USING INDIVIDUAL COGNITIVE TASK ANALYSIS TO CAPTURE EXPERT WRITING INSTRUCTION IN EXPOSITORY WRITING FOR SECONDARY STUDENTS

by

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Dedication

This dissertation is dedicated to my strongest supporters. I could not have done this without the patience and strength of my family, my children, my parents, and especially my wife, Annita. You have been beyond patient and supportive during this journey. Your understanding, your sacrifice, your strength and your insistent reminders of my academic commitments have resulted in the completion of this dissertation. This work is as much yours as mine. Thank you from the bottom of my heart.

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List of Abbreviations

1i	1i+3r (1 Independent Interview + 3 Reviews)
3i	3i+3r (3 Independent Interviews + 3 Reviews)
BTA	Behavioral Task Analysis
CDE	California Department of Education
CCSS	Common Core State Standards
CTA	Cognitive Task Analysis
CDM	Critical Decision Method
CPP	Concepts, Processes, and Principles
EAP	Early Assessment Program
ELA	English Language Arts
ELL	English Language Learner
ERWC	Expository Reading and Writing Course
GSP	Gold Standard Protocol
IRR	Inter-rater Reliability
NAEP	National Assessment of Educational Progress
NCES	National Center for Educational Statistics
NCLB	No Child Left Behind
PARI	Precursor, Action, Result, and Interpretation
PD	Professional Development
PGSP	Preliminary Gold Standard Protocol
SME	Subject Matter Expert

Abstract

Cognitive Task Analysis (CTA) is a collection of methods used to elicit the cognitive processes, unobserved knowledge, and goal structures that make up human behavior. This study sought to apply CTA methods to elicit the knowledge and skills expert English teachers use as they teach expository writing to eleventh grade students. Three semi-structured CTA interviews were held to capture the procedural and declarative knowledge represented as action and decision steps. The results were coded, analyzed, and aggregated into a gold standard protocol (GSP) that was then given to a fourth expert for verification. This study also looked to identify and quantify the percentage and number of knowledge and skill omissions as experts recall how they deliver expository writing instruction. The omission data was recorded in a spreadsheet and a frequency count was used to determine the amount of omitted knowledge and skills by each expert. These results confirmed prior research that suggests experts may omit up to 70% of critical information and can be reversed by utilizing 3-4 experts in eliciting expert knowledge and skills. Finally, this study and a concurrent study (Lim, 2015) compared the efficiency of two varying methods of CTA, the 3i+3r individual method and the 1i+3r incremental method (Lim, 2015). These studies operationalized efficiency by determining which method captures as much, or more, action and decision steps from experts for less cost and time. The comparison results produced abundant data, but did not provide a clear answer as to which method is more efficient. The knowledge and skills captured by CTA may be used to inform and develop pre-service and in-service professional development training for teachers in performing the task of expository writing instruction.

CHAPTER ONE: OVERVIEW OF THE STUDY

Statement of the Problem

The definition of expository writing encompasses various modes or genres of writing, including description, cause and effect, comparison, sequencing, and problem-solution organizational patterns (Baker, Brizee, & Angeli, 2013). These patterns of writing are an important focus in curriculum development and instructional delivery because of their use in high school, college and the workplace (Kiuhara, Graham, & Hawken, 2009). While each genre noted above has value as a form of written communication, this study will limit its investigation to two main purposes of expository writing: to inform (Boscolo, 1990) and to present an argument with evidence and reasons to support that argument (Beck, Llosa, & Fredrick, 2013; Chandrasegaran, 2013).

Of all the skills and knowledge gained in school, few are as important or needful for students to master as the ability to communicate using the written word (MacArthur & Philippakos, 2010; Taylor & Beach, 1984; Alber-Morgan, Kessler, & Konrad, 2007). The ability to write as taught in middle school and high school, especially that needed to master expository writing, is seen as an evolutionary next step in student acquisition of writing skills (Beck, Llosa, & Fredrick, 2013). The complexity of expository writing is found in the use of more formal language structure to explain abstract ideas and consequently presents to students a much more difficult skill to acquire (Graham & Harris, 2013). But proficient acquisition of expository writing skills by students helps ensure academic success in college (Addison & McGee, 2010, Graham and Perin, 2007b) and professional success for workers in the workplace (NAGB, 2010). In the recent past, state academic standards and assessment programs often placed less emphasis on

assessing writing than on reading skills and math skills (ACT, 2012). However, the recent adoption by many states of Common Core State Standards (CCSS; Council of Chief State School Officers & National Governors Association, 2010) has increased the importance of expository writing instruction enough for states to include writing assessments along with reading and math assessments to gauge student academic performance (Colman, Pimentel, and Zimba, 2012, Graham & Harris, 2013). With the implementation of the Common Core State Standards (CCSS; Common Core State Standards Initiative, 2010), there will be a greater demand that students learn the knowledge, skills, and procedures to become more effective writers, especially those needed to write expository pieces. This places a renewed expectation on educators to provide rigorous expository writing instruction in the high school and middle school classroom.

Expository writing continues to be a foundational skill for student success in college and the university. Standardized college entrance exams such as Scholastic Aptitude Test (SAT), the American College Testing exam (ACT), and Early Admissions Program exam (EAP) administered by the California State University system have subsections in which prospective students respond to a writing prompt as an assessment of proficiency in expository writing (Beck, Llosa, & Fredrick, 2013; Read & Landon-Hays, 2013). Results from these exams have shown that large numbers of high school students are not proficient in their expository writing skills (Applebee & Langer, 2009), which indicates a growing number of students who appear to be unprepared for the rigor of college-level courses (Beck, Llosa, & Fredrick, 2013). There is great need to improve writing instruction in classrooms across the country. And yet, there are students who do pass these writing assessments with proficiency and bring these skills to college as

freshmen ready to enter higher education (Fanetti, Bushrow, & DeWeese, 2010). Education researchers (Darling-Hammond, 2000; Darling-Hammond & Baratz-Snowden, 2007) have found that highly qualified teachers who complete a teacher preparation program are more effective in helping increase student achievement. Effective preparation in teaching expository writing should help develop expertise among beginning teachers. Experts in subject matter domains have deep understanding of the curriculum along with knowledge of a variety of pedagogical strategies to help students learn. These experts have the experience and knowledge to make decisions about what to teach and when to teach it to their students (Darling-Hammond & Baratz-Snowden, 2007). If novice teachers could access the knowledge and skills of their experienced colleagues, schools will begin to make gains in addressing the need for students to be prepared for the rigors of college writing.

One of the many things writing teachers are tasked with in the classroom is ensuring students gain proficient narrative and expository writing skills throughout their time in school. Schools are more successful at teaching students factual writing skills often found in creative writing or narrative writing because of its close relationship with familiar informal speech and writing patterns of early elementary students (Berman & Nir-Sagiv, 2007). Expository writing does not share these traits with narrative writing. Because of the formality and structure of expository writing instruction (Chandrasegaran 2013), students are less able to use informal language and personal experience when writing expository texts. Students need support in using more formal language and specific structures of logical reasoning in their writing. Novice teachers must develop the knowledge and skills needed to provide this type of instruction. Expert teachers might

have the experience and skills to develop a rigorous lesson plan to meet students' needs (Smith, 2005), but novice teachers do not have immediate access to these same skills and knowledge used by experts in the classroom.

This leads to the result that novice teachers are often unsure how to teach expository writing. In fact, the teaching of writing tends to cause the most anxiety among teachers of all levels of expertise (Grisham, 2011; Read & Landon-Hays, 2013). One common method of instruction is teaching students organizational patterns (Baker, Brizee, & Angeli, 2013). High School teachers are tasked with helping students perform well enough on writing assessments that lead to passing college entrance exams. Teaching organizational patterns in the form of step-by-step formulas or templates (Fanetti, Bushrow, & DeWeese, 2010) are used by teachers to help students structure and write essays. It is thought that by providing a structured organizer for students to fill in with their ideas, teachers help to reduce the cognitive load students experience when writing. The thought is that students will be able to address the subject matter of the writing prompt without having to worry about structure and organization. The goal here is to help students garner the highest possible score on standardized writing assessments.

The use of writing structures and formulas appear at first to be intuitive. McCutchen (2011) details student success at narrative (story) writing because students are familiar with the structure of this type of writing. Having a structure upon which to build a piece of writing allows students to concentrate on the ideas, words, and grammar needed to write coherent pieces. This appears on its face to be the case with expository writing patterns as well. However, expository writing is not always so clear cut. Writers use different expository writing structures for different purposes and audiences which

causes confusion among students and teachers as to which genres are most applicable and important to learn (Graham & Harris, 2013; Grossman, Loeb, Cohen, Hammerness, Wyckoff, Boyd, & Lankford, 2000).

A common structural component of expository writing is the 5-paragraph essay, with each paragraph beginning with an introductory sentence and ending with a concluding sentence. In real life, this is not always the case. Expert teachers are aware of the real-life needs of their student writers. They know the knowledge and skills students require and know when and how to apply this knowledge. Again, novice teachers would greatly benefit from this expertise.

Expert and novice teachers alike are often under great amounts of stress to teach all that is required of them by state standards along with additional and changing state curricular requirements, district curricular requirements, and various other teaching duties (Read and Landon-Hays, 2013). It seems impractical to expect teachers to complete the myriad duties of an educator while asking them to digest new standards and create lessons to address them all the while as states revamp student assessment tools in response to Common Core Standards (CCSS). Again, experienced teachers able to access years of experience along with the expertise brought by time in the classroom make this change more effectively. Novice teachers are as willing but are less able to do so. Thus, they often are unable to respond as they would like to the needs of their students (Kiuhara, Graham, and Hawken, 2007). Accessing the expertise of veteran teachers would go far in helping novice teachers address this problem.

Students who exhibit proficiency in expository writing benefit greatly from teachers who are subject matter experts (Read & Landon-Hays, 2013; Grossman et al.

2010). It is this teacher expertise that results in increased academic success for students (Darling-Hammond, 2000; Darling-Hammond & Baratz-Snowden, 2007). Capturing this expert knowledge and skill to help novice teachers acquire their own expertise more quickly would help students improve academically (Saphir, 2011). Cognitive Task Analysis (CTA) is one such tool that can capture the expertise of Subject Matter Experts (SMEs).

Cognitive Task Analysis

Cognitive Task Analysis (CTA) is an interview, observation, and analysis method whereby a trained interviewer conducts semi-structured interviews with experts on how they perform complex mental tasks (Clark, Feldon, van Merriënboer, Yates, & Early, 2008). CTA is used to capture the performance objectives, equipment, conceptual knowledge, procedural knowledge, and performance standards used by experts to complete a complex task. A complex task is composed of controlled knowledge and automated knowledge used to perform a task over a specific length of time (van Merriënboer, Clark, & De Croock, 2002). The knowledge captured can then serve as a record of the task performance and provide to novices a tool to help them achieve the performance goals within any context (Clark, et al., 2008), Often this recording of knowledge results in the creation of job aids, instructional design, and training programs (Yates & Feldon, 2011).

Since the early 20th century, human performance analysts would perform a Behavior Task Analysis (BTA) by watching workers and noting the physical and observable actions done to complete a task. However, the nature of work completion has evolved into increasingly complex tasks which make clear the need for analysis of not

only the observable actions of workers but also the unobservable cognitive processes and structures involved (Clark & Estes, 1996). Research has found that there are three knowledge types used by experts to complete their tasks. The first type, declarative or conceptual knowledge, is the conscious knowledge easily recalled by experts. Declarative knowledge refers to the conceptual understanding of principles and processes related to the task (Clark, Pugh, Yates, Inaba, Green, & Sullivan, 2011). For experts, declarative or conceptual knowledge are schema-based which allow for efficient problem analysis and accurate recall. In short, declarative knowledge is *how-it-works* knowledge learned by experts that help set them apart from novices (Hall, Gott, & Pokorny, 1995). Second, procedural knowledge is the unconscious knowledge gained through experience and practice. As experts perform a task, certain procedures become so routine and automatic that the mental effort to complete them diminishes (Clark, et al., 2008). Experts thus become unaware of the steps they believe they perform and, when asked, often give inaccurate descriptions of the steps they complete (Clark & Estes, 2011). Finally, the third knowledge type is conditional knowledge. A subset or specialized type of procedural knowledge, conditional knowledge is the *when-to-do-it* knowledge that tells an expert when to perform and certain action or to take an alternative path (Hall, et al., 1995). While procedural knowledge defines the decisions an expert might want to perform, conditional knowledge helps to decide when this action will proceed.

As the decisions and actions of experts become more automated, experts use less cognitive load to perform these tasks. The decisions and actions have become easier through practice and experience, and require less cognitive processing to complete. The consequence of this, however, is that experts often report inaccurately the unconscious

actions and decision steps they make when performing these tasks (Clark, 2014). Research has shown that experts may omit up to 70% of the critical information novices need to perform a complex task or solve a difficult problem (Feldon, 2006). This is because expert knowledge has become so automated they forget to state it or even remember it when called upon to do so (Ericsson, Krampe, & Tesch-Römer, 1993). This creates a gap for novice learners, which they cannot successfully fill alone (Clark et. al. 2008). CTA looks to fill these gaps and improve novice learning through the elicitation of expert knowledge and skills.

Many varieties of CTA exist and differences appear even within similar methods (Clark et al. 2008). In the current study, two different methods of CTA are being compared to find which is more efficient.

Purpose of Study

Acquiring expert knowledge in expository writing instruction can help inform teacher training programs by capturing the knowledge and skills of subject matter experts. CTA has been found to be a successful method to elicit automated and unobservable knowledge, decisions, and skills experts use to perform complex tasks (Clark, et al., 2008, Zepeda-McZeal, 2014). As such, this study seeks to use CTA to capture the knowledge, decisions, and skills of teachers who are experts in expository writing instruction at the eleventh grade level. This study also seeks to determine how many action and decision steps experts omit when describing how they teach expository writing. This study will use the 3i+3r Individual CTA method (Flynn 2010; Zepeda-McZeal, 2014), to elicit this information. The action and decision steps collected by this method will be conducted concurrently with another study (Lim, 2015) to determine which method of CTA, the

individual (3i+3r) or the incremental (1i+3r), is more efficient at capturing the automated knowledge of experts.

The questions this study will attempt to answer are:

1. What are the action and decision steps that expert teachers recall when they describe how they provide expository writing instruction to their eleventh-grade students?
2. What percentage of action and/or decision steps, when compared to a gold standard, do expert teachers omit when they describe how they provide expository writing instruction to their eleventh-grade students?
3. Which method of CTA, 3i+3r individual or 1i+3r incremental (Lim, 2015), is more efficient represented by the number of actions and decisions steps and represented by cost and time?

Methodology of the Study

This study used Cognitive Task Analysis (CTA) as a method to capture and record the knowledge and skills of eleventh grade English teachers who teach expository writing. These English teachers work in a high school district in Southern California and had been identified as subject matter experts (SMEs) by a set of specific criteria. Four of these experts were randomly selected to participate in this study. Four additional, randomly selected SMEs were chosen for the concurrent study (Lim, 2015). In both studies, three SMEs sat for semi-structured interviews to capture their knowledge and skills. The 4th SME in each study was chosen to verify the data collected in the form of a protocol. Specifically, this study is using a CTA method referred to as a 3i+3r individual method (Flynn, 2010; Zepeda-McZeal, 2014). The concurrent study (Lim, 2015) is looking at the

same identical task of expository writing instruction, but using a different elicitation method referred to as a 1i+3r incremental method. The CTA method followed a five step process as suggested by Clark et al. (2008):

1. Preliminary phase to build general familiarity frequently called "bootstrapping."
2. The identification of declarative and procedural knowledge and any hierarchal relationships in the application of these knowledge types.
3. Knowledge elicitation through semi-structured interviews.
4. Data analysis involving coding, inter-rater reliability, and individual SME protocol verification.
5. The development of a gold standard protocol that was used to analyze and determine expert omissions and ultimately for use in the training of novice teachers.

Definition of Terms

Definition of Domain Terms

Expository essay: a type of argument that asks students to take a position on a specific topic or issue and support their position with their evidence.

Socratic Questioning: a strategy of asking questions of students to which you already know the answer. The outcome of this line of questioning is meant to lead students to a desired conclusion.

Argument: A formal argument emphasizes a line of reasoning that attempts to prove by logic. When presenting an argument, the goal is to convince an audience of the rightness of the claims being made using logical reasoning and relevant evidence.

Introduction: The first paragraph of the essay. The overall purpose of an introductory paragraph is to properly contextualize the essay's topic or issue to help the reader understand what is being written about and why. The introduction typically includes a hook and a thesis.

Thesis or the primary claim: Typically a sentence that clearly conveys the student's position on the topic or issue of the essay. An assertion based on evidence of some sort.

Supporting paragraphs or Body paragraphs: The portion of the essay where students provide evidence in support of their thesis. Evidence can come in many forms, including but not limited to: a syllogism, numerical data, personal observations, current and historical events, and fictional and non-fictional literature. All of the following terms below are commonly used by teachers when teaching their students to write an effective supporting paragraph:

Topic Sentence: The first sentence of each supporting paragraph. The topic sentence typically indicates the argument that will be made for that particular paragraph.

Concrete Detail or Evidence: A term that often refers to the specific evidence students use to support their thesis. A concrete detail should not be debatable. For example, if a student chooses to use iPhones as his example to make a point about technology, the iPhone example is the concrete detail because iPhones do exist and have clear connections as a technological device.

Commentary: The student's explanation or rationale as to how the concrete detail supports his thesis. It is opinion-based. Explains how the evidence supports the claim. It

is a commonplace rule that people accept as generally true, laws, scientific principles or studies, and thoughtfully argued definitions.

Closing sentence or Transition sentence: The last sentence of the supporting paragraph. This sentence attempts to communicate to the reader that the argument presented in that paragraph has now come to an end. Concurrently, the closing sentence serves as a transition to the next paragraph.

Conclusion: The final paragraph of the essay. The general expectation is that students finalize their argument. Students may do so by addressing opposing views, offering pertinent arguments that were outside the scope of the essay, exploring other possible solutions or explanations, etc.

Definition of CTA Terms

The following are definitions of terms related to CTA as suggested by Zepeda-McZeal (2014).

Adaptive expertise: the situation where an expert can rapidly retrieve and apply appropriate knowledge and skills to problem solving within their domain; to possess the cognitive ability to evaluate and solve problems (Gott, Glaser, Hall, Dibble, & Pokorny, 1996; Hatano & Inagaki, 2000).

Automaticity: unconscious fluidity of performing a task as a result of repeated execution or practice; results in automated functioning of that task (Anderson, 1996a; Ericsson, 2004).

Automated knowledge: knowledge of how to do a task; happens outside of conscious awareness because of the repetition of the task (Wheatley & Wegner, 2001)

Cognitive load: demands of external and internal stimuli placed on the working memory of learners during information processing (Sweller, 1988; Feldon, 2007a).

Cognitive tasks: tasks that require mental effort and engagement to perform (Clark & Estes, 1996).

Cognitive task analysis: techniques for knowledge elicitation that capture the overt and covert knowledge types from experts for use in developing job aids, training materials, or instruction design (Clark, et al., 2008).

Conditional knowledge: Knowledge type that describes the conditions when a decision is made; knowledge that facilitates the application of declarative and procedural knowledge to solve a problem (Hall, et al., 1995).

Declarative knowledge: knowledge type that is accessible in long-term memory and observable in working memory; knowledge about the why or the what of something (Clark & Estes, 1996).

Expertise: The level at which an expert has learned or acquired skills and knowledge sufficient to ensure consistent and superior performance and complex problem solving in a particular domain; expertise is typically developed after 10 years or more of repeated engagement or practice in tasks specific to a domain (Anderson, 1982).

Procedural knowledge: unconscious, automated knowledge type that is developed through instruction or through repeated practice (Clark & Estes, 1996).

Subject matter expert: a person with extensive experience in a domain who is able to perform tasks rapidly and successfully. Subject matter experts have a solid record of successful performance at the task being analyzed (Clark, et al., 2008).

Organization of the Study

Chapter Two of this study reviews the literature in two parts. The first part looks at the literature on the specific writing genre of exposition, and especially its impact on academic success. The second part discusses the literature on CTA as a knowledge elicitation technique in capturing subject matter expertise. Next, Chapter Three addresses the methods of this study and how the approach to the study answers the research questions. Chapter Four examines the results of the study and describes the findings for each of the research questions. Finally, Chapter Five discusses these findings, their implication upon expository writing instruction and CTA, limitations of this study, and implications for future research.

CHAPTER TWO: LITERATURE REVIEW

Expository Writing

Much has been said in research literature about the importance of writing (Beck, Llosa, & Fredrick, 2013; Graham & Perin, 2007a; NAGB, 2010). Writing can persuade others to action, as well as allowing writers to record their experiences and ideas for others who are far away in distance and also in time (Graham & Perin, 2007a). Applebee (1984) describes writing's permanence of allowing writers to rethink and revise ideas over time, the explicitness of writing's ability to capture and hold meaning and ideas, and the conventions of writing that lead to organizing and thinking through ideas and experiences. The goal of writing teachers is to prepare their students as proficient expository writers capable of meeting the expectations of college and the workplace.

The Importance of Expository Writing

Of writing genres, the ability to organize and compose a point of view is seen as a necessary and often used skill not only in the corporate world, but also in secondary classrooms and colleges and universities (NCES, 2012; Kiuhara, Graham, & Hawken, 2009; Graham & Perin, 2007b). The National Assessment of Education Progress (NAEP) asserts that the ability to write effectively under time constraints is critical to the economic success of the nation (NAGB, 2010). Corporations in almost all industries and services report that more than 80% of salaried employees have some requirement for writing within their professional responsibility, a substantial increase from previous decades. The 2011 NAEP Writing Assessment measures three communicative purposes common to academic and professional settings: to persuade, to explain, and to convey experience. Of the three purposes, two of the three (to persuade and to explain) are hallmarks of expository writing (NAGB, 2010).

