural-historical, interpersonal, and individual approach to development. In B. J. Zimmerman and D. H. Schunk (Eds.), *Educational psychology: A century of contributions*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Vygotsky, L. (1934/1986). *Thought and language*. A. Koulzin (Ed.). Cambridge, MA: MIT Press.
- Wells, G. (2000). *Dialogic inquiry: Toward a sociocultural practice and theory of education*. Cambridge, UK: Cambridge University Press.
- White, S., & Venneman, A. (2000). NAEP scoring of twelfth-grade persuasive writing. *Educational Statistics Quarterly*, 2, 85-89.
- Witte, S. P., & Cherry, R. (1994). Think-aloud protocols, protocol analysis, and research design: An exploration of the influence of writing tasks on writing processes. In P. Smagorinsky (Ed.), *Speaking about writing: Reflections on research methodology* (pp. 3-19). Sage Publications.
- Wood, D., Bruner, J. S., and Ross, G. (1976). The role of tutoring in problem solving. *Journal of child psychology and psychiatry*, 17, pp. 89-100.

Yeh, S. (1998a). Validation of a scheme for assessing argumentative writing of middle school students. *Assessing Writing*, 5(1), 123-150.

Yeh, S. (1998b). Empowering education: Teaching argumentative writing to cultural minority middle-school students. *Research in the Teaching of English*, 33, 49-83.