The importance of expository writing is evident in both middle school, high school, and in college as well. While many genres of writing instruction are taught to middle school and high school students, expository writing is arguably thought to be the most significant for academic success (Graham and Perin, 2007b; Beck, Llosa ,a& Fredrick, 2013). Graham and Perin (2007b) have found writing assignments in middle and high schools involve expository tasks, such as reporting, summarizing and analyzing factual information, and expressing an opinion with the support of evidence. The percentage of writing assignments of an expository nature increase beginning in upper elementary school (60%), through middle school (65%) and into high school (75%).

The analytical nature of exposition is thought to be more complex and challenging than factual genres (Beck, Llosa, & Fredrick, 2013). This assumption has support in research showing that mastery of global text structure, or the elements making up the macrostructure of a text, emerge later in higher grade levels for expository text than for narrative text which appear in earlier grade levels (Berman & Nir-Sagiv, 2007). Children are exposed at an early age to more narrative writing as an outcome of their experience with everyday, oral discourse and simple, informal storytelling. This results in primary grade students being taught narrative and creative writing. Expository writing, on the other hand, is topic-based and is more suited to the type of writing in academic disciplines found in higher grade levels. Expository writing relies on academic language and more formal structures in attempting to explain more abstract thoughts and ideas (Beck, Llosa, and Fredrick, 2013; Berman & Nir-Sagiv, 2007; Graham & Harris, 2013). Indeed, expository writing can be seen as more advanced level of literacy than what students experienced in earlier school years. Graham and Perin (2007b) argue that,

because literacy is defined as skills in both reading and writing, a scarcity in writing proficiency among students should be recognized as an important part of our national literacy crisis.

Definition of Expository Writing

The term expository writing has wide-ranging meaning when attempting to determine what types of writing fit within this genre. Boscolo (1990) defines expository writing as text which attempts to express factual information and theoretical ideas whose general objective is to inform. Berman and Nir-Sagiv (2007) further added that because expository texts are topic oriented, they focus on concepts and issues, and articulate the unfolding of ideas, claims, and arguments in terms of the logical interrelations among them. Beck, Llosa and Fredrick (2013) find expository writing to have roughly the same meaning as argumentative writing while Chandrasegaran (2013) suggests that expository writing is defined as writing that presents and supports a point of view with evidence and reasons. Given that taking a stance and supporting it are the defining acts in expository essay writing, the ability to select appropriate meanings to achieve argument support moves seems crucial to students' success in expository writing.

It is this focus on argumentation supported by evidence and reason that lead some researchers (Graham & Harris, 2013; Chandrasegaran; 2013) to suggest a socio-cognitive approach to writing instruction. The cognitive aspect of this approach describes writing as a goal-setting, decision-making activity, which leads to explicit instruction that supports student writers in controlling an array of skills, knowledge, and processes that include planning, drafting, revising, editing, and publishing text. The social aspect of this approach refers to the contextual and cultural interaction between students and authors as

students deconstruct texts written by one another. It also refers to the social aspect of writing within classrooms as students engage in explicit and implicit dialogues between reader and writer (Graham & Harris, 2013). Chandrasegaran (2013) wanted to see if a pedagogical approach that integrates social and cognitive theoretical views of writing would enable students to write better expository essays. The results support the argument for "a visible pedagogy" in writing classrooms that integrates the explicit teaching of the social practices of a genre with instruction in the implicit, cognitive processes for performing the genre practices. Such a visible pedagogy would entail articulating, for the benefit of students, the influence of social goals and cultural contexts in shaping both genre practices and cognitive processes during writing.

The Importance of Expository Writing at the Secondary Level

Common Core State Standards

While most genres are taught in secondary classrooms, expository writing is the genre most often used in English classes as well as other disciplines (Pascolo, 1990; Beck, Llosa, & Fredrick, 2013, Chandrasegaran, 2013). Past standards under No Child Left Behind (NCLB, 2001) concentrated on mathematics and reading while relegating writing to a secondary, and often neglected, role in the classroom. Common Core (CCSS) has reinvigorated the importance of writing such that, like reading and math, it has become a rigorously tested curricular area. The Common Core State Standards (CCSS) include writing standards in grades K-12 (Council of Chief State School Officers & National Governors Association, 2010). Additionally, NCLB addressed standards at the school level whereas CCSS focuses reform on individual teachers and teacher education programs as well as school sites (McQuitty, 2012). Graham (2013) and colleagues

suggest that to meet writing standards and benchmarks, teachers and schools must place greater emphasis on learning how to write and how to use expository text, especially persuasive and informational texts, to promote learning within and across disciplines for a variety of purposes and audiences.

The Common Core State Standards (Council of Chief State School Officers & National Governors Association, 2010) place a premium on writing using evidence from texts to present careful analyses, well-defended claims, and clear information. Students must be able to answer a range of questions using evidence and inferences drawn from the text itself. The standards' focus on evidence-based writing to inform and persuade is a major change from past practice. Today, the most popular forms of writing in grades K-12 are based on student experiences and opinions which, while valuable, do not prepare students for the demands of college and career (Colman, Pimentel, and Zimba, 2012, Graham & Harris, 2013). Graham and Harris (2013) note that Common Core State Standards do not tell teachers how to teach, but provide a map for teachers to create the best lessons and classroom environments so that students to gain the required skills and knowledge to become proficient expository writers.

High-Stakes Testing

With the implementation of Common Core State Standards (Council of Chief State School Officers & National Governors Association, 2010) across the nation, accountability measures are being developed and used by school districts to measure students proficiency (McQuitty, 2012). Because CCSS looks to ensure college readiness of students, expository writing prompts manifest themselves more often than other types of prompts in writing assessments (Beck, Llosa, & Fredrick, 2013). Computer-based

writing assessments are being developed by Smarter Balanced Assessment Consortium (SBAC) and Partnership for Assessment of Readiness for College and Careers (PARCC) to assess and analyze student composition. Even the SAT and ACT have included a writing portion to their tests in recent years (Burdick, Swartz, Stenner, Fitzgerald, Burdick, & Hanlon, 2013). Applebee and Langer (2011) noted that secondary teachers reported that high stakes external writing tests given in their respective states drove much (85.7%) of their instruction. This was followed by district exams (63.6%), other exams such as the SAT and ACT (45.7%), and Advance Placement (AP) and International Baccalaureate (IB) exams (30.4%). Some teachers reported that they have added a time limit to writing assessment practice in their classrooms as a result of the time limits used by some of these tests. Finally, some teachers report that writing instruction has increased in their classrooms because of the expectations of the Advanced Placement and International Baccalaureate exams.

The Current State of Students' Writing Proficiency

Students Underachievement in Writing

Student assessment data show that many of our students are not demonstrating proficiency in expository writing tasks. The Nation's Report Card (2012) found that 24% of students in grades 8 and 12 scored proficient on the National Assessment of Educational Progress (NAEP) while only 3% of students in grades 8 and 12 scored at an advanced level. The 2013 Report on College and Career Readiness (College Board, 2013) reports that 43% of students taking the SAT are prepared for college, a number that has been stagnant for the past 5 years. Under California's Early Assessment Program, 28% of students who took the Early Assessment of Readiness for College English exam

(www.eap2012ets.org) were found to be ready for college level English Composition. 2012 English Placement Test (EPT) results show that approximately 70% scored not proficient on the essay portion. EAP exam results show that of the 384,722 eleventh-grade students within California who participated in 2013, only 23% (88,486) demonstrated proficiency in English. Additional data from the CSU released in 2013 showed that only 32% of incoming freshmen demonstrated proficiency on the essay subtest of the English Placement Test (EPT). Beck, Llosa, and Fredrick (2013) argue that the prevalence of expository writing used as writing assessments of students at the secondary level of schooling account for the lower scores. They also noted that lower test scores takes into account that one-fifth of students assessed come from homes where English is not the only language spoken. As stated before, exposition can be considered an advanced level of literacy for which schools have not prepared students as well as they should (Graham & Perrin, 2007b). Providing excellent education helps to alleviate societal inequities by providing teachers the best training possible to help all students be successful at expository writing.

Teachers' Influence on Student Achievement

Research shows that highly-qualified teachers have proven to be most effective in positively influencing student achievement (Vandevoort &Berliner, 2004, Darling-Hammond, 2000; Darling-Hammond & Baratz-Snowden, 2007). Vandevoort and Berliner (2004) looked at research on the National Board Certified Teacher program. They looked at research with and without student assessment outcomes as measurement data and found teachers who went through the process to be nationally certified exhibited exemplary practices in providing high quality education and an environment of high

expectations. A smaller number of research articles using student outcomes as data also found that NBCT program participants were more effective in increasing student achievement.

On the other hand, Kane (2008) and colleagues found little difference in the quality between teachers who participated in state teacher certification programs, those who had not participated in teacher certification programs, and those who participated in alternative certification programs. However, they did find differences in the ability of teachers within their experimental and control groups. These differences among teachers were positively correlated to increased student achievement. Vandevoort and Berliner (2004) concede that teachers who attempt NBCT certification may already be effective before they begin the process. They suggest that perhaps effective teachers might be more willing to participate in activities that improve their own effectiveness.

Darling- Hammond (Hammond, 2000, Hammond & Baratz-Snowden, 2007) and colleagues found that highly qualified teachers are more effective in increasing student achievement gains. More troubling is the finding that students who have several ineffective teachers consecutively have significantly lower achievement gains than their peers who have highly effective teachers in consecutive school years. When aggregated at the state level, teacher quality variables appear to be more strongly related to student achievement than class size, overall spending levels, or teacher salaries.

Darling-Hammond and Baratz-Snowden (2007) describe the myriad ways that highly effective teachers use pedagogical strategies, content knowledge, and quality assessment to determine they provide and measure quality instruction in their classrooms.

It is these actions and their judicious use that helps these highly-qualified teachers make significant increases in student achievement.

Teachers Feel Underprepared to Teach Writing

Even if we assume that every teacher is highly effective, this still does not mean all teachers are providing the high quality expository writing instruction they would like. Teachers themselves report they feel underprepared to teach writing in their classrooms. Read and Landon-Hays (2013) interviewed high school teachers to find the difference between what teachers know and what they do when giving writing instruction in the classroom. The obstacles they identified include teacher's personal experiences and learning opportunities as students, preservice training in writing instruction, and the realities of teaching and assessing of daily writing.

Teacher experiences as students. Studies have lamented the poor quality of writing instruction in high schools and middle schools across the nation for many years (Kiuhara, Graham, & Hawken, 1991). If one could extrapolate the findings Kiuhara, Graham, and Hawken (1991) found in most schools throughout the country, the students at the time of that research (1991) could certainly be the teachers of Read and Landon-Hays (2013) more recent research. The teachers in Read's and Landon-Hays' (2013) findings report the writing instruction they received in high school was formulaic and devoid of any application of any formal writing process. They described writing as simple and undemanding. This corresponds with the findings of Fanetti, Bushrow, and DeWeese (2010), who interviewed secondary teachers and college instructors and found complaints of incoming freshmen struggling to write beyond formulaic writing. And yet

high school teachers interviewed felt compelled to use formula writing so students could pass high-stakes writing assessments.

It seems that high school teachers are aware there are more effective strategies, such as peer editing and teacher modeling. But their own experiences in high school did not give them exposure to this type of instruction (Read and Landon-Hays, 2013, Grossman, et al., 2000). Given this lack of exposure, teachers know and use various pedagogical strategies to teach writing but are unsure what good instruction looks like. In the stress of daily teaching, teachers often resort to instruction practices with which they are most familiar.

Preservice training in writing instruction. Teachers interviewed by Read and Landon-Hays (2013) reported they received what they perceived as insufficient training in teacher preparation courses. Reports by these teachers were mixed. Some received very little preparation in writing instruction and assessment. A few teachers report they received some theoretical preparation, but were given little guidance in how that learning would be implemented in the classroom. All agree that their varying levels of preparation in writing instruction did not prepare them for teaching writing in the context of a classroom. This is corroborated by Kiuhara (2009) and colleagues who surveyed 355 teachers, finding 71% of teachers report little or no preparation and 44% report little in-service training in writing instruction. Grossman (2000) and colleagues interviewed teachers new to the classroom who describe conflicting views on how to address writing in the classroom. Preservice preparation taught these new teachers to encourage creativity and develop a writer's workshop model in class. However, school districts often purchase curriculum which teaches writing in a structured program with teacher-led instruction and

little student interaction. This leads to confusion and tension within teachers who feel compelled to follow district mandates even if they conflict with the teacher's views of writing instruction (McQuitty, 2012; Applebee and Langer, 2011).

Kiuhara (2009) and colleagues describe the successful strategy of having students write across different subjects or domains. But they and others (Fanetti, Bushrow, and DeWeese, 2010) find that students' experiences in expository writing tend to come mostly from English classes, with some assignments from social studies classes, and very few writing experiences from science or math classes. Kiuhara (2009) and colleagues conclude this occurs because most training in writing instruction occurs in English teacher preparation courses and not as much in other content areas. Considering the varied amounts of training teachers receive in writing instruction, researchers find that the amount of writing done in class depends on the teachers' self-efficacy in writing ability and personal enjoyment of writing itself (Grossman, et al., 2000; Kiuhara, Graham, & Hawken, 2009; Zumbrunn and Krause, 2012).

Realities in teaching and assessing writing

Writing differs from most subjects in that its use can be found throughout most middle school and high school classes. Writing is often used to assess student learning in domain-specific courses as well as in English courses. Additionally, many assignments given in other subjects have a distinct beginning and end while writing is considered to be more of an on-going process (Graham & Perin, 2007a). Teachers interviewed for multiple research articles universally agree that getting students to see writing as a process and not as meeting some predetermined goal is a most intractable problem (Read & Landon-Hays, 2013, Grossman, et al., 2000; Kiuhara, Graham, & Hawken, 2009).

Most teachers report that they want their students to become familiar with the writing process, but struggle with limited student attention spans and curricular requirements to cover multiple writing genres, without adequate practice in successful writing strategies such as modeling and scaffolding (Grossman, et al., 2000). College instructors bemoan the fact they must help entering freshmen unlearn the rigid rules and structure high school teachers push daily in fear of poor performance on standardized tests. Secondary teachers respond that they feel compelled to teach students formulas and shortcuts in the hopes they may achieve a high score on assessments rather than to write something meaningful (Fanetti, Bushrow, & DeWeese, 2010). Grisham & Woolsey (2011) report minimal improvement in the quality of student writing over the past two decades and that many college entrants are surprised to find themselves completing remedial courses in writing.

Another problem faced by secondary teachers in their daily work is enough time to teach writing the way they believe they should (Read & Landon-Hays, 2013, Grossman, et al., 2000). Teachers generally concur that more time is needed to teach students individually rather than in a traditional whole-class, transmission model of teacher-led lecture.

Socio-cultural writing models propose that students should write authentic pieces that reflect their own interests. They also suggest students create goals for writing improvement (Chandrasegaran, 2013; Applebee and Langer, 2011; De La Paz and Graham, 2002). Teachers then offer feedback based on those goals. Students should also receive peer feedback on their writing (Graham & Perin, 2007a). The reality of district mandates and state required writing assessment make this quite difficult. Read & Landon-Hays (2013) noted that one teacher in their study attempted to create a holistic

writing program that included teacher feedback while striving to meet district requirements. This teacher found that many hours of grading were needed beyond the contract teacher day. Teachers also found that by the time they graded the work days later, the students had forgotten the assignment.

A related problem to the time crunch felt by secondary teachers is the amount of students they are required to teach. Many teachers have multiple classes of students with each class having from 30-40 students (Kiuhara, Graham, & Hawken, 2007; Read & Landon-Hays, 2013). Some teachers feel they must grade each paper they see to give students feedback. Some teachers, however, concede they cannot grade everything that crosses their desk (Grossman, et al., 2000; Alvermann, 2002). Given the time crunch and the number of students on their attendance sheets, teachers are in a quandary about providing enough meaningful writing experiences and at the same time being able to respond to the needs of each student.

It appears that nibbling at the edges of reform will not be enough to make writing instruction more efficient and manageable by teachers. Whether less-than-effective writing instruction can be blamed solely on external factors, a more important change must come from within the teachers themselves through more effective professional development (PD) that helps novice and expert teachers gain subject matter expertise and build capacity in expository writing instruction.

Subject Matter Expertise

The Need for Expertise in Writing Instruction

Highly effective teachers are considered as such because of their expertise in subject matter knowledge, knowing how to teach the subject matter to others, and having knowledge about how children learn, feel, and develop. They are also experts in self-awareness, social skills, and organizational competence (Smith, 2005; Darling-Hammond & Baratz-Snowden, 2007). While teachers have little to no control over external obstacles such as class size or available time with students, they do have control over their acquisition of the subject matter knowledge they teach. Graham (2013) and colleagues find that, in order to meet Common Core State Standards writing benchmarks (Council of Chief State School Officers & National Governors Association, 2010), teachers and schools must place greater emphasis on learning how to write and how to use expository text, especially persuasive and informational texts, to promote learning within and across disciplines for a variety of purposes and audiences. Common Core State Standards provide teachers with a roadmap on what objectives, topics, and skills they should cover in the school year. But this map is of limited value if teachers do not possess the knowledge, skills and tools needed to achieve the outlined objectives. Graham (2013) and colleagues suggest that writing is a goal directed and self-sustained cognitive activity requiring management of the writing environment, management of the constraints imposed by the writing topic, the purposes of the writer(s), and the processes, knowledge, and skills involved in composition. Writing teachers must possess considerable wisdom about how to teach writing effectively. If the teachers possess effective tools to teach writing, they are more likely to achieve the goals of CCSS.

The advantage of studying exceptional teachers is that it allows one to examine what they do in the classroom, enriching our understanding of what effective writing instruction looks like in these situations. These observations can also be used to provide teacher preparation and professional development (PD) programs based on this expertise (Smith, 2005; Saphir, 2011; Graham, Gillespie, & McKeown, 2013). Saphir (2011) proposes that expertise must be expanded into clear exemplars or standards that educators can understand at the concrete level and that are tied to performance assessments. Ozer (1998) argues these standards are the models of actions backed by scientific reflection that teachers take within the context of the classroom. They are also much more than automated skills, such that they cannot be easily perceived by laymen or specialists outside of education. Professional development, based on these actions and discrete skills and decisions, can then move away from being reactive to individual teacher evaluation prescriptions or driven by local needs assessments. They can then move toward a clear, uniform vision of high-expertise practice.

Saphir (2011) adds that proficiency in the knowledge, skills, and pedagogical practices that make up good teaching would be the highest-leverage path to increase student achievement. Every effort should be made by teachers and school leaders to make sure expert practices show up consistently in every classroom.

Summary

Expository writing is a necessary skill for students to learn to help ensure academic success at school and in the universities, and to help ensure professional success in the workplace. In this time of increased academic standards and increased high-stakes, standardized testing, instruction in expository writing has risen in importance.

The complex nature of expository writing depends on academic language to support meaning and structures based on logical reasoning. This results in an academic domain where students benefit from support from peers and explicit teacher-led instruction. And while having a qualified teacher in every classroom is the most effective way to improve student academic performance, not all teachers feel prepared to teach expository writing effectively. It behooves curriculum planners and teacher trainers to find and share the knowledge and skills that expert teachers use to teach their students to be successful expository writers. This knowledge can then be shared with novice teachers so that they can teach their students more effectively with greater expertise.

Using Subject Matter Experts to Train Non-experts

Experts are often called upon for their knowledge and skills to teach novice learners, to inform curriculum content and instructional material development, and to mentor or coach others to perform complex tasks and solve challenging problems. One of the purposes of education is the traditional view that education is to replicate knowledge (Jackson, 1985). A historical view of education begins with a system based on the relationship between a master and apprentice. The job of the apprentice was to imitate the master. As education become more ubiquitous and egalitarian, the master-apprentice relationship became one teacher to many students. And yet, the function of the student imitating the teacher as a process of learning remained (Jackson, 1985). A more modern view of the purpose of education is to teach children how to learn rather than fill their heads with what the teacher finds important (Glassman, 2001). Whether learning knowledge or learning how to gain that knowledge through inquiry, imitation by students as novices of what the expert teacher knows or does is still the model used in education

(Jackson, 1985).

Recent research shows that experts may omit up to 70% of the knowledge and skills novices need to replicate the performance of experts. Feldon and Clark (2006) looked at self-reports of subject matter experts (SMEs) and found that SME reports were prone to omission errors (from 48% to 88%). Omission errors are the failure of these experts to report a step that was taken without misrepresenting the event's sequence. These omission errors were higher than commission errors (0% to 5.7%). Commission errors are statements made during self-reporting that misrepresent reported events by stating incorrectly either the order of the steps or the carrying out of steps that did not occur. The study concluded that self-reports of experts are often inaccurate and incomplete. Errors of omission and commission can obstruct a novice's performance based on the knowledge collected (Feldon & Clark, 2006). Because most of the errors were omitted by experts as they recount the steps they take to perform a complex task, novices who receive this incomplete information fill the holes with their own information, which often contains misconceptions and guesses. Experts omit critical knowledge and skills because they have automated their skills and knowledge through repeated practice to such a degree that they become unconscious and difficult to recall.

Cognitive Task Analysis has been shown to be an effective method in capturing both the conscious controlled knowledge and unconscious, automated knowledge experts use to perform complex skills and solve difficult problems (Clark, et al., 2008). To further understand the effectiveness of CTA, the following sections examine knowledge types, the nature of automaticity, and the characteristics of expertise.

Knowledge Types

Knowledge can be classified into distinct types of cognitive processing with different functions and uses. Merrill (1983) suggested in his first iteration of Component Design Theory that instructional goals can be classified in two dimensions: content knowledge and performance goals. The first dimension is content knowledge types, which can be classified as facts, concepts, principles, and procedures. In a newer version of CDT (1990), Merrill and colleagues also suggested principles can be referred to as processes. The second dimension of CDT is performance goals which are exhibited by the learner. The first version of CDT (Merrill, 1983) classifies performance goals as remembering, using, and finding, while the newer version of CDT adds sub-goals to each performance goal type (Merrill, 1990).

The performance goals described by Merrill (1983, 1990) above associated with the performance of learning can be described in another way. To show that one remembers a piece of knowledge, the learner must declare or tell that fact for the cognitive process to be observable. And, to show that one is using (applying) or finding (creating) new knowledge, the learner must use or apply a learned procedure or process to exhibit cognitive processing in an application setting.

Merrill (1990) argues that the way knowledge is shared with students changes the learner's cognitive structure and results in learned behavior. Instruction must not only provide the appropriate representation of content to be learned but also assist the learner in using or applying this representation. CTA looks to provide novices the knowledge and skills needed to change cognitive structures and allow learners to use their newly gained learning in application.

Schneider and Shiffrin (1977) first described knowledge as two different types of cognitive processing. They described controlled processing as a temporary act in a sequence that has not yet been learned. This type of processing is easy to set up, modify, and use in novel situations. It requires attention and makes liberal use of a learner's cognitive load. Controlled processing, often referred to as declarative knowledge (Clark, et al., 2008), is easily recalled from long-term memory and is consciously observable. While this declarative knowledge can be taught so that it is remembered, it is not enough to ensure successful performance. Declarative and procedural knowledge are not the same and enable different types of performance. One may know facts but not be able to perform the procedure or know when to execute the function. Similarly, one may have the ability to perform a function but not able to explain why they are doing it (Anderson, 1982; Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010).

The second type of cognitive processing described by Schneider and Shiffrin (1977) is automatic processing. While it is triggered by appropriate inputs, it operates independently of the learner. Automated processing does not require the attention of the subject and does not tax cognitive load. Automated processing, also referred to as procedural knowledge, is required for performing a complex skill (Clark, et al., 2008). Application of procedural knowledge is repeatedly practiced by experts to such a degree that these skills become automatically learned and difficult to recall, being outside the conscious long-term memory of the expert.

Declarative and procedural knowledge are acquired as one transitions from novice to expert (Paris, Lipson, & Wixson, 1983). Declarative knowledge and procedural

knowledge will be discussed in detail, as will a form of procedural knowledge known as conditional knowledge.

Declarative Knowledge

Declarative knowledge is made up of concepts, processes and principles that are controlled consciously by the learner and can be changed abruptly in the working memory. Declarative knowledge is factual, goal-independent knowledge (Clark & Estes, 1996; Corbett & Anderson, 1995; Schneider & Shiffrin, 1977). It is the retrievable information that can answer the "why" and the "what" about facts, concepts, events, and objects (Anderson & Schunn, 2000). More importantly, declarative knowledge is characterized by its conscious quality and the speed at which this knowledge can be learned or modified. Declarative knowledge is most adept at helping learners handle new and different tasks.

Nearly all new knowledge that comes into the cognitive process is declarative knowledge (Anderson & Fincham, 1994). It is committed to long-term memory through practice and elaboration where it is then converted into procedures made up of production rules. Knowledge is learned at first in a conscious, declarative form. Because of repeated learning or practice, this declarative knowledge is transformed over time into an unconscious, automated procedural form (Anderson, 1982). Declarative knowledge, the knowing *why* and *what* of an object or idea, begins the cognitive process that supports the creation of procedural knowledge, which is the *how* and *when* of an object or idea (Anderson & Krathwohl, 2001).

Procedural and Conditional Knowledge

Declarative, procedural, and conditional knowledge are required for completing complex tasks and are acquired as one transitions from novice to expert. Procedural knowledge is goal-oriented, facilitation knowledge about "when and how" to perform a task or solve a problem (Corbett &Anderson, 1995). Procedural knowledge includes the steps and sequences to be followed when completing a task. This type of knowledge is also subject-specific as many steps and procedures do not transfer readily across all domains (Anderson & Krathwohl, 2001). Procedural knowledge is the knowledge of processes and procedures, which the performance of these can lead to the acquisition of new declarative or factual knowledge (Merrill, 1983).

Skill acquisition is made up of two stages. First, declarative knowledge is acquired as facts about a skill. This knowledge is then compiled and interpreted by the leaner. These facts drive the creation of decisions of how and when to use these steps. In CTA, the use of "IF/THEN" statements describes these decision steps as learners decide how and when to complete these steps (Anderson, 1982). As this knowledge is continuously applied or practiced, it becomes more automated and needs less cognitive processing to execute. However, once this knowledge becomes automated, it is hard to change or revise because of its unconscious quality (Anderson, 1993).

Procedural knowledge is not just knowledge of how to complete the steps and sequences of performing a task. Learners must know when and why to use these steps and sequences, and which of various steps and sequences to use (Anderson & Krathwohl, 2001; Ambrose, et al., 2010). This classification is referred to as

conditional knowledge, a sub set or type of procedural knowledge. Conditional knowledge moderates the fact-to-action process (Anderson, 1982).

For educators, it is important to assess student's prior knowledge in terms of both declarative and procedural knowledge (Ambrose, et al., 2010). Learners need practice to strengthen both factual knowledge and production rules. Retention of knowledge is a function of how effectively information was learned and practiced (Paris, et al., 1983). With repetition and practice, both declarative and procedural knowledge become stronger and performance becomes more fluid, rapid and consistent (Corbett & Anderson, 1995).

Automaticity

Through repeated performance and deliberate practice of a task, declarative and procedural knowledge becomes automated and unconscious in nature, and the speed in performing the task increases while the amount of active cognitive effort decreases (Feldon, 2007a; Kirschner, Sweller, & Clark, 2006).

Anderson (1996b) suggests three stages that lead to automaticity of expert knowledge. The first stage is the interpretive stage or cognitive stage in which a learner is able to complete a task or a close approximation of the task with initial instructions that are often verbal. This stage frequently involves the learner talking to oneself when performing the action. The second stage is the knowledge compilation or associative stage. In this stage the learner works through the procedure and applies or learns the declarative knowledge necessary to correct any procedural errors. As errors are corrected, the learner develops stronger procedural knowledge. The verbal cueing of talking to oneself begins to decrease and ultimately disappears. The third stage is the strengthening and tuning of knowledge, or autonomous stage, where the learner performs the procedure automatically

without verbal cueing and any changes made to the procedure serve to strengthen the process and make it more efficient (Wheatley & Wegner, 2001, Anderson, 1996b).

Ericcson (1993) and colleagues identified a fourth stage of automaticity. Reserved only for expert performance, this stage describes experts who have mastered the majority of the training provided by their teachers or coaches. At this level, these experts also begin to add their own innovative and creative contributions to their field of expertise.

With practice, cognitive tasks become fluid and automatic and subject matter experts are able to deploy strategies to solve problems with ease (Clark, 1999). Expertise is developed through repetition of task performance during deliberate practice. Task performance improves when behavior is adapted and performance feedback is received. It is deliberate practice that is essential for expertise acquisition and continuous improvement of performance. Expert performance reflects intense training and preparation and, in most domains, at least 10 years of experience is required to reach this level of performance (Ericsson, et al., 1993).

Clark and Elen (2006) assert that automation of knowledge is advantageous to expertise as it sustains the capacity of experts to respond to novel problems with speed, accuracy, and consistency within a specific domain. Research has suggested that experts are unaware of the information they use to complete complex tasks because of automaticity. As experts develop declarative knowledge, it becomes gradually more automated. Automated processes often initiate without prompting and once they initiate, automated processes run to completion without being available for conscious monitoring (Feldon, 2007a). Automated processes are resistant to change because of their unconscious nature, and it takes considerable sustained monitoring of mental processes to modify or eliminate

an automated process (Clark, 2008; Wheatley & Wegner, 2001).

Automated knowledge helps to alleviate cognitive overload and/or processes that can impede the efficiency of working memory. The length and amount of information that can be retained and processed in working memory is limited. Procedural knowledge is difficult to articulate because it has become an automated, unconscious action. Critical information omitted by experts may thwart effective knowledge sharing (Kirshner, et al., 2006; Wheatley & Wegner, 2001). Feldon (2007a) noted that even when teachers are made aware of omissions in their automatic teaching processes or are provided with goals to modify these automated processes, they fail to make changes because their working memory becomes occupied with the changes needed while their automated processes begin and run to completion because working memory is occupied. Because experts have automated procedural knowledge they cannot consciously explain, methods like CTA are critical to deconstruct this knowledge into its original steps (Clark & Estes, 1996).

Automaticity enables subject matter experts to perform complex tasks requiring declarative and procedural knowledge with less cognitive processing through repeated use and practice. This frees up working memory to address novel tasks. However, due to its unconscious quality of automaticity, procedural knowledge is resistant to change and difficult to modify, eliminate, or express to others using concrete language and examples.

Expertise

Characteristics of Experts

The characteristics of expertise include extensive and highly structured knowledge of the domain, effective and often multiple strategies for solving problems within their domain (Glaser & Chi, 1988), and expanded working memory that utilizes

elaborate schemas to organize information effectively for rapid storage, retrieval, and manipulation. An expert is one who has accomplished this within their specific domain (Feldon, 2007b).

Chi (2006) defines an expert (adapted from Hoffman, 1998) as a distinguished or brilliant journeyman highly regarded by peers whose judgments are uncommonly reliable and accurate. The expert's performance shows skill and economy of effort and the ability to deal effectively with rare or "tough" cases. An expert is one who has special skills or knowledge learned from extensive experience within their specific domain of practice (Feldon, 2007b; Bedard & Chi, 1992). Ericsson and Lehman (1996) add to this the idea that expert performers can display their superior performance reliably upon demand. To achieve this control, they contend expert performers need to master all relevant factors—including motivation.

One important difference between a novice and expert is knowledge organization. Experts not only have more knowledge than a novice in a certain domain, but they also have more advanced knowledge stored cognitively in more developed schema. This information is organized to allow experts the rapid retrieval of information with minimal cognitive effort (Feldon, 2007b; Chi, 2006; Glaser & Chi, 1988). Novices rely on literal, predictable surface information to solve complex tasks, whereas experts rely on concepts, deeper learning, and mental models not readily apparent. Experts also have increased incidental memory and memory skills that improve and increase knowledge acquisition and manipulation (Feldon, 2007a; Ericsson & Lehmann, 1996; Glaser & Chi, 1988). Experts are able to discriminate between various cues and develop representations that create meaning to complex problems (Feldon, 2007b; Bedard & Chi, 1992). Experts can

engage in forward reasoning processes based on their domain knowledge. They leverage their highly structured knowledge of relevant concepts and principles within the domain to generate effective strategies (Feldon, 2007b; Glaser & Chi, 1988). Experts solve problems deductively by manipulating mental models to identify optimal solutions based on requirements of task and task constraints. Thus, experts can see and detect features and solutions that novices cannot (Chi, 2006). It is the goal of CTA to capture this expertise and provide to novices this opportunity to improve the accuracy and efficiency of their own knowledge and skills.

Building Expertise

Expertise, by its nature, is acquired as a result of continuous and deliberate practice in solving problems in a specific domain. Expert knowledge was once thought to be a gift from the gods (Ericsson & Charness, 1994), and was later thought to be a natural or inherited trait. However, research in inherited expertise has been unfruitful (Ericsson, Krampe, & Tesh- Romer, 1993; Ericsson & Charness, 1994). Modern research has shown thus far that experience and practice are the main components of expertise. Simon and Chase (1973) found that experts become so after approximately 10 years of deliberate practice and experience. Expertise attainable in one domain is not easily transferable to other domains. Thus, an expert's knowledge and skill are important attributes of the expertise itself more so than natural ability (Ericsson, et al., 1993).

Ericson (2004a) suggests a theory of skill acquisition by arguing that the primary goal of a learner is to reach a level of mastery that allows them to perform tasks at an acceptable level or engage in recreational activities with friends at a proficient level. In the first phase, the novice tries to understand the activity and concentrates on avoiding

mistakes. The second phase finds large mistakes becoming increasingly rare while performance begins to appear more natural and smooth. The amount of concentration to perform the task begins to decrease as well. After a limited period of experience and training, the novice has reached an acceptable level of performance. Over time and with continued practice, the novice's ability become more automated as they perform skills with little apparent effort. Soon the performer has reached a high level of performance, but often not maximum performance (Ericsson, et al., 1993).

Ericsson (2004) argues further that at this level of expertise, improvement requires deliberate practice and conscious efforts to circumvent the automatic, unconscious skills already learned. It is this deliberate practice with attendant monitoring, planning and analyses of performance that is needed to attain further changes towards maximum performance (Ericsson & Charness, 1994; Ericsson, et al., 1993). An expert's inability to improve is not attributable to lack of talent but more likely to a lack of deliberate effort, feedback, and planning. It is possible, however, that a lack of improvement could be attributable to an innate physical barrier that prohibits expertise (Ericsson & Charness, 1994, Ericsson, et al., 1993).

Alexander (2003) proposed the Model of Domain Learning (MDL). This theory shows the nature of developed expertise in academic domains rather than defining this nature from non-academic tasks within the realm of problem solving. The Model of Domain Learning looks at the path that a novice takes to be considered an expert. There are three components that play a role in creating expertise in academic domains. They are knowledge, strategic processing, and interest. These components are thought to influence one another at each stage but at different rates. These three components work

together as individual learner's progress through three stages of domain learning. The first stage of MDL is acclimation where the learner becomes acclimatized to a complex and unfamiliar domain. The second stage is competence where the learner begins to demonstrate a foundational body of knowledge from within the domain which is becoming more cohesive and principled in its cognitive structure. The third and final stage is proficiency where the components have synergistically worked together to move the learner from competence to expertise. The learner's knowledge base is not only broad but deep, and characterized by new knowledge contributions by the expert learner.

By engaging in deliberate practice and problem solving, a novice learner develops over time (usually 10 years) more efficient schema, knowledge, skills and decision steps.

Consequences of Expertise

As new knowledge becomes automated and unconscious, experts are often unable to completely and accurately recall the knowledge and skills that comprise their expertise, thereby negatively impacting instructional efficacy and leading to subsequent difficulties for learners. Expertise is domain limited. Experts also rely on contextual cues within their domain and often overlook details or surface features of a complex task (Feldon, 2007b; Chi, 2006).

When pressed, experts are overly confident in their knowledge and ability to share with others. They often make inaccurate predictions and offer incorrect advice or judgments. Their knowledge is automated to such a degree that it is ingrained deeply and difficult to change or modify. Experts, while knowledgeable of multiple approaches to problem solving, often fall into habitual approaches that are goal-activated and often limit the available solutions sought to solve problems (Chi, 2006, Feldon, 2007b).

Feldon (2007b) found inaccuracies prevalent in explanations of self-reported problem solving processes by experts. The research found that as skills improved, self-report errors increased. Feldon found that experts attribute their action to intentional decision-making processes. Yet, this belief can lead these experts to unintentionally fabricate reasoned explanations for their behavior. The highly efficient schemas that store and retrieve data can also interfere with accurate recall of procedural knowledge. Consequently, the most often employed elements would be the most difficult to articulate through recall. The automaticity of experts impairs their ability to consciously identify many of the decisions they make thereby omitting key details and process information necessary to provide instruction on optimal performance.

Expert Omissions

Experts in an instructional role may unintentionally leave out information that students must master when learning procedural skills. Feldon (2004) found in a study of instruction research design that automaticity and self-reporting accuracy were negatively correlated. Feldon found that 70% of experts were unaware of the strategies used in practice. Feldon and Clark (2006) found that when experts describe how they perform a complex task, they unintentionally omit up to 70% of information critical for novices to learn to successfully perform a procedure (Clark, 2008; Bedard & Chi, 1992). Novices attempt to fill in the gaps with their own steps developed using trial-and-error methods prone to mistakes and inefficiencies. As these novices continue to use and practice these gap-filling steps, they become more difficult to modify and unlearn (Clark, 2008).

Clark (Clark, Pugh, Yates, Inaba, Green, & Sullivan, 2011) and colleagues found in a study of surgeons that expert surgeons have less time to share expertise with novice

surgeons as training in hospitals has moved towards a more simulated environment. Expert surgeons have gained expertise through practice and experience such that the steps used by these veterans become blended together (Clark & Elen, 1996). When asked to describe the procedure, these experts omit specific steps because of the unconscious nature of the automated processes. Additionally, experts omit essential information and are unable to identify points in automated procedures where important decisions are made. Consequently, these errors are not recognized by experts because of their own automated knowledge (Wheatley & Wegner, 2001). More importantly, these errors are prone to increase in number and impact during stressful situations (Joslyn & Hunt, 1998, in Shraagen, 2000). CTA looks to counteract these omissions by capturing expert knowledge and skills through elicitation and knowledge representation methods.

Cognitive Task Analysis

Definition of CTA

Cognitive Task Analysis has evolved from traditional behavioral task analysis (BTA) methods, and is utilized to elicit and explain expert knowledge within a specific domain. CTA uses a variety of interview and observation strategies to capture the explicit and implicit expert knowledge that experts use to complete complex tasks. CTA is an outgrowth of traditional BTA. However, the behavioral focus of traditional methods makes them inadequate to support current demands (Clark & Estes, 1996). Beyond traditional behavioral task analysis methods, CTA identifies the knowledge, thought processes, and goal structures that trigger observable task performance, as well as overt and covert cognitive functions (Chipman, 2000; Clark et al., 2008). CTA yields information through elicitation techniques that produce knowledge and skills that can be

used for creating learning objectives, job descriptions, schemas, hiring criteria, and performance appraisal systems.

CTA History

The historical foundations of CTA were planted as far back as 1880 and are found throughout the history of applied psychology and industrial engineering (Hoffman & Woods, 2000). Militello and Hoffman (2008) state that the foundation of modern CTA is rooted in Taylor's (1911) time and motion studies and the work of Frank and Lillian Gilbreth who studied the cognitive and collaborative elements of work performance to improve performance (Annett, 2000; Schraagen, Chipman, and Shalin, 2000).

Human factors in the operation of complex machine systems became obvious areas in need of research before and especially after World War II. The study of cognitive engineering resulted from advances in technology and computers, as well as computerization within settings which required the need to understand human behavior in complex situations. Cognitive engineering also sought to describe how problem-solving in complex situations can be improved as they evolved from the increased workload, mental load, and cognitive task load that have resulted from rapid advances in technology (Annett, 2000; Woods & Roth, 1988).

The term Cognitive Task Analysis came into general use among the education and technology community in the early 1970s from the research of Gagne (1962) and Glaser (1976). The complex and cognitive demands of the workplace since the 1980's have encouraged the use of CTA as well as fueling the demand for CTA-derived expert systems and other applications of artificial intelligence (Hoffman & Woods, 2000). The need for change driven by social, psychological and cognitive factors has resulted in CTA

being used to meet the need for improved human performance in work settings and expert systems (Clark & Estes, 1996). CTA has been used in many studies and is now one of the most successful elicitation methods of expert knowledge used today.

The advanced study of human cognition ushered in the need to understand human behavior in complex systems, and a deeper understanding of cognition in human performance. Interest increased in capturing human expertise which time and motion studies could not capture and capturing the mental processes and decisions behind expert performance, and the illumination of declarative and procedural knowledge. However, the basis of CTA in cognitive theory is not fixed because models of cognition are somewhat fluid (Annett, 2000). CTA is the advanced task analysis system that can capture complex cognitive decisions and knowledge, thereby helping to fill the gap that the outward focus of BTA cannot see.

Cognitive Task Analysis Methodology

A number of researchers have identified the stages through which a typical, ideal cognitive task analysis would proceed. An ideal model of cognitive task analysis, one that is not subject to resource restrictions, is typified by a series of distinct steps:

1. A preliminary phase.
2. The identification of knowledge representations.
3. Knowledge elicitation techniques.
4. A review and possible modification of the knowledge elicited to date by experts.
5. Using the results of the analysis as a basis for an expert system or expert cognitive model. (Chipman, et al., 2000; Clark, et al., 2008)

While over 100 types of cognitive task analysis have been developed, most varieties follow a five-stage process. Multiple authors have developed taxonomies that categorize these techniques according to a number of criteria.

Clark (2014) and Clark et al. (2008) suggests that the Concepts, Processes, and Principles (CPP) is one of the most often used evidence-based CTA methods. CPP is based on the PARI (Precursors, Actions, Results, and Interpretations) method but adapted to incorporate Merrill's (1994, 2002, 2006) recommendations for instructional design. PARI is a process where experts, working in pairs, look for complex cognitive and behavioral demands in each of the 4 categories above. The experts think aloud, ask probing questions, and use diagrams or drawings (Clark, 2014; Hoffman & Militello, 2009; Yates, 2007; Yates & Feldon, 2001, Tofel-Grehl & Feldon, 2013). CPP has been shown to be an effective way across disciplines to capture expert knowledge.

Taxonomies of Knowledge Elicitation Techniques

Knowledge elicitation is the process of extracting domain specific knowledge that underlies human performance. Cooke (1999) identified four categories of elicitation. The first is observations where analysts observe task performance within a domain and provide a general conceptualization of the domain observed and constraints and issues to be addressed in future phases. The second category is interviews. This is the most often used elicitation method using various types of interview techniques such as structured, unstructured, goal decomposition, teach-back, and PARI (Cooke, 1994). The third category is process tracing which entails the collection of behavioral events with an analysis of the resulting protocols. Inferences are made about underlying cognitive processes and is the most often used to elicit procedural information. The fourth category

is conceptual methods. Conceptual methods gather and represent conceptual structures in the form of domain-related concepts. It is used to gather knowledge to improve interface designs, to guide development of training programs, and to understand expert-novice differences. Cook (1999) suggests the defining characteristic of knowledge elicitation is the collection of information from a human source of knowledge. Techniques used most often by determine the actions of the knowledge elicitor. Generally, the more formal the technique used, the less active the role of the knowledge elicitor. The less formal techniques often require more introspection and verbalization from the expert. Formal methods require more preparation of elicitation materials. However, formal methods are more artificial and lack face validity (Cooke, 1994).

Pairing Knowledge Elicitation with Knowledge Representation/Analysis

Since the current classification schemes organize CTA methods by process rather than the desired outcome or application, practitioners find it difficult to select an optimal method for their specific purpose. Such taxonomies/typologies may make it difficult for analysts to choose an appropriate CTA approach, especially when the desired result is a particular type of knowledge (Yates, 2007). Yates (2007) identified the most frequently used CTA methods and the knowledge types associated with the respective methods and outcomes, or a product approach versus a more traditional process approach.

Although data analysis and knowledge representation are considered as two separate techniques of CTA, they are often linked with elicitation methods. Since both techniques share common characteristics, data analysis and knowledge representation are often combined into a single category in a classification scheme. Seeing CTA as a *pairing* of knowledge elicitation with an analysis/representation technique may be more

effective. Yates (2007) found the most frequently used CTA method pairings include standardized methods and informal methods. For efficiency and optimal use, CTA methods need to be classified in terms of desired outcome rather than process. It was also found that the application of these methods have been associated more with declarative knowledge than procedural knowledge. The study also found that standardized methods appear to provide greater consistency in the results obtained than in informal models. Finally, analysis of interactions among applications, methods, and knowledge types may be influenced by representation bias. CTA relies on the effective use of both elicitation and analysis/representation methods to elicit expert knowledge.

Effectiveness of CTA

Cognitive Task Analysis has proven to be an effective method for capturing the explicit observable behaviors, as well as the implicit, unobservable knowledge of experts. CTA addresses the issues of research that look at the interactions between people, technology, and task completion in education and work settings (Crandall, Klein, & Hoffman, 2006). Data captured from CTA supports effective, efficient training and instructional activities in complex systems (Hoffman & Militello, 2009). CTA is also useful to educators to identify the skills, perceptual differences, and procedures that might be left out of instruction (Crandall, et al., 2006).

Asking experts to list steps or to make observations does not accurately account for their abstract knowledge. One reason that CTA is an optimal method for capturing knowledge includes an emphasis on the aspects of the task that are important to the learner (Crandall, et al., 2006). CTA also assists in the scalability of understanding abstract knowledge across domains, and provides a framework for problem solving and

general principles of knowledge (Means & Gott, 1988). Compared to other strategies, Cognitive Task Analysis is more effective at capturing the unconscious, complex cognitive action and decision steps of experts.

Efficiency of CTA

Research has shown instruction using CTA is more cost effective and efficient than other elicitation models. CTA informed instruction has been found to have stronger results than regular instruction. As compared to behavior task analysis, CTA-informed instruction can decrease days spent in training by almost 50% (Clark, et al., 2008; Clark & Estes, 2006) Studies looking at knowledge assessments found that test takers using CTA-informed instruction experienced nearly a 50% reduction in time spent in trying to find a solution to a problem using their new-found knowledge (Schaafstal, et al., 2000). Flynn (2012) looked at a 3i+3r independent CTA method compared to a 1i+3r incremental CTA method. The research found the incremental 1i+3r CTA captured more decision steps than the independent 3i+3r CTA method. Flynn also found the incremental method took 67% less time and was 70% less expensive to conduct. The use of CTA in instruction and training has been proven to be positively related to cost savings due to reduced training times with comparable learning outcomes

Benefits of CTA for Instruction

Studies that have applied Cognitive Task Analysis to capture knowledge and to create instruction delivery models have uncovered several benefits and useful design strategies as compared to other forms of instruction. CTA has captured the explicit and implicit knowledge used by experts for training and for computer systems (Hoffman & Militello, 2009; Crandall, et al., 2006). CTA has captured expert knowledge, such as

critical decision points, judgments, and patterns, which were essential to the training of firefighters (Crandall, et al., 2006). CTA has identified the precise protocol needed for troubleshooting within a specific domain (Means & Gott, 1988). CTA elicited the principles of troubleshooting which could be global learning objectives across many domains. However, the problems used here as case-examples should be considered within the scope of the specific domain or context being studied. CTA successfully enables a more structured and guided instruction as compared to alternative instructional strategies (Clark, et al., 2010). CTA has proven to be an effective method for eliciting the nuances in expert knowledge, such as decision points and perspectives, resulting in a variety of instructional strategies utilizing the outcomes of CTA (Means & Gott, 1988; Crandall et al., 2006; Hoffman & Militello, 2009).

Studies across a variety of domains have explored the degree to which CTA-informed instruction has influenced learning outcomes. CTA results in a nearly 30-45% learning performance increase as compared to instruction that is informed by traditional observation or BTA. There is evidence that CTA-informed instruction is advantageous for increasing learning and reducing the number of mistakes made by recently graduated healthcare students (Clark, 2014). CTA has been shown to be useful in understanding communication and decision making among physicians. By understanding physician communication and decision making processes, there is a possibility of preventing harm to patients (Fackler, et al., 2009). Tofel-Grehl & Feldon (2013) conducted a meta-analysis of CTA methods and concluded that, despite CTA's higher front-end implementation costs, the results from CTA-based training are highly effective compared to non-CTA based training. They also concluded that the PARI method yielded the

largest effects. Thus, CTA has been shown to be effective in capturing expertise and informing instruction in a wide range of domains, including software development, military (Tofel-Grehl & Feldon, 2013; Fackler et al., 2009; Flynn, 2010), business sector (Klein et al., 1989), and medical fields (Clark, 2014).

Comparison of 3i+3r individual and 1i+3r incremental CTA methods.

One of the negative aspects of CTA is the length of time and amount of money needed in the front end to perform an analysis, and to develop training materials or software from the knowledge collected. What if the time spent in elicitation could be reduced without a reduction in the quality or quantity of expert declarative and procedural knowledge? Flynn (2010) sought to answer this question by completing a comparative study looking at two versions of a (CTA) system as applied in interviewing recruitment officers for the US Army. Flynn (2010) described the first version of CTA used in her study as the 3i+3r individual method and the second version from her study was described as 1i+3r incremental method. A description of both methods will be given in Chapter Three. Using these versions of CTA, Flynn (2010) concluded that the 1i+3r incremental method was better able to capture more decision steps than was the 3i+3r individual method and at less cost and less time spent in analysis. Zepeda-McZeal (2014) sought to replicate Flynn's (2010) analysis of decision step elicitation by analyzing teaching informational reading comprehension to intermediate grade special education students. Zepeda-McZeal (2014) also varied her study by investigating which method was most effective in finding both action and decision steps. Zepeda-McZeal (2014) concluded that the 3i+3r individual method was more effective at gathering the greatest amount of action and decision steps. This study and the concurrent study (Lim, 2015)

seek to replicate Zepeda-McZeal's (2014) study to find which method, 3i+3r individual or 1i+3r incremental, is most effective in gathering the most action and decision steps from SMEs teaching expository writing.

Summary

CTA is a method for capturing expert knowledge by using interview and observation techniques to elicit a description of the implicit and explicit knowledge used by experts to perform complex tasks. When asked to describe how to perform domain-specific processes or procedures, they unintentionally omit up to 70% of critical information needed by novices to perform these tasks successfully. CTA has been shown to be an effective knowledge elicitation method in spite of its costs. The purpose of this study was to conduct a CTA to capture expert knowledge and skills in the area of expository writing instruction for eleventh grade students. CTA will be used to capture the action and decision steps of subject matter experts to develop a Gold Standard Protocol that can be used to inform instruction for novice teachers. Additionally, this study compares CTA methods with a concurrent study (Lim, 2015) by looking at the difference in action and decision steps captured using an individual (3i + 3r) CTA method and an incremental (1i + 3r) CTA method.

CHAPTER THREE: METHODOLOGY

The Current Study

The purpose of this study was to capture the expertise of high school teachers as they describe how they provide expository writing instruction to eleventh-grade students. This study used Cognitive Task Analysis methods (CTA; Clark, Feldon, van Merriënboer, Yates, & Early, 2008) as a knowledge elicitation method to capture the knowledge, decisions and skills of expert writing teachers in teaching expository essay writing. Studies have shown that expertise, valuable in informing instruction for novice teachers and students alike, becomes automated through practice and experience over time such that experts may omit up to 70% of critical information when asked to recall their actions and decision steps in performing a task (Feldon, 2007b; Clark, 1999). This study also examined the efficiency of two varying methods of CTA to capture the same task, the 3i+3r individual CTA method and 1i+3r incremental CTA method (Lim, 2015). This chapter discusses the research methodology employed in this descriptive study on CTA and presents details on the study design, participant selection, task instrumentation, data collection, and data analysis.

The research questions that guided this study are:

1. What are the action and decision steps that expert teachers recall when they describe how they provide expository writing instruction to their eleventh-grade students?
2. What percentage of action and/or decision steps, when compared to a gold standard do expert teachers omit when they describe how they provide expository writing instruction to their eleventh-grade students?

3. Which method of CTA, 3i+3r individual or 1i+3r incremental (Lim, 2015), is more efficient represented by the number of actions and decisions steps and represented by cost and time?

Participants

Eight expert English-Language Arts teachers within a Southern California school district were selected randomly for this study or the concurrent CTA study using the 1i+ 3r incremental CTA method (Lim, 2015). Based on previous research indicating the need for interviews with at least three experts (Clark, et al., 2008; Bartholio, 2010; Chao & Salvendy, 1994; Crispen, 2010), three of the eight experts were interviewed using the 3i+3r individual CTA method in this study, while the three other random SMEs were interviewed using the 1i+3r incremental CTA method (Lim, 2015). Each study used one of the remaining two SMEs to verify the protocols created.

These expert teachers were selected for both studies based on the following criteria. These teachers must be at the top of their profession and have a minimum of five years and preferably ten years of consistent and exceptionally successful on-the-job experience (Ericsson, Krampe, & Tesch-Romer, 1993). This determination of success is based on reliable, industry standard outcomes that have been or can be validated, and not merely based on "time on the job" (Ericsson & Charness, 1994). These subject matter experts (SMEs) were selected based on levels of education (Master's degree or higher), their professional development (PD) and training in expository writing instruction (i.e., ERWC training), peer recognition as having achieved expertise in expository writing instruction, and experience in the widest possible variety of settings, problems, specialties and applications that characterize the range of contexts that students may face when they

graduate. Finally, these subject matter experts were selected based on not having provided teacher instruction to others on the performance of this task within the past year or more. Yates (2007) suggests that trainers or instructors often describe how they would train others in task completion rather than how they actually perform the task on the job or in the classroom.

The Assistant Superintendent of the school district wherein the expert teachers worked was contacted and provided a brief description of the research study, including a list of potential SMEs. This Assistant Superintendent approved both the study and the list of potential SMEs. Further permission was obtained from a fellow Assistant Superintendent whose duties include approving outside research studies taking place within the district, from the school board, and from the principals of the school sites where the SMEs worked. Each prospective SME was then contacted through email detailing the purpose of the study, study requirements, and an invitation to participate.

The selection of SMEs to either the 3i+3r individual or 1i+3r incremental method (Lim, 2015) of CTA was made randomly. More specifically, randomness of SMEs assigned was based on their availability for interviews and the researchers' timetables. For example, the data collected from the initial in-depth interview with SME 1 was used for the 1i+3r incremental method so that the researcher (Lim, 2015) could immediately begin developing the CTA protocol for the subsequent SME interview. SME 2, SME 3, and SME 4 were then selected to inform the present study using the 3i+3r individual method as a result of those SMEs becoming available for interviews shortly after the interview with SME 1.

Table 1

SMEs interviewed for both the Current Study and the Concurrent Study (Lim, 2015)

SME	Years of Experience teaching expository writing	Level of education attained	Eleventh-grade courses taught at varying levels of difficulty	Hours of Professional Development in Expository Writing	Was recommended by way of the district, peers, or both
1*	17	M.A. in English Literature	2	75	YES
2tt	8	M.F.A in Creative Writing	1	40	YES
3tt	7	M.A in English	2	20+	YES
4tt	13	M.A. in English/Ph.D Candidate	2	50	YES
5*	11	M.A. in English Literature	4	50	YES
6*	18	M.A. in English Literature	3	80	YES
7*	20	M.A. in English	0**	50	YES
8tt	20	M.A. in English Literature	3	75	YES

Note: All data is de-identified. Each SME is numbered for demonstration purposes only and numbering does not represent any rank order or selection criteria. SMEs with an asterisk (*) denote the 1i+3r incremental method, and SMEs with the double cross (tt) denote the 3i+3r individual method of CTA. The double asterisk (**) indicates that SME 7 has taught 20 total years of English, including the twelfth-grade level and the post-secondary level, but not at the eleventh-grade level.

In other words, the decision to not use SME 2, SME 3, and SME 4 to inform the 1i+3r incremental method (Lim, 2015) was based on the knowledge that the researcher would need enough time to develop the CTA protocol and confirm it prior to the interview with SME 2 to review the protocol.

Research has shown that conducting CTA with an excess of 4 SMEs reaches a point of marginal diminishing returns, which occurs when the knowledge acquired from a SME yields less than 10% in additional knowledge steps (Bartholio, 2010; Chao & Salvendy, 1994). Research indicates that three to four SMEs are optimal for knowledge elicitation (Bartholio, 2010; Chao & Salvendy, 1994; Crispen, 2010). Therefore, to remain consistent with research on the optimal number of experts for knowledge elicitation, three SMEs were randomly assigned to the 3i+3r independent method, along with verification from a fourth SME, and three were randomly assigned to the1i+3r incremental method, along with verification from a fourth SME.

Data Collection for Question 1: *What are the action and decision steps that expert teachers recall when they describe how they provide expository writing instruction to their eleventh-grade students?*

Procedure for data collection. The CTA procedure will follow the five steps of knowledge elicitation suggested by Clark, et al. (2008), as follows:

1. Collect preliminary information that builds general familiarity with study topic using document analysis, observation, and informal interviews.
2. Identifying knowledge types used by subject matter experts when performing the task which requires the researcher to identify declarative and procedural knowledge and possible hierarchal relationships in the application of identified knowledge types.
3. Applying the knowledge elicitation methods best suited for the study at hand.
4. Verifying and analyzing the collected data through use of qualitative data analysis techniques.

5. Organize results into a training tool (i.e., professional development or job aid).

Phase 1: Collect preliminary knowledge. This researcher is a public school teacher at the elementary level and has extensive experience teaching writing at that level. Preliminary knowledge and explanation was gathered through a review of literature on the subject was conducted to gather preliminary information on the subject at hand and to develop familiarity with expository writing instruction. Additionally, information was gathered throughout the study from a research partner who has several years experience teaching expository writing at the secondary level.

Phase 2: Identify knowledge types. While reviewing the literature, a thorough understanding of the characteristics and features of declarative and procedural knowledge was developed. To help in distinguishing between knowledge types, the researcher engaged in exercises with fellow researchers under the guidance of a senior researcher to recognize action and decision steps along with content knowledge types such as concepts, processes, and principles (Merrill, 1983). These knowledge classifications were used in the protocol created from data collection.

Phase 3: Identify knowledge elicitation techniques.

Instrumentation. Many different methods exist for conducting a CTA, but only six are evidenced based and can predict knowledge outcomes when followed correctly (Yates and Feldon, 20011). Of the six, two CTA methods helped guide the methods chosen for the present study (Clark, et al., 2008). The first is a semi-structured interview format that gathers concepts, processes, and principles (CPP). CPP using a multi-stage interview technique that elicits expert automated and conscious knowledge. The SME is asked to list the sequence of steps to complete the task and to describe problems an expert

should be able to solve after mastery of the task. The list of tasks and subtasks created become the outline for training development.

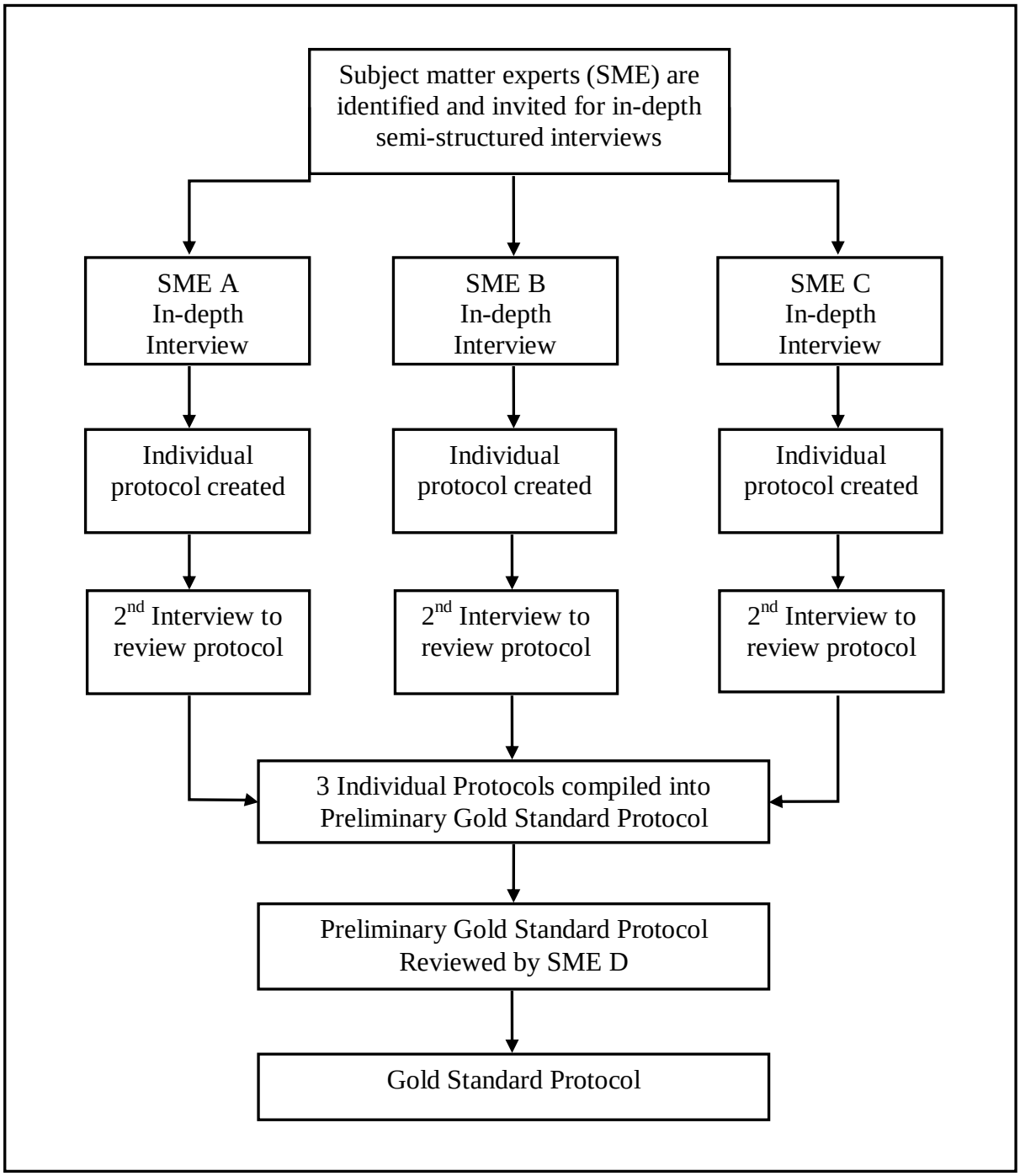

Figure 1. 3i+3r Individual Method

The second CTA method that informed this study is the Concepts, Processes, and Principles (CPP) technique (Clark 2006). CPP is based on the Precursor, Action, Result, Interpretation (PARI) method, which emphasizes "adaptive expertise" or the ability to solve novel problems not addressed in formal training programs (Clark and Estes, 1996; Shraagen, Chipman, and Shalin, 2000). PARI looks for procedural knowledge, as well as declarative knowledge, used to solve novel problems that occur in the future. Clark's (2006) CPP uses PARI steps, but also includes an instructional design component. CPP suggests holding interviews with at least 3 experts and has them describe the same task. Interviews are followed by experts engaging in self- and peer-review. Clark (2008) found that having 3 experts describe the same procedure results in similar strategies reported, but with varying decisions and analysis strategies the other experts might have missed. In this study, a semi-structured interview was used to capture the knowledge and skills from the SMEs using the concepts, processes and principles (CPPs) technique. The semi-structured interview protocol is attached as Appendix A.

In the present study, semi-structured interviews took place using the 3i+3r individual method as shown in Figure 1. This study performed an in-depth semi-structured interview for each of three subject matter experts (3i). From each interview, the knowledge and skills captured were written into a preliminary protocol outlining the steps and knowledge the expert uses to teach expository writing. Three preliminary protocols were created from each interview. Then, the protocol representing the knowledge and skills of each subject matter expert was presented in a second follow-up interview with each expert (3r) to provide an opportunity to make corrections, clarifications, or additions to their protocol. Once this process was completed, the

researcher compiled all three protocols into a preliminary gold standard protocol (PGSP). This PGSP was then presented to a fourth expert, SME D, who verified the elicited information and suggested missing steps or knowledge if needed. This interview is not as in-depth as the first three subject matter expert interviews. Changes suggested by SME D were included into the final gold standard protocol (GSP), which can be considered as a gold standard of expository writing instruction and can be used to design instruction and instructional materials (Clark, et al., 2008).

The GSP is developed using the action and decision steps considered as critical information novices need to perform a complex task. Action steps should begin with a verb and are statements about what a person should do such as, "Insert car keys into the ignition and turn to start the car." Decision steps should contain two or more alternatives to consider before taking an action, such as "IF the traffic light is yellow and you cannot maintain current speed through the intersection before the light turns red, THEN proceed to stop the car; IF the traffic light turns yellow and you can maintain current speed through the intersection before the light turns red, THEN proceed with caution."

As a comparison of the methods and their results, in the concurrent study, Lim (2015) followed the incremental CTA method by initially completing one in-depth interview (1i) followed by reviews of the CTA protocol with two more subject matter experts (3i) randomly chosen and different than the experts used in the current study. Once the CTA protocol was generated using the data from the initial in-depth interview with SME A, a follow-up interview took place for SME A to review the protocol with the researcher in order to provide SME A with the opportunity to make corrections and/or

additions. SME B was then asked to review SME A's protocol and make any possible corrections and/or improvements. This process of review was repeated with SME C in order to achieve a Preliminary Gold Standard Protocol (PGSP) of the task. As a final step, the PGSP was taken to SME D for one final review at which point the Gold Standard Protocol (GSP) was achieved.

Interviews. Following Institutional Review Board approval, a total of eight subject matter experts were asked to participate in semi-structured interviews that followed the methods described above. Because one of the goals of conducting the two studies concurrently is to determine whether the incremental (1i+3r) approach provides as much, if not more, useful decision information from the SMEs as the individual (3i+3r) method in less time and for less cost, both researchers were present for all eight interviews with the SMEs. This step was included to make certain both researchers, novices at using CTA, could ensure consistency in the questions asked of each SME and to keep conformity to the interview method. Completing the interviews together also contributed to "bootstrapping", or the time taken to educate the researchers about basic knowledge of the domain being studied (Hoffman, et al., 1998, Clark, 2008). The duration of each SME interview varied but averaged approximately 90 minutes. With the subject matter expert's approval, each interview was audio recorded.

Phase 4: Data Analysis. Each recorded interview was transcribed. The advantage of recording and transcribing the SMEs' interviews is that it enables deep analysis of the data captured through elicitation of the skills, decisions, and steps provided by each SME.

Coding. All of the interviews were transcribed and coded using a coding scheme developed based on Clark's (2006) method. It was used to code the data gathered from the semi-structured interviews. The coding scheme used is included in Appendix B.

Inter-rater reliability (IRR). The first transcript collected was coded by the researcher and another fellow researcher. The results were discussed and analyzed closely by both researchers to determine inter-rater reliability. Hoffman (1998) and colleagues suggest that once there is an 85% or higher IRR agreement, the coding process is consistent and reliable among different coders. However, if the IRR is less than 85%, Crandall and colleagues (2006) recommend the coding scheme and function-unit categories may need further refinement. IRR results are presented in Chapter Four.

SME protocol and verification. After each interview was coded and analyzed, a protocol was generated. This protocol was formatted as a list of action and decision steps, including the standards, objectives, reasons, and other information elicited during each interview. This type of protocol was generated for each SME, who was asked to review it for any modifications, if necessary. The goal for each SME was to verify the information as a correct reflection of the knowledge, steps, and decisions of this particular SME (Clark, et al., 2008).

Phase 5: Formatting the results.

Gold standard protocol (GSP). Once each subject matter expert reviewed and corrected their individual protocol, all three individual protocols were compiled into one formatted description of the action and decision steps needed to teach expository writing. This compilation, known as a Preliminary Gold Standard Protocol (PGSP, Clark, 2014) contains the knowledge, skills, and steps elicited from each SME and formatted as an

instructional guide. The PGSP was then submitted to a fourth SME to verify the contents and add any missing or incorrect steps. Any final changes suggested by SME D were included and the result was a Gold Standard Protocol (GSP). Both studies relied on the job aid format created by Clark and Yates (2010) to develop the GSP, which has been attached as Appendix C

Data Collection for Question 2: *What percentage of action and/or decision steps, when compared to a gold standard do expert teachers omit when they describe how they provide expository writing instruction to their eleventh-grade students?*

Spreadsheet Analysis. The final stage of data analysis was completed by transferring the action and decision steps of the final GSP to a spreadsheet. Each individual SME protocol was reviewed and compared to the GSP. If the individual SME protocol included the action and decision step then a "1" was placed in the appropriate cell for that SME. If there was no agreement, or the SME missed this action or decision step, a "0" was recorded. A frequency count was conducted and the total number of agreements and omissions between the individual SMEs and the GSP was calculated.

Data Collection for Question 3: *Which method of CTA, 3i+3r individual or 1i+3r incremental (Lim, 2015), is more efficient represented by the number of actions and decisions steps and represented by cost and time?*

The following criteria were used to determine which method of CTA is more efficient. First, the number of action and decision steps captured in the final 3i+3r independent method in this study were compared to the results of Lim's (2015) 1i+3r incremental method to determine which knowledge elicitation method yielded a greater number of critical action and decision steps. Furthermore, the total amount of time spent

to complete the 1i+3r incremental method as opposed to the total amount of time and cost to do the 3i+3r individual method was calculated. Specifically, the total time was calculated by adding the amount of time spent by the knowledge analyst to conduct the CTA interviews with each SME. The total cost was calculated by adding up the individual costs of transcribing each CTA interview.

CHAPTER FOUR: RESULTS

Overview of the Results

This study examines the declarative and procedural knowledge represented as action steps, decision steps, objectives, standards, and cues of expert expository writing teachers using an Individual (3i+3r) CTA method to capture this expertise. The results are organized by research question.

Research Questions

Question 1

What are the action and decision steps that expert teachers recall when they describe how they provide expository writing instruction to their eleventh-grade students?

Inter-rater reliability (IRR). IRR was completed by the researcher and a colleague to safeguard against researcher bias and to ensure consistency. IRR was measured by counting the number of coded items in agreement between both raters and dividing the result by the total number of coded items. The transcript from the first SME interview, labeled SME A, was coded using a shared coding scheme by the researcher and colleague to identify the objectives, standards, conditions, reasons, and action and decision steps. The results are shown in Appendix B. The Inter-rater reliability was established at 98%. Based on this result, the remaining interviews from SME B and SME C were coded by the researcher and the data collected was used to create an initial protocol for each subject matter expert.

Flowchart analysis. A flowchart was created from the protocol developed using data captured from SME A and is attached as Appendix D. The flowchart was analyzed and reviewed to ensure all action and decision steps flowed in a logical manner.

Additionally, decision steps were reviewed to ensure they had appropriate potential actions. The flowchart revealed some steps at the conclusion of the process had been neglected. Further analysis provided the actions steps needed to conclude the logical progression of the flowchart.

Gold standard protocol. All three preliminary protocols were analyzed and aggregated into a preliminary gold standard protocol (PGSP) for teaching expository writing to 11th grade students using the job aid found in Appendix E. After reviewing each protocol, it was determined that the protocol from SME A would be the foundational protocol upon which the gold standard protocol would be created. SME B's protocol was then taken and aggregated with SME A's protocol as each action and decision step found in SME B's protocol was compared to SME A's protocol. If the steps were identical in meaning, SME A's step would remain. However, both SME's were given credit for the action or decision step. The step would be coded with the "A" designation. For instance, SME B's designation is "B1R", meaning the line came from SME B (B) and from the 1st round interview (1R) held with that SME. If SME B had a step that did not match SME A, the step was added into the protocol and coded with credit given to SME B. Once this process had been completed for SME B, the process began again aggregating SME C's protocol. If SME C's action and decision step matched those of SME A or SME B, they were aggregated, coded, and credit given to SME C. If the SME C's protocol contained a step not found in the protocols of SME A and SME B, the step was added, to the protocol, coded, and credit given to SME C. Table 2 provides an example of this process.

Table 2

Example of Process toward creating main procedures in Preliminary Gold Standard Protocol (PGSP)

SME A	SME B	SME C
1. Assess students' prior knowledge and plan for student instruction. 2. Complete Literature Unit/ Demonstrate Thinking Process 3. Present topic as a problem 4. Provide Feedback and Examples to students 5. Conduct a Writer's Workshop 6. Assess the papers 7. Guide the revision of the papers.	**1. Prepare Unit Plan** 2. Assess students' prior knowledge and plan for student instruction. 3. Begin Literature Unit 4. Present topic as a problem 5. **Introduce Prompt/ Prompt Analysis** 6. Provide Feedback and Examples to students 7. Construct Essay Outline **8. Writing Instruction** 9. Conduct a Writer's Workshop 10. Peer Review and Revision	1. Prepare to teach. 2. Assess the student's prior writing knowledge 3. Implement Literature Unit 4. Present topic as a problem. 5. Introduce Prompt/ Prompt Analysis 6. Provide Feedback from Diagnostic Papers 7. Construct essay outline 8. Provide Writing Instruction. 9. Conduct Writing Workshop 10. Assess papers. **11. Hand back papers and provide optional opportunities for further revision.** **12. Take opportunities to publish student writing.**

Note: The bolded portions of text indicate a new step. A column for SME D was not added because nothing was added or changed to the main procedures during the interview with SME D.

Once the PGSP was created from the aggregation of all three preliminary protocols, it was sent to SME D for verification. SME D was asked to review the PGSP for suggestions of any possible additions, modifications, or deletions to the PGSP, a task different than that asked of SMEs A, B, and C.

The final result and answer to Research Question One is the gold standard protocol (GSP) found in Appendix E, which has captured the expertise of 4 SMEs and is the actions and decisions steps expert teachers use to teach expository writing. The GSP found there are 12 procedures for teaching expository writing. They are as follows:

1. Prepare to teach.
2. Assess the student's prior writing knowledge.
3. Implement Literature Unit.
4. Present topic as a problem.
5. Introduce Prompt/ Prompt Analysis.
6. Provide Feedback from Diagnostic Papers.
7. Construct essay outline.
8. Provide Writing Instruction.
9. Conduct Writing Workshop.
10. Assess papers.
11. Hand back papers and provide optional opportunities for further revision.
12. Take opportunities to publish student writing.

The gold standard protocol (GSP) created from the compilation of each individual SME's preliminary protocol contains the actions and decision steps these SMEs use in teaching expository writing to their students. Along with the steps described, the GSP also contains reasons these experts do what they do and also standards that describe what this action or decision step seeks to do in practice. A novice teacher can follow this protocol and, with small variation as needed, be able to teach expository writing to their students. This protocol has applicability in not only 11th grade but also in other grade levels on a high school campus. If applied in other grades, there might need to be some additional changes implemented to meet grade level and district level requirements.

The GSP contains the actions and decisions of these expert teachers in a step-by-step format. Because of the knowledge submissions of the experts, there are at time various paths for novice teachers to follow based on what they are attempting to teach in to their students. For instance, step 9.6 begins a section on various ways to handle peer review of papers in class. A novice teacher can choose which path fits her needs and follow the steps in 9.6, 9.7, or in 9.8. By determining the objectives a novice teacher would like to achieve, the GSP can help this teacher find step-by-step instructions on how to proceed to having her students complete an expository essay.

Recalled action and decision steps. A spreadsheet was used to compile and organize data on elicited action and decision steps represented by the final Gold Standard. The spreadsheet can be found in Appendix F. In the first column, each step of the gold standard protocol was coded with "A" for action steps and "D" for decision steps. There are some protocol entries such as standards, reasons, and objectives. These are not steps and were left out of the spreadsheet. In 4 columns following the actions or decision steps, data was entered reflecting which SME was responsible for each step. The columns were labeled "SME A", "SME B", "SME C", and "SME D" for Round 1 interviews. If a step is attributed to one or more SMEs, the cell is marked with a "1". If the step is not attributed to a SME, then a "0" was marked. As an example, step 1.3.1 (line 7) has a "1" attributed to all three SMEs. However, step 1.3.2 was attributed to SME B only. Consequently, a "1" is placed in the column for SME B and a "0" is placed in the other 3 columns. The total number of actions and decision steps were tabulated and are noted in the spreadsheet. Table 3 provides a total of the action steps, decision steps, and both action and decision steps.

Table 3

Cumulative Action and Decision Steps Captured for Each SME using the Individual (3i+3r) CTA method.

	Action Steps	Decision Steps	Total Action and Decision Steps
SME A	100	28	128
SME B	132	18	150
SME C	123	24	147
SME D	278	52	330

Note: A fourth row was included for this table because SME D provided new action and decision steps during the interview.

Action and decision steps contributed by each SME. Table 3 reports action and decision steps reported by each SME. The steps reported in Table 3 are not solely attributable to one SME only. The actions and decisions steps reported from each SME, when added together, result in amounts larger than the amount of action and decisions steps listed in the gold standard protocol. In many cases, multiple SMEs reported the same action or decision step throughout the CTA process. The SMEs reported a total of 333 action and decision steps. All three experts recalled less than the total number of action and decision steps elicited with CTA as seen in Figure 2.

The percentages of action and decision steps reported by SMEs A, B, and C as compared to the total action and decisions steps contained in the gold standard protocol was between38.44% and 45.05%. None of the SMEs reported more decision steps than action steps. SME B and SME C reports of action and decision steps were relatively comparable with a difference of 3.21% in action steps and 11.53% in decision steps.

SME A had less action steps reported (5.7 %) than the next SME but reported more decision steps (7.7%) than the SME B and SME C. The range of percentages of actions steps is 6.61% and the range of decision steps is 19.23% for SMEs A, B, and C.

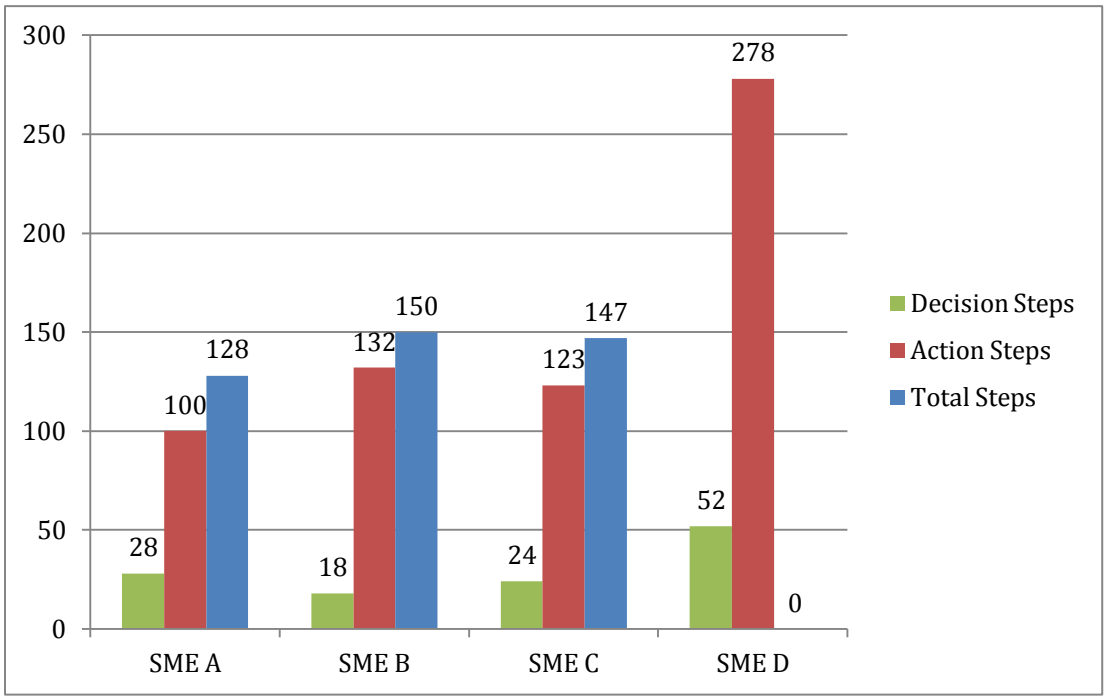

Figure 2. Number of Decision Steps, Action Steps, and Action and Decision Steps for SME A, SME B, SME C, and SME D captured through 3i+3r Individual CTA. Total non-repeating decision and action steps from CTA process represented in the gold standard protocol: decisions steps- 52; action steps-281; action and decision steps-333.

SME D was asked to verify the steps contained in the protocol and to add missing steps if needed. Thus, the amount of action and decisions steps is much more than for the other SMEs. During verification, SME D agreed with the action and decision steps of the other SMEs unless a change seemed in order. In these cases, SME D added an action step or suggested a modification to an existing step. Because of this, SME D was attributed with 278 action steps in agreement with the other SME's. SME D was also attributed with 52 decision steps for a total action and decision step amount of 330 total steps.

Action and decision steps contributed in round two interviews. Once preliminary protocols had been completed for each SME, a second interview was held to allow each SME review their data and add, subtract, or modify information. Further analysis of this data is shown below in Table 4.

Table 4

Cumulative Action and Decision Steps Captured for Each SME in Round 2 Interviews.

	Action Steps	Decision Steps	Total Action and Decision Steps
SME A	0	0	0
SME B	6	0	6
SME C	2	0	2

Note: These actions and decision steps are included in the amount reported in Table 1.

As seen in Table 4, SME B added 6 more action steps to the protocol created after the first interview. SME C was able to add only 2 more action steps. SME A did not add any action steps and all three SMEs did not add any additional decision steps. All three SME's made minor clarifications to some of the steps contained in their protocols, but very few additional action and decision steps were added or subtracted.

SME D was not included in analysis of the results of 2nd round interviews. SME D was given the opportunity to verify the preliminary gold standard protocol rather than participate in the in-depth interviews held with SMEs A, B, and C. This resulted in a second interview was not being held for SME D.

Alignment of SMEs in describing the same action and decision steps. Analysis was conducted to determine the number and percentage of action and decision steps recalled by each SME that were aligned to one another. For each action and decision step

reported, each SME was given credit if they submitted a step or matched a step already submitted. After all three protocols were aggregated as one, a number for each action and decision step was placed in a spreadsheet column entitled "Alignment." For each "1" attributed to a step, the quantity was added and recorded in the column. If only one SME added a particular step, then a "1" was added in the alignment column. If two SMEs had provided matching steps, then a "2" was placed in the column. Finally, if all three SMEs contributed this step, then a "3" was placed in the column. A score of "1" is considered slightly aligned, a score of "2" is considered partially aligned, and a score of "3" is complete alignment. Table 5 reports the amount of aligned action and decision steps.

Alignment results show in Table 5 that all four SME's were completely aligned on 26 action steps and 5 decision steps. When comparing action and decision steps that were completely aligned, 83.87% of those steps completely aligned were action steps and 16.13% were decision steps. Three of the SMEs were highly aligned on 30 action steps and on 8 decision steps, for percentages of 78.95% and 21.05% respectively. When comparing steps that were partially aligned, only two of the SME's were aligned on 214 (84.58%) action steps and 29 (15.42%) decision steps at the same time. Finally, eleven action steps and no decision steps were reported by one SME during the interviews held.

When analyzing alignment of total action and decision steps, all four SMEs were found to be completely aligned on 9.31% of total action and decision steps as shown in Figure 3. To be highly aligned, three of the SMEs reported similar action and decision steps 11.41% of the time during their interviews. At least two SME's were aligned 75.98% of the time while only one SME reported an action or decision step alone that none of the others reported 3.30% of the time.

Table 5

Number and Percentage of Action and Decision Steps that are Completely Aligned, Highly Aligned, Partially Aligned, and No Alignment.

	Action Steps		Decision Steps		Total Action and Decision Steps	
Complete Alignment	26	83.37%	5	16.13%	31	9.31%
High Alignment	30	78.95%	8	21.05%	38	11.41%
Partial Alignment	214	84.58%	39	15.42%	253	75.98%
Slight Alignment	11	100%	0	0.00%	11	3.30%

SME D was included in this analysis. Analysis for alignment looks to determine what actions and decisions steps might be common across all experts interviewed. SMEs A, B, and C were interviewed separately and their responses were unknown to each other.

Thus, the actions and decision steps reported should not have been influenced by one another. SME D was given a copy of the preliminary gold standard protocol to review and was asked to confirm the action and decision steps contained in the protocol and if there were any changes needed to improve it. By confirming the action and decision steps in the PGSP, SME D became aligned with the steps reported by the other three SMEs. SME D did contribute 3 action steps the other SMEs did not contribute. Consequently, any steps added by SME D must, by default, be a step none of the other SMEs added during their interviews.

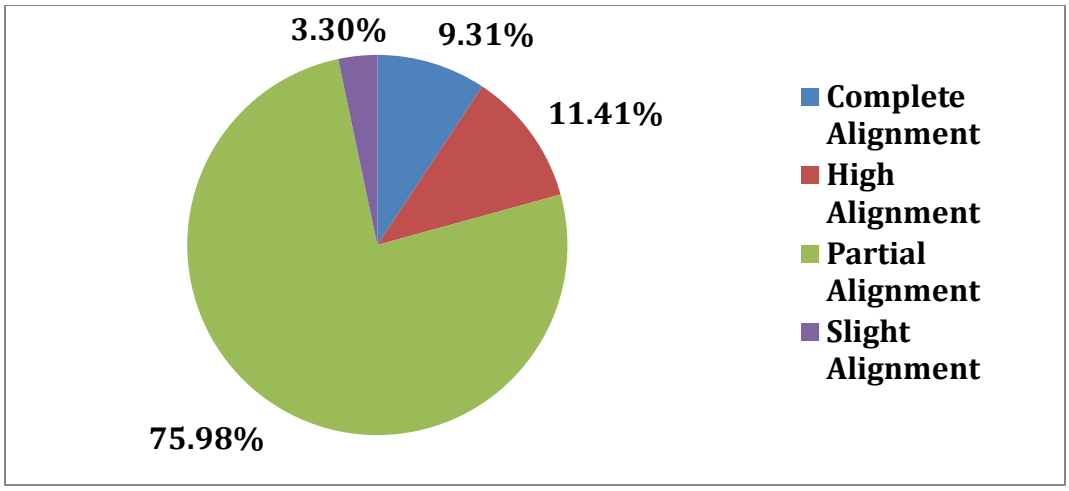

Figure 3. Action and Decision Steps that are Completely Aligned, Highly Aligned, Partially Aligned, and No Alignment.

Question 2

What percentage of action and/or decision steps, when compared to a gold standard do expert teachers omit when they describe how they provide expository writing instruction to their eleventh-grade students?

Total knowledge omissions. Analysis was completed to determine the percentage of action and decision steps omitted by each individual SME when describing the knowledge and skills used to teach expository writing. When marking action and decision steps in the spreadsheet, actions that were not contributed by one or more SMEs were given a "0". The total number of action and decision steps omitted was added and divided by the total number of cumulative action and decision steps for all SME's in the gold standard protocol. This produced a percentage of knowledge omissions for action steps, decision steps, and the total of both groups. Table 6 and Figure 4 show the resulting data.

SME D was included in this data set. Although unable to participate in an in-depth interview, SME D did contribute to the amount of decision and action steps

captured in the gold standard protocol. By agreeing with the action and decision steps contained in the PGSP, SME D became aligned to those choices of the other three SMEs. This reduced the amount of omissions by SME D to around 1% or less for action steps and for total action and decision steps.

Table 6

Total Action and Decision Steps, or Expert Knowledge, Omissions by SME when Compared to the Gold Standard Protocol

	Steps Omitted					
	Action Steps		Decision Steps		Total Action and Decision Steps	
	Omitted	%	Omitted	%	Omitted	%
SME A	181	64.41	24	46.15	205	61.56
SME B	149	53.02	34	65.38	183	54.95
SME C	158	56.23	28	53.85	186	55.86
SME D	3	1.07	0	0.00	3	0.90
Mean Omissions	122.75	43.68	21.5	41.35	144.25	43.32
Range	202		34		202	
SD	74.96		30.45		77.12	

Note: Total non-repeating decision and action steps from CTA process represented in the gold standard protocol: decisions steps- 52; action steps-281; action and decision steps-333.

All four SMEs omitted an average of 144.25 (SD $\pm$ 77.12) total action and decision steps, a percentage of 43.32%, as shown in Table 6. The range among the first 3 SMEs was only 6.61% or 22 steps. The amount of total steps omitted by the first 3 SMEs was relatively equal. In analyzing actions steps, all four SMEs had omitted an average of 122.75 action steps (SD $\pm$ 74.96), with SME B and SME C omitted close to the same amount with a difference of only 9 action steps. SME A omitted 32 more steps than SME

B suggesting that SME B and SME C's knowledge base or instructional design might be different than SME A. In terms of decision steps, all four SMEs omitted an average of 21.5 (SD ± 30.45) decision steps.

All three SMEs who participated in the in-depth interviews had a difference of 10 steps between the SME with the highest and the SME with the lowest numbers. With percentages for the first 3 SME's in the 50%-60% range, this confirms Chao and Salvendy's (1994) findings that experts omit up to 70% of recalled knowledge and skills.

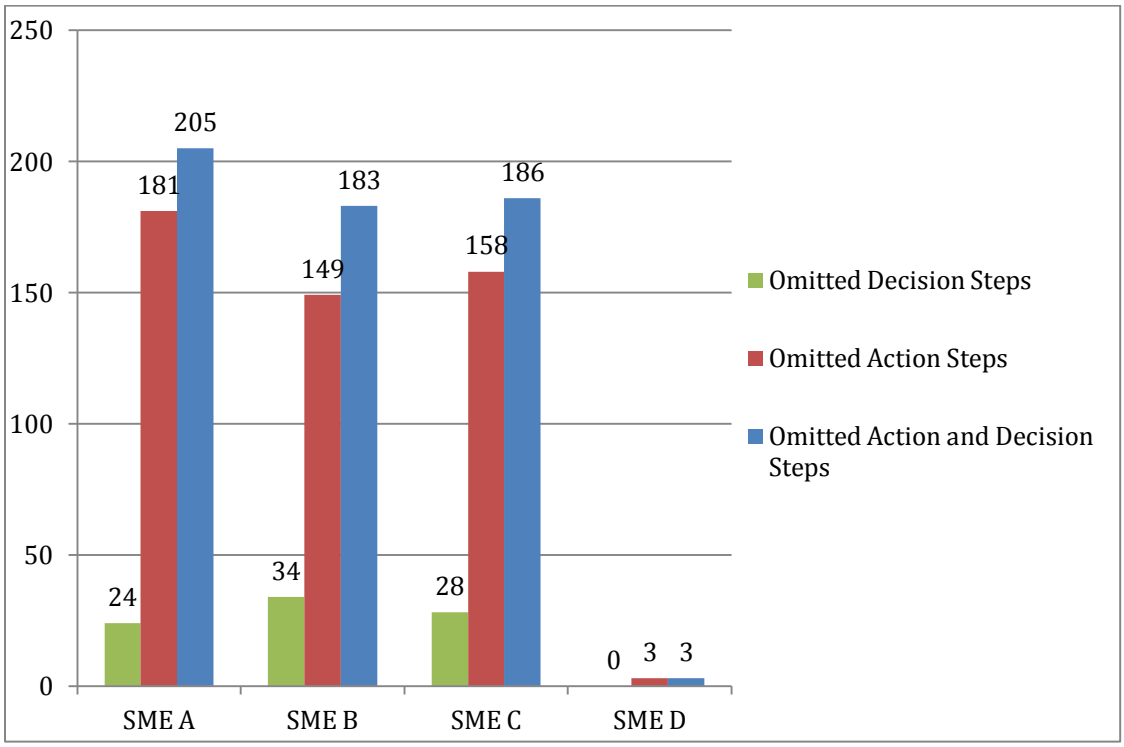

Figure 4. Total SME Knowledge Omissions When Compared to the Gold Standard Protocol. Total non-repeating decision and action steps from CTA process represented in the gold standard protocol: decisions steps- 52; action steps-281; action and decision steps-333.

Question 3

Which method of CTA, 1i+3r incremental or the 3i+3r individual, is more efficient at capturing the expertise of writing experts?

Question three sought to determine overall efficiency and effectiveness of the 3i + 3r individual CTA method compared to the 1i + 3r incremental CTA method (Lim, 2015). Efficiency in this study is defined by determining which method described in Chapter Three is more efficient in terms of time and costs to complete the analysis. The following results present the following comparisons between both methods looking at time, cost, and expert knowledge elicitation.

Total time. The total amount of time spent by each researcher on this study and the concurrent study included conducting two rounds of CTA interviews with four SME. This was done to determine which CTA method is more efficient. Table 7 lists this data of the amount of hours and minutes spent by each researcher to conduct their particular method of CTA.

Table 7

Comparison of Total Time spent doing the 1i+3r Incremental Method and the 3i+3r Individual Method of CTA

Time Spent Conducting SME Interviews	
1i+3r Incremental	09h 03min
3i+3r Individual	11h 46min
Difference	02h 43min

The results above show that the 1i+3r incremental method is more time efficient than the 3i+3r individual method. While the interviews using the 1i+3r incremental method took a total of 9 hours and 3 minutes, the interviews using the 3i+3r individual method lasted a total of 11 hours and 46 minutes. The results indicate a difference of 2 hours and 43 minutes favoring the 1i+3r incremental method.

Total cost. The costs involved in performing these CTA studies were spent on transcribing audio recordings of the interviews. Both studies used the same transcription service to transcribe the 1st round interviews with their first three SMEs. The transcription service charged $1 an minute for each recording. Table 8 lists the total costs as well as the costs incurred by both research studies.

Table 8

Comparison of Total Cost doing the 1i+3r Incremental Method and the 3i+3r Individual Method of CTA

First-Round Interviews	1i+3r Incremental	3i+3r Individual	Difference
SME A/1	$133.00	$106.25	$26.75
SME B/2	$92.00	$205.00	$113.00
SME C/3	$89.00	$163.75	$74.75
Total Costs	$314.00	$475.00	$161.00

Note: The researcher of the 1i+3r CTA method (Lim, 2015) chose to be more thorough and decided to transcribe and code interviews for SME B and C even though those steps are typically excluded during the 1i+3r incremental method.

As demonstrated, the 1i+3r incremental CTA method was more cost effective than was the 3i+3r individual CTA method. The total costs to transcribe the audio recordings for SMEs A, B, and C using the 3i + 3r CTA method was $475.00 while the costs for the researcher doing the 1i +3r incremental approach spent $314.00 for a

difference of $161.00. The 1i + 3r incremental CTA study found its initial cost to transcribe the audio recording for SME A was $133.00 whereas the researcher using the 3i + 3r method spent $106.25 on the transcript for SME A. However, the 1i+3r study spent less on the next two interviews ($92.00 and $89.00) than did the researcher using the 3i+3r individual approach ($205.00 and $163.75).

Knowledge elicitation. The total number of action and decision steps from the 1i+3r incremental CTA method and the 3i+3r individual CTA method were compared to find out which knowledge elicitation method is more efficient. Table 9 provides a comparison of total action and decision steps generated from the 1i+3r incremental and the 3i+3r individual method GSPs.

Table 9
Comparison of Overall Action and Decision Steps from 3i+3r Independent Method and 1i+3r Incremental Method Gold Standard Protocols

Gold Standard Protocol	Total Action and Decision Steps	Action Steps	Decision Steps
1i+3r Incremental	210	159	51
3i+3r Independent	333	281	52
Difference	123	122	1
% Difference	45.30%	55.45%	1.94%

Comparing the two knowledge elicitation methods reveals that the 3i+3r individual method captured a greater total of action and decision steps than the 1i+3r incremental method as shown in Table 9. Subject matter experts recalled 210 non-repeating action and decision steps with the 1i+3r incremental method and 333 non-repeating action and decision steps with the 3i+3r individual method. The 3i+3r method elicited 123 more action and decision steps with a difference of 45.30%. A closer look

reveals that the 3i+3r individual method captured more action steps with 281 steps, compared to 159 action steps captured by the 1i+3r incremental method. The 3i+3r individual method captured a total of 122 more action steps, a difference of 55.45%. However, the number of decision steps was nearly identical between the 1i+3r incremental and the 3i+3r individual methods. The 3i+3r individual method captured 52 decision steps, while the 1i+3r incremental method captured 51 decision steps. The 3i+3r individual method captured only 1 more decision step for a difference of 1.94%.

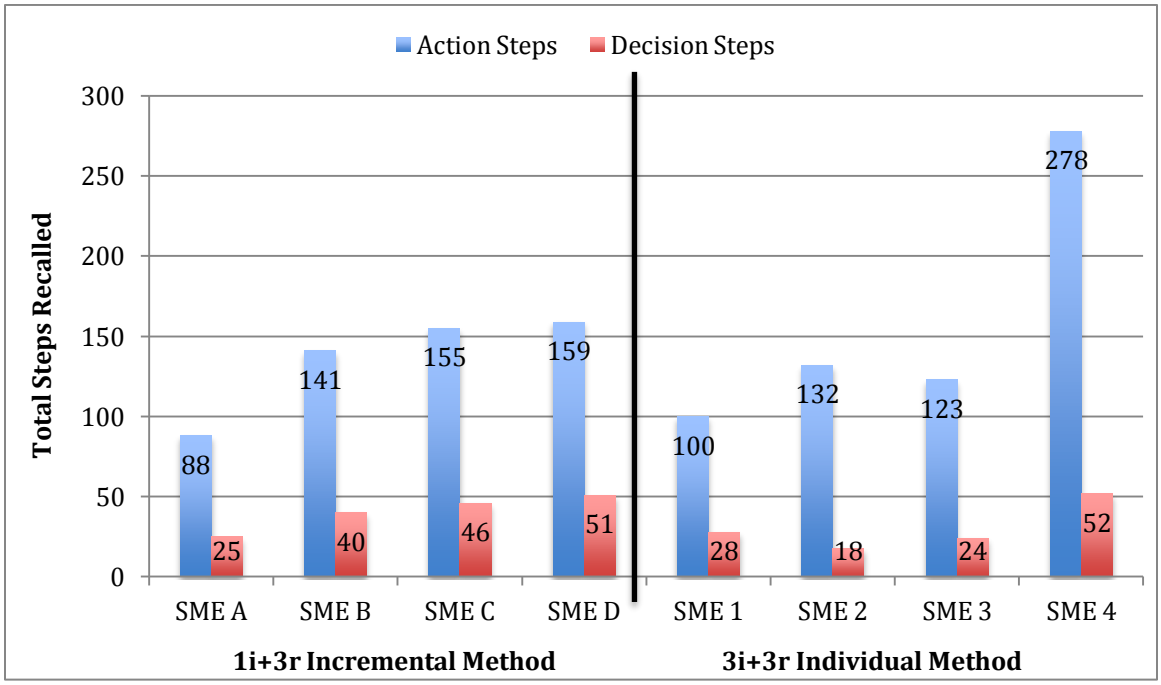

Figure 5. Total Expert Knowledge Recall for the 1i+3r Incremental Method and 3i+3r Individual Method

Expert contribution of action and decision steps. Figure 5 shows action and decision steps recalled by each SME for the two knowledge elicitation methods.

No matter the method used, SMEs in both studies recalled more action steps than decision steps. SMEs interviewed with the 3i+3r individual method recalled a total of 363 action steps and 70 decision steps for a grand total of 433 action and decision steps.

Altogether, the SMEs reported a total of 83.83% action steps and 16.17% decision steps under the 3i+3r individual method. SME 1 recalled a total of 128 steps, of which 100 were action steps (i.e. 78.13%) and 28 were decision steps (i.e. 21.87%), and was able to recall 56.26% more action than decision steps. SME 2 recalled a total of 150 steps, of which 132 were action steps (i.e. 88%) and 18 were decision steps (i.e.12%), and was able to recall 76% more action than decision steps. SME 3 recalled a total of 147 steps, of which 123 were action steps (i.e. 83.67%) and 24 were decision steps (i.e. 16.33%), and was able to recall 67.34% more action than decision steps. While verifying the PGSP, SME 4 added 11 new steps, all of which were action steps.

Likewise, SMEs who were interviewed using the 1i+3r incremental method (Lim, 2015) recalled a total of 543 action steps and 162 decision steps for a grand total of 705 action and decision steps. All of the SMEs interviewed using the 1i+3r incremental method recalled approximately 3 times more action than decision steps with SMEs recalling 77.02% of action steps and 22.98% of decision steps. After two rounds of 1i+3r Incremental CTA (Lim, 2015) interviews, SME A recalled a total of 113 steps, 88 of which were action steps (i.e. 77.88%) and 25 were decision steps (i.e. 22.12%), and recalled 55.76% more action than decision steps. SME B not only agreed with the 113 steps of SME A's protocol, but also added 68 new action and decision steps, for an incremental contribution of 181 steps. More specifically, SME B contributed 141 action steps (i.e. 77.90%) and 40 decision steps (i.e. 22.10%), which comes to a 55.80% difference. After taking the protocol to SME C, she confirmed the 181 steps that SME A and B contributed and was also able to add 20 new action and decision steps of her own for a total incremental contribution of 201 steps. More specifically, SME C contributed

155 action steps (i.e. 77.11%) and 46 decision steps (i.e. 22.89%), which results in a 54.22% difference. The 1i+3r incremental PGSP (Lim, 2015) that had been created by SMEs A, B, and C was then taken to a fourth expert, SME D, for verification. While reviewing the PGSP, SME D not only verified the 201 action and decision steps SMEs A, B, and C contributed, but also identified some omissions and added 9 new action and decision steps, for an incremental total of 210 steps. More specifically, SME D was able to contribute 159 action steps (i.e. 75.71%) and 51 decision steps (i.e. 24.29%), a difference of 51.42%.

3i+3r individual method analysis. Analysis shows the 3i+3r individual method captured a total of 281 non-repeating action steps and 52 non-repeating decision steps from SMEs 1 through 4. Compared to the 3i+3r independent GSP, SME 1 recalled 35.59% of action steps and 53.85% of decision steps. SME 2 recalled 46.98% of action steps and 34.62% of decision steps, and SME 3 recalled 43.77% of action steps and 46.15% of decision steps. SME 4's additions contributed 2.85% of action steps.

1i+3r incremental method analysis. After further analysis of the 1i+3r incremental method, a total of 159 non-repeating action steps and 51 non-repeating decision steps from SMEs A through D were captured. SME A recalled 55.35% of action steps and 49.02% of decision steps as compared to the 1i+3r incremental method GSP. Including the steps in agreement with SME A's protocol, SME B contributed 88.68% of action steps and 78.43% of decision steps. Additionally, SME C contributed 97.48% of action steps and 90.20% of decision steps including the steps in agreement with SME B's incremental protocol. SME D contributed 100% of action and decision steps.

Summary

The results of the data collected created a gold standard protocol of the action and decision step to teach expository writing to eleventh grade students. In discussing the 3i+3r individual CTA method, all three SME's involved in the semi-structured interviews contributed considerably more action than decision steps. Most of these steps were captured in the first round of interviews while very few action or decision steps were captured in the second round of interviews. SME D verified the preliminary Gold Standard Protocol, agreeing with the majority of action and decision steps while adding only 8 action steps to the protocol as a whole. Expert omissions percentages for the first 3 SME's fell in the 50%-60% range, confirming Chao and Salvendy's (1994) findings that experts omit up to 70% of recalled knowledge and skills. In comparing alignment between SMEs, the protocol was partially aligned with two SMEs agreeing to approximately 78% of the action and decision steps. There was only 11.41% of the action and decision steps where three SMEs agreed and only 9.31% where all four SMEs agreed on action and decision steps.

In comparing the 3i+3r individual method and the 1i+3r incremental method (Lim, 2015) for efficiency, the 1i+3r incremental method appears to use less time for interviews and transcription. It was also less costly to implement than was the 3i+3r individual method. In terms of effectiveness, the results were inconclusive. The 3i+3r individual method elicited many more action steps than the 1i+3r incremental method, but only one more decision step.

CHAPTER 5: DISCUSSION

Overview of Study

One of the purposes of this study was to capture the knowledge and skills of expert eleventh-grade teachers of expository writing in the form of a gold standard protocol containing the action and decision steps used by these experts when providing expository writing instruction. Researchers have found that experts are able to perform complex tasks within their domain of expertise with automaticity. But when these experts share the knowledge and skills used to conduct complex tasks, they often omit up to 70% of this critical information needed by novices to replicate these same tasks (Clark, 2014, Clark, et al., 2008; Clark & Feldon, 2006).

To elicit this information, CTA was the method used because of its ability to capture, analyze, and organize the explicit and implicit knowledge experts use to perform complex tasks (Chipman, 2000; Clark, et al., 2008). CTA has been used across various domains including medicine, computer software design, and the military (Clark, 2014). The use of CTA in the domain of K-12 education is more recent and the amount of research is sparse. Thus, the purpose of this study was to elicit the knowledge and skills of expert expository writing instructors and thereby adding the existing research on the use of CTA.

The second purpose of the study was to compare two methods of conducting CTA. Two studies have attempted to answer the question regarding which method, the 3i+3r individual method and the 1i+3r incremental (Lim, 2015) method is more effective. Flynn (2012) determined that the 1i+3r incremental method elicited more decision steps in less time with less cost than did the 3i+3r individual method. Zepeda-McZeal (2014) found

the 3i+3r individual method was more effective at capturing the total number of action and decision steps than did the 1i+3r incremental method but did not address cost or time savings. This study, along with a concurrent study (Lim, 2015), sought to replicate facets of the previous studies (Flynn, 2012; Zepeda-McZeal, 2014) with the hope of determining which of these two methods is more efficient in terms of knowledge elicitation, cost, and time savings.

A desired outcome of CTA is to capture expert knowledge and skills so they can be used in instruction design and professional development (PD) training (Tjiam, Schout, Hendrix, Scherpbier,Witjes, & Van Merriënboer, 2012). Means and Gott (1988) found in their study that five years of work experience can be condensed into 50 hours of CTA-based training. Clark (2014) reports that when CTA methods are applied to training, students learn about 30% more than with other task analysis techniques. When PARI-type CTA methods are used, gains in learning increase to 45%. This study, then, seeks to inform future professional development (PD) and pre-service teacher preparation programs in developing effective training for teachers of expository writing.

The remaining sections discuss the process of conducting CTA with expert teachers in the context of prior CTA studies, followed by results of the study, study limitations, implications, and areas for future research.

Process of Conducting Cognitive Task Analysis

Selection of Experts

Chao and Salvendy (1994) determined that knowledge acquisition is best optimized in terms of cost-benefit when three experts are used. Bartholio (2010) and Crispen (2010) sought replicate the aforementioned study above and found that three to

four experts were optimal in capturing the knowledge necessary for task completion. In this study and the concurrent study (Lim, 2015), eight expert English-Language Arts high school teachers from within a school district in Southern California district were interviewed. Three of the SMEs were randomly selected and interviewed using the 3i+3r individual method and the 3 were interviewed using the 3i+3r incremental method. Each method then used a separate fourth SME to verify the gold standard protocol.

The experts were selected using the criteria mentioned in Chapter Three. When trying to find expert teachers within a public school system, one of the easier criteria to meet is the requirement that an expert have 5-10 years experience in the classroom. Each subject matter expert must be at the top of their profession with a minimum of five, preferably ten, years of consistent and successful on-the-job experience as measured by objective, industry standard measurements (Ericsson, Krampe, & Tesch-Romer, 1993). The experts randomly chosen for both the present studies had at a minimum seven years experience teaching expository writing up to a maximum of twenty years experience. Another easy criterion to determine expertise is to meet is the level of education. The SME's chosen for both this study and the concurrent study (Lim, 2015) all had Master's degrees or higher in the field of education or writing. What becomes harder to measure is the quality of professional development (PD) experienced by the SMEs chosen and by teachers in general. Did the professional development actually teach these experts what it purported to teach? And was the professional development actually used in classroom instruction? Porter (2000) and colleagues found that professional development for teachers was more likely to be used in the classroom if it concentrated on higher-order teaching strategies rather than traditional workshop or conference professional

development. They also found that professional development (PD) varies from school year to school year and from school to school. Given that the SMEs used in both this study and the partner study (Lim, 2015) work at different schools, determining the quality and consistency of the professional development (PD) experienced by the teachers would be problematic. The experts chosen began their careers at varying dates and at varying schools. Plus, a teacher with 10 years or more experience may not remember or have records of the professional development (PD) attending throughout their employment. Asking expert teachers to list the professional development (PD) over a career spanning a decade or two might be problematic to confirm.

The use of objective, industry standard data for measuring teacher performance is also problematic. Schools have been engaged in some form of standardized testing for many years (Au, 2011). This emphasis on testing and accountability has its pros and cons and is a discussion for another venue. However, finding individual data on teachers is next to impossible in most school districts. Concerns over privacy and validity of test results have made measuring individual teachers difficult. As such, this study and the concurrent study were compelled to take the recommendations of peers within the district and from district administrators.

The Assistant Superintendent of the particular Southern California school district was contacted and provided descriptions of the research studies and a list of potential SMEs. The Assistant Superintendent approved the study and the list of potential SMEs, and sought further approval from a fellow Assistant Superintendent in charge of approving outside research studies within the district, the school board, and the principals of the school sites where the SMEs worked. Thus, it was necessary for the researchers in

this study and the partner study (Lim, 2015) to base choosing SMEs in expository writing from not only the years spent teaching and educational attainments, but also from the recommendations of peers and district supervisors. The lack of verifiable testing data for individual teachers will be a consistent problem for future CTA analysts as they engage in knowledge elicitation in the field of public education.

Collection of Data

CTA was conducted in the following five stages: (a) collection of preliminary knowledge; (b) identification of knowledge representations; (c) application of focused knowledge elicitation methods; (d) analysis and verification of data collected; and (e) formatting of results for the intended purpose or application (Clark et al., 2008, Hammitt, 2014; Canillas, 2010; Tolano-Leveque, 2010).

This researcher researched literature in the domain of expository writing and instruction to gather preliminary knowledge and a sequence of task components along with the types of knowledge needed to perform the task. A fellow researcher with experience in teaching expository writing was also a source of information and preliminary knowledge. CTA was used to investigate these knowledge representations and any additional skills that surfaced during interviews with subject matter experts.

Data collection ensued using the 3i+3r individual CTA method. This method has been shown effective in capturing expert knowledge to inform instructional design and the development of instructional materials (Clark, et al., 2008, Zepeda-McZeal, 2014, Hammitt, 2014). One initial interview was held with each of three SMEs, SME A, SME B, and SME C. The interviews lasted from 1 hour 25 minutes to 2 hours 44 minutes. The interviews occurred at or near the conclusion of the academic year 2013-2014. This led

all three experts to consider their actions and decisions over the entire school year as they taught expository writing. Follow-up interviews were held approximately 3 months later once preliminary protocols had been created from each interview. These interviews lasted much less time, from 35 minutes to 1 hour 10 minutes. These interviews were held shortly after the beginning of the 2014-2015 school year. Each SME was given the opportunity to review their protocol and make any suggestions or corrections they felt were needed. As the data showed, very few changes were made to the protocols.

Canillas (2010) suggests that a separate group of SME's might be used to review preliminary protocols created from the interviews of an initial group of SMEs. She noted that her SMEs had difficulty committing the time and sustained mental effort needed to review their initial protocols during a follow-up interview. Hammitt (2014) found the opposite effect when interviewing public school principals. His SMEs dedicated over 2 hours of time to both the initial interview and the follow-up interviews with full commitment to the CTA process.

Importance of Context

In the present study, each SME did not give the same amount of time in the follow-up interview as that given in the initial interview which occurred 3 months earlier. Each SME reviewed their own protocol and was asked if anything needed to be reviewed, removed, or refined. All three SMEs agreed with the protocol with only minor suggestions. The shorter follow-up interviews could be the result of protocols that adequately captured the actions and decision steps given in each interview. An alternative view is that the SME's were in a different frame of mind since they had begun a new school year with a new group of students. Their frame of mind was no longer engaged in

reviewing the recently past school year but was now forward focused into the current school year. This could show the importance of context as it influences the knowledge acquisition and experience of these SMEs. Lave (1993) argues that learning is not independent of experience. Learning is not problematic but what is learned is "complexly problematic" (Lave, 1993, pg. 203). Acquisition of knowledge is not simply taking in knowledge, but assuming all things fit in categories requiring reconceptualization as a cultural or social product. Lave (1993) asserts that engaging in learning is an act extending beyond the present situation.

These findings might suggest the mental state of SMEs is influenced by the place and context where the teacher is in within the place and time of the school year, leading to the conclusion that the specific time in which interviews are completed and the time span between interviews may affect knowledge elicitation during the CTA interviews. In the current study, the knowledge elicitation responses of the SMEs being interviewed were based on prior experience and professional knowledge. But these responses were also based on the current school year as it was ending. It is likely that the images these experts created as they were asked to reflect on their teaching of expository writing was based on the students they presently had in class coupled with the assignments and expectations that come at the end of a school year (Feldon, 2007a). These external contextual situations might have had heavy meaning at that point of the school year. However, when the second interviews occurred, the teachers were in the midst of beginning a new school year with new students. The curriculum was at a different point of progression as were the expectations these teachers had for their new group of students.

The contexts, so important in the first interview, were no longer in play. These SMEs were now in a different context, with different students and different situations.

To alleviate this possible situation, the semi-structured interviews should be completed as soon as possible to allow teachers to keep the contextual realities of their current classroom fresh in their minds. Of course, a fruitful line of interviewing might including performing the first interview close to the beginning of the school year and holding the second review interview later in the school year to capture new action and decision steps. This might allow the gold standard protocol to pick up the natural progression of writing instruction or any other curricular subject as it is taught throughout a school year.

Cognitive Load Theory

Another alternative explanation for the lack of addition action and decision steps in the second round of interviews may lie in the cognitive demands of teaching. Cognitive Load Theory looks at the way learners absorb and structure knowledge for later recall. An important facet of this theory is our cognitive structure based on working and long-term memory (Sweller, Ayres, & Kalyuga, 2011). Working memory load is determined by element interaction as it is influenced by the further interaction of the contents of our long-term memory and the material being taught. Too many interacting elements create a heavy working memory load unless schemas or scaffolding are introduced to help hold this information in long-term memory.

When SMEs are asked to uncover unconscious procedural knowledge, a heavy cognitive load is being placed upon their working and long-term memory (Sweller, 1988). Dual process theory suggests that information processing occurs on parallel pathways at

the same time (Feldon, 2007a). As SMEs work through the slower conscious processing of perceptual knowledge, they also process quickly through unconscious thought. When conflicts occur, performance slows. SMEs then compensate by modifying the quantity of information to be processed by the use of reasoning strategies. Teachers are unable to consciously consider all the complexity of problems within the classroom. So they begin to simplify the situation and act rationally based on that simplified scenario. Feldon (2007a) suggests that as teachers build expertise, they build elaborate schemas to handle the complexity of the classroom.

In the present study, the SMEs interviewed had given their elicited knowledge in the form of action and decision steps during the first interview. When presented with the protocol, the SMEs may have used the protocol's steps and procedures as a form of elaborate schema, thereby reducing their cognitive load as they reviewed their individual protocols. Because protocols are based on the responses of the SME who reported the declarative and procedural knowledge contained therein, experts may automatically use familiar words and phrases as cues that trigger prior knowledge and allow the SME to find agreement with the protocol's contents. During the second round of interviews, SME A, B, and C all made similar affirmative comments like "yep", and "yes", and "I remember saying that," as they reviewed their protocols. Future research may focus on changing the phrasing of the protocol to reduce this triggering of prior knowledge.

Automaticity and Conscious Recall

In each initial interview in the 3i+3r individual method, each SME began by identifying the main procedures of expository writing instruction. Once completed, each SME was prompted to provide detailed action and decision steps within each main

procedure. During the interviews, each SME recalled different iterations of expository writing instruction as they thought about the actions and decisions made during different times of the school year. While proceeding through the interview, each SME noted they had neglected a procedure or action that resulted in the change of the main procedures. It seems that the deep and probing questions indicative of CTA help experts bring their unconscious, automated knowledge to a more conscious level.

Discussion of Findings

No formal hypotheses were developed for this research study. The study, however, was guided by 3 research questions.

Question 1

What are the action and decision steps that expert teachers recall when they describe how they provide expository writing instruction to their eleventh-grade students?

Four SMEs were interviewed using the 3i+3r individual method to capture the total action and decision steps recalled to provide expository writing instruction to eleventh-grade students. This method elicited a total of 333 action and decision steps, of which 281 were action steps and 52 were decision steps.

Action steps versus decision steps. The results of this study and the concurrent study (Lim, 2013) elicited far more action than decision steps. Flynn (2010) argued that the 1i+3r incremental method was more conducive to eliciting more decision steps than was the 3i+3r method. The concurrent study (Lim, 2013) does not confirm this finding.

Research on expertise suggests that experts who have developed high levels of automaticity are able to recall action steps much more easily than automated decision

steps based on procedural knowledge (Clark, 2014, Clark & Estes, 1996, Ericsson, 2004). Clark (2014) found that healthcare experts could recall more action steps because they place themselves "in the moment," allowing them to recall more action steps than decision steps. The difference between action steps and decision steps of the SMEs interviewed for this study bear this research out.

One possible reason decision steps were tough to elicit by is the nature of the task being investigated. Expository writing is a multi-faceted task with multiple steps and a plethora of various strategies that can be used to teach this important skill. As the interviews in both studies proceeded, it appeared that the SMEs applied great efforts to cognitively process the unconscious steps they perform as they teach this subject. However, once the SMEs shared the main procedures they used to teach, they were then asked to add the sub-tasks subsumed under each main procedure and the decisions that accompany them. By this time, the interviews were well over an hour and the SMEs appeared to be losing focus on the subject at hand. Soon, as Feldon (2007a) noted, the SMEs began to simplify their answers and provide less decisions steps and more action steps. The vast nature of expository writing may have overtaxed the cognitive load of the SMEs, thereby reducing focus and motivation on the task at hand. It would be prudent in future students to break up the CTA analysis of such large learning tasks, such as expository writing, into more manageable chunks.

Number of action and decision steps. The concurrent study (Lim, 2015) found 210 action and decision steps compared to 333 in the present study. What might account for the difference in total action and decision steps? Lim (2015) and Zepeda-McZeal (2014) suggest one reason is that the experts interviewed in the 1i+3r incremental method

were influenced unconsciously by the protocol they were asked to review. In the 1i+3r incremental method SME A was asked through a semi-structured interview to report the knowledge and skills used to teach expository writing. Once this protocol was created by the knowledge analyst and verified again by SME A, the protocol was given to SME B and SME C for addition discussion and verification. This non-conscious, cognitive process where memory is prompted by external cues is called priming (Tulving & Schacter, 1990). Lim (2015) reports that, as an example, SME B in the 1i+3r incremental method added 68 more action and decision steps to SME A's protocol, and SME C added only 20 more action and decision steps to SME B's protocol. Lim (2015) suggests a possible reason for this is SME C accepted the assumption that the protocol was correct because she had been told that two other SMEs had already approved it to this point.

Lim (2015) also suggests that SME B and SME C in his study could have been influenced by groupthink. Irving Janis, in Aronson (2003) defines groupthink as "the mode of thinking that persons engage in when concurrence seeking becomes so dominant in a cohesive in-group that it tends to override realistic appraisal of alternative courses of action" (p. 15). Under the pressure of conforming within a group, individuals begin to doubt their own reservations and do not contribute dissenting opinions (Aronson, 2003). One weakness with this possibility is that while SMEs in the 1i+3r incremental CTA method were aware that other experts had reviewed the protocol created from the previous expert, they had little or no direct opportunity to pressure one another into a conforming state of thought.

In the present 3i+3r individual study, none of the SMEs had knowledge of one another through this study and were not given any of the interview material from the

other experts. SME B did mention during the initial interview the name of SME C as an example of a teacher using a learning strategy SME B was interested in trying out within the classroom. This lends credence to the peer recognition as one criterion when selecting experts for CTA study (Clark, 2014, Clark, et al., 2008, Hammitt, 2014).

Teacher choice in the use of pedagogy strategies. Another possible reason for the larger amount of actions steps elicited in the 3i+3r individual method is the inclusion by the SMEs of various teaching strategies used by each expert in their classroom. Spreadsheet analysis showed that there was on 9.31% complete alignment between all SMEs and 11.41% partial alignment. Upon closer examination of the gold standard protocols, the 3i+3r individual method elicited more actions tied to discrete pedagogical strategies often used by one expert alone and not the other two experts. CTA looks to capture the knowledge and skills of experts in their domain. In the field of education, there are often a multitude of strategies that teachers acquire and use to great effect in the classroom. This begs the question of whether teachers should be compelled to adopt common strategies within schools or among grade levels. Does this ensure student success in acquiring academic knowledge? The 3i+3r individual method suggest this might not be the case. Galbraith & Rijlaarsdam (1999) suggest that different pedagogical strategies may apply differently to students and teachers alike. They suggest that the choice of strategy is not as important as teaching writing as a process with goals set for specific communicative purposes (Chandrasegaran, 2013). Lampert (1985) argues the assumption that there are often conflicting problems and concerns within one class. The teacher is tasked with solving these pedagogical problems for which there are many different solutions that may well be right. However, the teacher cannot base all

pedagogical choices upon theory but upon choosing to act upon a particular choice and living with the consequences. Thus, it is the context of the class and the participants, students and teacher alike, that determine what strategies might be used. This leads to the conclusion that the main procedures noted in the gold standard protocol should offer teachers a viable blueprint that, if followed, will help a novice teacher teach more effectively. The strategies contained therein may be looked upon as suggested activities. The different teaching strategies used by one or more SMEs contained in this protocol alone suggest this course of action has led to success in their classrooms.

Question 2

What percentage of action and/or decision steps, when compared to a gold standard do expert teachers omit when they describe how they provide expository writing instruction to their eleventh-grade students?

To answer this research question, the gold standard protocol was compared to each SME's individual protocol to determine omissions of expert knowledge derived from omission of actions and decisions steps for the task of expository writing instruction. Research shows that when experts report the knowledge and skills used to perform a complex task, they unintentionally omit up to 70% of critical information novices need to perform a task successfully (Clark & Feldon, 2006, Feldon, 2004). The average omission SMEs A, B, and C was 57.46%. This confirms the 70% omission rule. The average action step omissions for SMEs A, B, and C were 57.89% and the average decision step omissions for all SMEs were 55.13%.

In the concurrent study (Lim, 2015), total omission steps for SME A were 71 action steps and 26 decision steps for a total of 97 steps. Because the protocol created

from the expert elicitation of SME A, SME B omitted 11 action steps and 18 decision steps for a total of 29 steps. SME C omitted 4 action steps and 5 decision steps for a total of 9 steps. Finally, SME D verified the preliminary gold standard protocol and omitted zero action or decision steps.

Looking at SME A in the 1i+3r incremental method, omissions totaled 46.19% compared to the 1i+3r incremental GSP. While the average omissions in the 3i+3r individual method was 144 action and decision steps, the average percentage was 43.32% which is roughly equivalent to the omissions of SME A in the 1i+3r incremental method. As SME B and SME C reviewed the 1i+3r incremental protocol created from SME A's interviews, their own knowledge elicitation becomes focused on the protocol and with what happens in their own classrooms concurrently. In the 3i+3r individual method, there was no instance where the SMEs were influenced by the action and decision steps of other SMEs. The SME's in the 3i+3r individual method had little opportunity to consider actions and decisions independent of what happens in their own classrooms. It appears possible that more action and decision steps are elicited with the 3i+3r individual method at the expense of more steps omitted by each SME.

Question 3

Which method of CTA, 1i+3r incremental or the 3i+3r individual, is more efficient at capturing the instructional expertise of SMEs?

Efficiency. The final purpose of this study was to replicate facets of Flynn's (2012) and Zepeda-McZeal's (2014) dissertations to determine which CTA method, the 3i+3r individual or the 1i+3r incremental, is more efficient. Flynn (2012) found in her research that the 1i+3r incremental method was more efficient that the 3i+3r individual

method because of its capacity to capture more decision steps in a shorter amount of time and for less cost. Zepeda-McZeal (2014) found that the 3i+3r individual method proved more effective at capturing both critical action and decision steps than the 1i+3r incremental method. The results from this study and a concurrent study (Lim, 2015) compared actions and decision steps and found the results inconclusive as to which is more efficient. However, the results from both current studies warrant further analysis and discussion.

Criteria to measure effectiveness. Flynn (2012) suggests a list of criteria to measure the effectiveness of the results of a CTA. The first is a cost-effectiveness measurement which looks at various CTA methods to determine which one gets a quality job completed in the most cost effective way. Another criterion is to measure the amount of resources used to complete a CTA. Hoffman (1987) suggests several qualitative and quantitative measurements to determine if a CTA method outcome, such as interviews or protocols, is effective. Hoffman (1987) also suggests method efficiency as one measurement used to quantify the effectiveness of a CTA interview is to count the total number of propositions captured in a unit of time. He uses propositions per minute as his metric. These propositions include both declarative and procedural knowledge. Flynn (2012) also considered this metric as a method to measure effectiveness.

Using Flynn's (2012) cost criterion, costs were analyzed by comparing the amount of money spent on transcribing the interviews for each SME. The transcribing for the 3i+3r individual method totaled $475.00 while the cost of transcribing the 1i+3r incremental method was $314.00. In this case, the 1i+3r incremental method was slightly more effective in terms of money saved. Using Flynn's (2012) time criterion, the only

quantifiable time available for analysis was the time spent in interviewing each SME. The time spent interviewing SMEs for the 3i+3r individual method was 11 hours 46 minutes. The time spent on interviewing SMEs for the 1i+3r incremental method was 9 hours 3 minutes for a savings of 2 hours 43 minutes. Again, the 1i+3r incremental method proves to be more time efficient as well. A critique of using money and time to measure CTA effectiveness is the possible decrease in quality when seeking to trim costs and time.

Using Hoffman's (1987) method efficiency metric of counting propositions in a specified unit of time as a third criterion, Flynn (2012) counted only decision steps in her study. McZeal (2014) counted both action and decisions steps which is replicated here. Neither Flynn (2012) nor Zepeda-McZeal (2014) figured the amount of propositions per minute. In the present study, the 1i+3r incremental method captured 210 action and decision steps total in 9 hours 3 minutes (543 minutes) of interview time for a average of .38 propositions per minute, while the 3i+3r individual method captured 333 action and decisions steps in 11 hours 46 minutes (706 minutes) of interview time for an average of .47 propositions per minute. This comparison results in 3i+3r individual having 123 more total action and decision steps than the 1i+3r incremental method, and more per minute of interview time with a difference of .09 propositions (declarative or procedural knowledge) per minute.

A possible reason for the large number of action and decision steps in the 3i+3r individual method as compared to the 1i+3r incremental method could be the nature of the task being investigated. Hoffman (1987) suggests several quantitative comparative measurements to perform analysis of a task. Task brevity, task flexibility, task simplicity and method efficiency all relate to the elicitation of knowledge from experts by the

knowledge analyst. This elicitation is influenced by the task being studied. If the task is familiar and straightforward, analysis should be brief and simple. However, if there are times where a task requires flexibility because the nature of the task changes as variations occur and different sets of materials become variables in expert decision-making.

Task complexity. The studies of Flynn (2012), Zepeda-McZeal (2014), and the current and concurrent study (Lim, 2015) looked at different types of tasks. Flynn (2012) investigated the task of recruitment interviews by the Army. The nature of the task is straightforward and lasts at most an hour or two to complete. Zepeda-McZeal (2014) analyzed informational reading instruction for intermediate grade-level students with mild to moderate learning disabilities. This task would take a number of weeks to complete and would include a group of students with various needs and abilities. The task studied in this study and concurrent study (Lim, 2015) is analyzing expository writing instruction to eleventh-grade students. Much like Zepeda-McZeal, this task is much longer in duration and contains many variables based on topic and classroom make-up. Hoffman (1987) argues that straightforward CTA investigations with tasks of shorter duration should result in more action and decision steps elicited than would be the case in CTAs analyzing tasks of longer duration and more complexity.

The duration and complexity of the task may also result in SMEs experiencing greater cognitive overload (Sweller, 1988). In studying problem-solving using a means-end analysis, Sweller (1988) noted that this analysis method may impose a heavy cognitive load. It was also noted that the cognitive mechanisms required for problem solving and for schema acquisition appear to be distinct. This suggests that cognitive load used to problem solve may not assist in schema acquisition. Thus, expertise is limited if

its development is based on problem-solving as a developmental tool. In the current study, experts are asked to report the actions and decision steps they use to teach expository writing. As they reflect back on their practice, think about the things they do, and create mental images of their performance in the classroom, Sweller's (1988) research suggests that experts would find it increasingly easier to share their conscious action steps but much more difficult to share their unconscious actions steps. The cognitive load required to bring these procedural steps to light might tax the expert's cognitive load and result in less information gathered using CTA analysis.

In this study of the 3i+3r individual method, SME's were asked to go through an in-depth interview with the knowledge analyst. The interviews lasted on average over 2 hours with the longest lasting 2 hours 42 minutes. Each expert was asked to share the main procedures they use to teach expository writing. Once this step was completed, the interview questions went into greater detail looking at each main step for the actions and decision steps that make up the sub-steps of each main procedure. These experts were asked to delve into detail on their knowledge and skills.

On the other hand, the experts who were part of the 1i+3r incremental method fared differently. SME A was engaged in an in-depth interview much like those experts in the 3i+3r individual study. But SME B and SME C were not subjected to these same in-depth interviews. The interviews in the 1i+3r incremental method averaged 1 hour 23 minutes with the longest interview with SME A lasting 2 hours 12 minutes. Comparing the amount of decision steps in both protocols showed that 35 of the 52 decision steps in the 3i+3r individual method were captured within the first four main procedures, while 37 of the 51 decision steps for the 1i+3r incremental method were elicited within the last

five main procedures of the protocol. These results suggest that the 3i+3r individual method where experts are asked to recall both action and decision steps may create a sense of cognitive overload for the SMEs. This may explain why decision steps diminish as the CTA interview moves through the main procedures. The opposite appears to be true with the 1i+3r incremental CTA method. The experts who participated in this method may have experienced less cognitive overload which frees up working memory to attend to recall of procedural knowledge. Fisk and Taylor (1991) described the idea the rational people conserve cognitive energy as a way to use ones cognitive abilities more efficiently. Cognitive misers create cognitive heuristics or shortcuts by ignoring information to reduce cognitive load, or overuse familiar information to keep from having to continue searching for more, or even accept a lesser alternative because it is close to good enough. In order to ease cognitive load, the experts participating in the 3i+3r individual method may have engaged in cognitive conservation and recalled less decisions than was possible.

Limitations

The present study produced both consistent and inconsistent results with existing CTA research studies regarding expert knowledge captured as action and decision steps, expert knowledge omissions, and the relative efficiency of the 1i+3r incremental and 3i+3r individual methods in capturing expertise. The following sections talk about the limitations of this study, such as confirmation bias, and internal and external validity.

Confirmation Bias

The researcher of this study has 17 years experience in elementary education. This experience does not include teaching expository writing at the secondary level. This

reduces the tendency of researchers to align the knowledge and skills elicited from the experts in this and the concurrent study (Lim, 2015) to their own experiences (Clark, 2014). The lack of experience and prior knowledge on the part of the researcher in this domain resulted in the need for extensive bootstrapping (Schraagen, et al., 2000). This bootstrapping resulted in the efforts of the researcher to avoid placing any preexisting experiences or expectations upon the collected data.

Internal Validity

Observations of the experts' knowledge and skills while performing this task would have ensured the internal validity of the captured data as a result of this study and the gold standard protocol created. Observations of the SMEs did not occur as part of this study or the concurrent study (Lim, 2015), and therefore the results cannot be validated at this time. Although this study did not include validating the GSP by observation, this would be an appropriate study for future research.

External Validity

External validity for the current study would require that the results be generalizable enough to transfer to other settings containing similar domain characteristics. The sample size of four SMEs, all of whom work within the same Southern California school district, limits the external validity or generalizability of the current study. Future CTA research studies in the same domain might include a larger number of experts and from multiple locations to improve external validity.

However, the nature of the present study can lend itself as a case study focusing on one particular task. Merriam (2009) argues that a case study such as this can add to the knowledge base, such as on expository writing, thus bringing about understanding that

can possibly improve practice. While external validity may be limited, the practical application of the material discussed in the study can allow the reader to transfer particular lessons to similar situations. It will be up to the reader and practitioners of expository writing instruction to determine the usefulness and applicability of this study.

Implications

Experts are often tasked with using their knowledge and skills to teach novice learners, to help create curriculum and instructional materials, and to mentor or coach these novice learners to problem-solve or perform complex tasks (Jackson, 1985). This becomes problematic when these experts have automated their knowledge and often omit up to 70% of critical information when mentoring or teaching novice learners. CTA has shown to be effective in capturing this automated knowledge and skills that are often unavailable for instant recall across a variety of domains. This study substantiates the use of CTA to capture the knowledge and skills of SMEs in completing complex tasks such as teaching expository writing at the eleventh-grade level.

Research has shown further that training and instruction informed by CTA studies can improve performance proficiency by increasing human accuracy and adaptability while also providing long-term cost savings (Clark, et al., 2008). CTA training has been shown to increase learning gains 50% with reduced training time and costs (Clark, 2011). Velmahos (2004) and colleagues determined that surgical residents may complete tasks 25% faster, learn 40% more information, and do so with up to 50% less mistakes. The implication is clear; CTA has the potential to inform teacher training and instruction to produce highly trained and skilled teachers in less time and with less cost.

Writing research has found that students struggle to successfully write expository essays (Applebee & Langer, 2009; Beck, et al., 2013; Kiuhara, et al., 2009). Additionally, researchers agree that highly-qualified teachers have a greater positive influence on student achievement than class sizes, additional financial resources, or teacher salaries (Darling-Hammond, 2000; Hanushek, 1992; McQuitty, 2012). The current study suggests that putting CTA-based instruction at the use of classroom teachers so they can replicate expertise may improve instruction and thus improve student achievement in writing expository essays.

Additionally, Common Core State Standards (CCSS) call for students to write more expository text and more writing in general in other subject areas including social studies, science, and math. Content area teachers other than English teachers will need future PD to improve instruction for their students with writing. To meet these expectations, CTA-based instruction may be the solution to providing in-service teachers and pre-service teachers, especially those in subject areas outside of English Language Arts with effective writing instruction developed from experts in the field.

Future Research

Further research in to the identification of experts, especially in the education field, may be necessary. For instance, this study used several criteria to help identify expert teachers. One criterion was consistent and successful on-the-job experience as measured by student achievement in expository writing. In this case, "success" was based on reliable, industry standard outcomes that can be validated, such as standardized test scores. However, a relevant concern, and one that this study does not address, was the multitude of variables that might influence the results of student achievement other

than the teacher. One assumption is that students enter classrooms each year with a variety of skill levels, content knowledge, motivation level, access to resources, and psychosocial support, just to name a few. With all these varied factors influencing student achievement and students writing achievement in particular, identifying an expert teacher using "success" as part of the criteria becomes much more complex.

It is also unknown whether CTA-guided instruction has been used to inform pre-service and in-service teacher training programs to date. A search for literature on this subject did not reveal any studies. Therefore, future research could involve a randomized experimental design study implementing pre-service and in-service teacher training, particularly for novice teachers, using CTA-guided instruction and traditional instructional methods to compare learning gains on expository writing instruction similar to the tasks outlined in this study. Conducting longitudinal research will also inform this body of research in determining short- and long-term learning gains in expository writing.

When considering the improvement of knowledge elicitation methods, future research is needed to compare the relative effectiveness of the 3i+3r individual and the 1i+3r incremental methods in eliciting critical declarative and procedural knowledge for complex task performance in K-12 school settings. Further research could be conducted in the domain of expository writing instruction to determine which of the two methodologies is most appropriate for complex learning tasks. The 1i+3r incremental method may be yet another methodology added to the stock of CTA methods. Additional research is needed to determine effectiveness in capturing complete and accurate knowledge representations of complex tasks in a more effectively than the 3i+3r method.

Future research may also delve deeper into the ground covered here. Using one of the main procedures noted in the protocol, research could determine more clearly and concisely the total actions and decision steps. By focusing on one procedure at a time, future knowledge analysts can increase the amount of declarative and procedural knowledge captured while reducing any possible cognitive overload on the part of the SMEs used in the study (Sweller, 1988).Future research may also analyze the optimal length of time needed to perform a complex task for a CTA study. As previously mentioned, the nature of the task can greatly influence the outcomes of doing CTA (Hoffman, 1987). If the goal is to maximize the educational benefits of instructional content generated by way of CTA, perhaps certain complex tasks are more suitable to doing a CTA based on their relative time frame.

Conclusion

The purpose of this study was to add to the existing body of CTA research. CTA has demonstrated effectiveness in capturing the declarative and procedural knowledge necessary for novice learners to attain information and skills needed to perform complex tasks in a variety of domains. Only recently have researchers attempted to apply CTA within the field of education to determine its effectiveness in this particular domain. This study had three purposes. First, it sought to describe the benefits of CTA for capturing complete descriptions of the action and decision steps experts use when providing expository writing instruction at the eleventh-grade level. Second, this study identified the omissions made by experts when recalling the action and decision steps used to teach expository writing. Finally, this research sought to determine which of the two common CTA methods, the 3i+3r individual and the 1i+3r incremental, is more effective at

capturing action and decision steps in a shorter period of time and at a lower cost. The GSP developed as a result of this study has identified both the observable and unobservable behavior a novice teacher needs to replicate expert expository writing instruction. This expertise captured within the GSP can function as a foundation for the instructional design in a teacher preparation program for pre-service teachers and for the Professional Development of in-service teachers teaching at the eleventh grade level. By replicating the expertise to inform future professional training, CTA-based instruction such as this research study can lead to significant improvement gains in student writing achievement.

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Appendix A

Cognitive Task Analysis Interview Protocol

Begin the Interview: Meet the Subject Matter Expert (SME) and explain the purpose of the interview. Ask the SME for permission to record the interview. Explain to the SME the recording will be only used to ensure that you do not miss any of the information the SME provides.

Name of task(s): Teaching expository writing

Performance Objective:
Ask*: "What is the objective of teaching expository writing? What action verb should be used?"*

Step 1:
Objective: Capture a complete list of outcomes for expository writing instruction.

A. *Ask the Subject Matter Expert (SME) to list outcomes when these tasks are complete. Ask them to make the list as complete as possible.*
B. *Ask SME how the outcomes are assessed.*

Step 2:
Objective: Provide practice exercises that are authentic to the task of teaching expository writing.

A. *Ask the SME to list all the tasks that are performed during expository writing instruction.*
B. *Ask the SME how the tasks would change when teaching expository writing among various student skill levels.*

Step 3:
Objective: Identify main steps or stages to accomplish the task

A. *Ask SME the key steps or stages required to accomplish the task.*
B. *Ask SME to arrange the list of main steps in the order they are performed, or if there is no order, from easiest to difficult.*

Step 4:
Objective: Capture a list of "step by step" actions and decisions for each task

A. Ask the SME to list the sequence of actions and decisions necessary to complete the task and/or solve the problem

Ask*: "Please describe how you accomplish this task step-by-step, so a first year teacher could perform it."*

For each step the SME gives you, ask yourself, "Is there a decision being made by the SME here?" If there is a possible decision, ask the SME.

If SME indicates that a decision must be made…

Ask*: "Please describe the most common alternatives (up to a maximum of three) that must be considered to make the decision and the criteria first year teachers should use to decide between the alternatives".*

Step 5:
Objective: Identify prior knowledge and information required to perform the task.

A. Ask SME about the prerequisite knowledge and other information required to perform the task.

1. Ask the SME about Cues and Conditions

Ask: "*For this task, what must happen before someone starts the task? What prior task, permission, order, or other initiating event must happen? Who decides?"*

2. Ask the SME about New Concepts and Processes

Ask*: "Are there any concepts or terms required of this task that may be new to the first year teacher?"*

Concepts – terms mentioned by the SME that may be new to the first year teacher
Ask for a definition and at least one example

Processes - How something works
If the first year teacher is operating equipment, or working on a team that may or may not be using equipment, ask the SME to *"Please describe how the team and/or the equipment work - in words that a first year teacher will understand. Processes usually consist of different phases and within each phase, there are different activities – think of it as a flow chart"*

Ask*: "Must first year teachers know this process to do the task?" "Will they have to use it to change the task in unexpected ways?"*
IF the answer is NO, do NOT collect information about the process.

3. Ask the SME about Equipment and Materials

Ask*: "What equipment and materials are required to succeed at this task in routine situations? Where are they located? How are they accessed?*

4. Performance Standard

Ask*: "How do we know the objective has been met? What are the criteria, such as time, efficiency, quality indicators (if any)?"*

5. Sensory experiences required for task

Ask*: "Must first year teachers see, hear, smell, feel, or taste something in order to learn any part of the task? For example, are there any parts of this task they could not perform unless they could smell something?"*

Step 6:
Objective: Identify problems that can be solved by using the procedure.

A. Ask the SME to describe at least one routine problem that the first year teacher should be able to solve if they can perform each of the tasks on the list you just made.

Ask*: "Of the task we just discussed, describe at least one routine problem that the first year teacher should be able to solve IF they learn to perform the task".*

Appendix B
Inter-rater Reliability Code Sheet for SME A

SMEA
Inter-rater Reliability Code Sheet

M. Jury — Main Coder
N. Lim — Secondary Coder

Code	Tally Total	Agree	Disagree	% Agreement (IRR)
O (Objective)	|||	|||	|	75%
C (Conditions/cues)	𝍸	𝍸		100%
M (Main Procedures)	𝍸 ||	𝍸 ||		100%
A (Action Step)	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||		100%
D (Decision Step)	𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸		100%
S (Standards)	𝍸 𝍸 𝍸 𝍸 |||	𝍸 𝍸 𝍸 𝍸 ||	|	95%
L (Equipment)				
P (Pre-req know/skl)	||||	||||		100%
NCONC (New Concept)	𝍸 |	𝍸 |		100%
NPROS (New Process)	||	||		100%
NPRIN (New Principle)				
SENSE (Sensory Info)				
REASON (Reasons)	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸		100%
PROB (Problems)				
SAFE (Safety Factors)				
REF (References)				
				Total 98%

Appendix C

Job Aid for Developing a Gold Standard

Richard Clark and Kenneth Yates (2010, Proprietary)

The **goals** of this task are to 1) aggregate CTA protocols from multiple experts to create a "gold standard" protocol and 2) create a "best sequence" for each of the tasks and steps you have collected and the best description of each step for the design of training.

Trigger: After having completed interviews with all experts and capturing all goals, settings, triggers and all action and decision steps from each expert – and after all experts have edited their own protocol.

Create a gold standard protocol

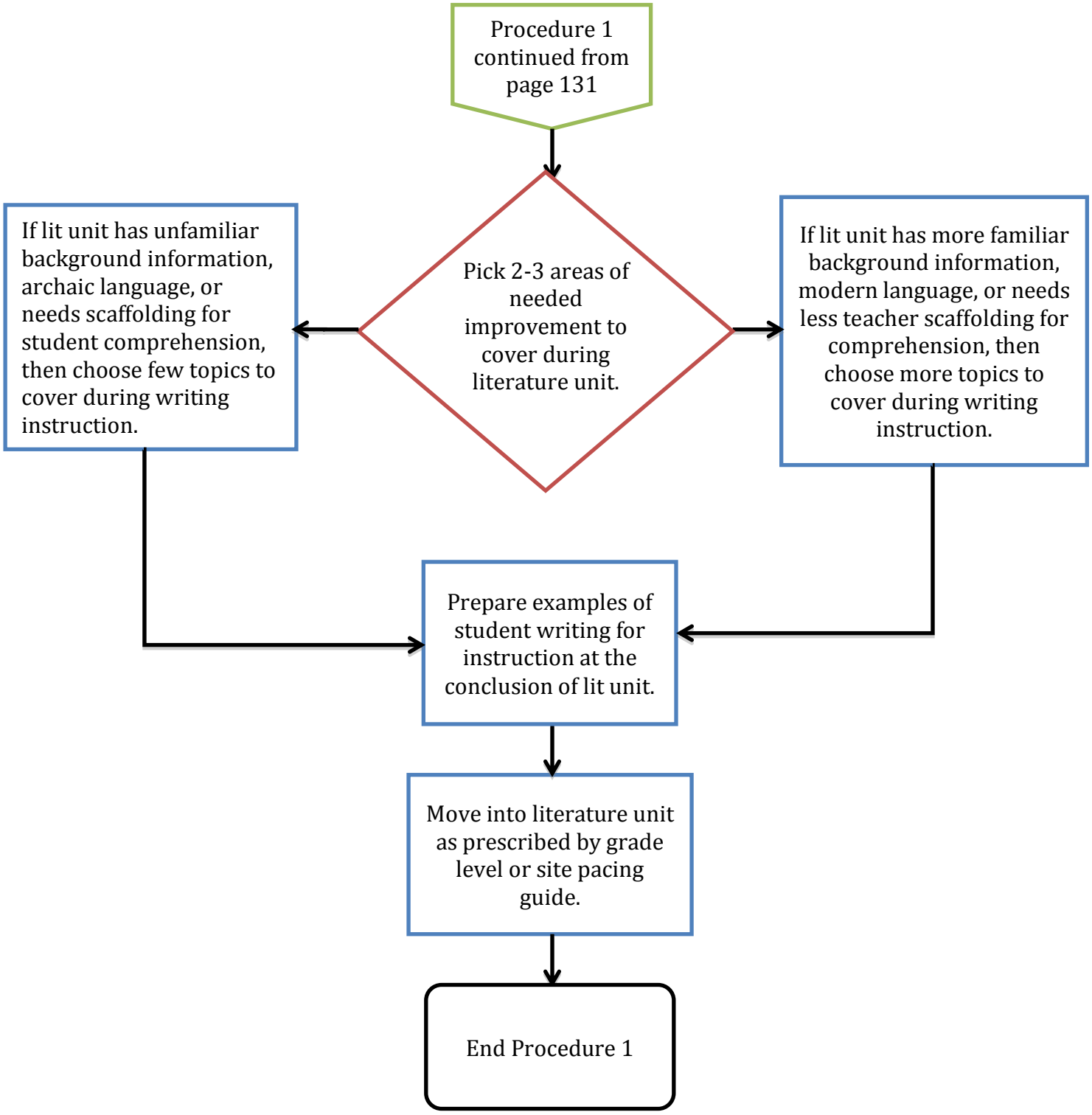
STEPS Actions and Decisions

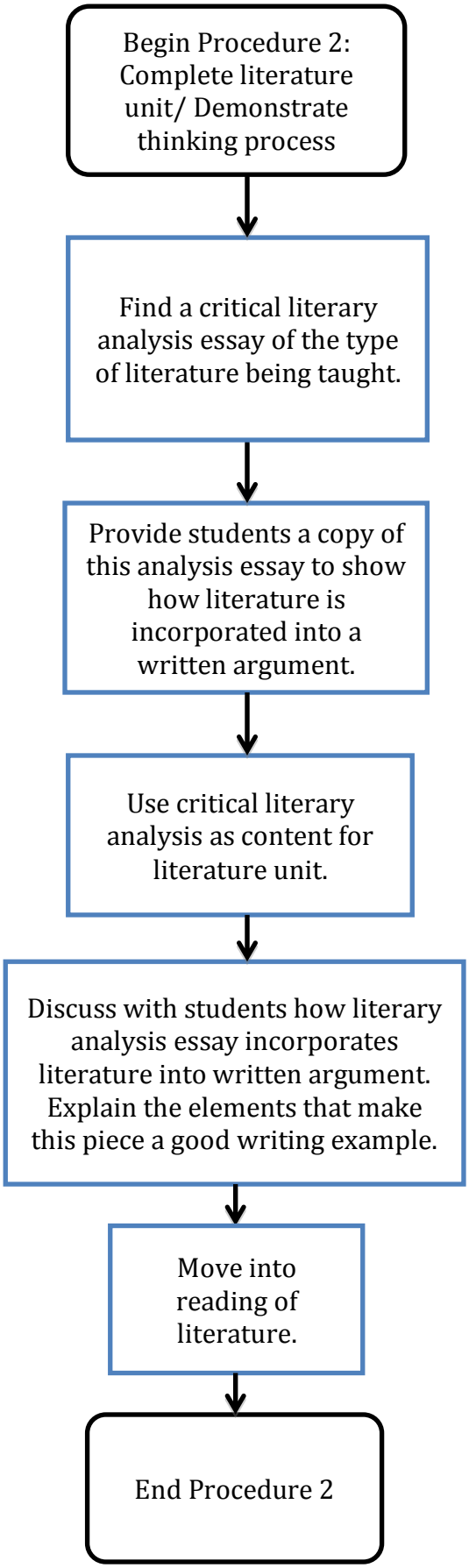
1. For each CTA protocol you are aggregating, ensure that the transcript line number is present for each action and decision step.
    a. If the number is not present, add it before going to Step 2.
2. Compare all the SME's corrected CTA protocols side-by-side and select one protocol (marked as P1) that meets all the following criteria:
    a. The protocol represents the most complete list of action and decision steps.
    b. The action and decisions steps are written clearly and succinctly.
    c. The action and decision steps use the most accurate language and terminology.
3. Rank and mark the remaining CTA protocols as P2, P3, and so forth, according to the same criteria.
4. Starting with the first step, compare the action and decision steps of P2 with P1 and revised P1 as follows:
    a. IF the step in P2 has the same meaning as the step in P1, then add "(P2)" at the end of the step.
    b. IF the step in P2 is a more accurate or complete statement of the step in P1, THEN revise the step in P1 and add "(P1, P2)" at the end of the step.
    c. IF the step in P2 is missing from P1, THEN revise the list of steps by adding the step to P1 and add "(P2N)"* at the end of the step.
5. Repeat Step 4 by comparing P3 with P1, and so forth for each protocol,
6. Repeat Steps 4 and 5 for the remaining components of the CTA report, such as triggers, main procedures, equipment, standards, and concepts to create a "Draft Gold Standard" protocol (DGS)."
7. Verify the DGS protocol by either:
    a. Asking a senior SME, who has not been interviewed for a CTA, to review the DGS and note any additions, deletions, revisions, and comments.
    b. Asking each participating SME to review the DGS, and either by hand or using MS Word Track Changes, note any additions, deletions, revisions, or comments.

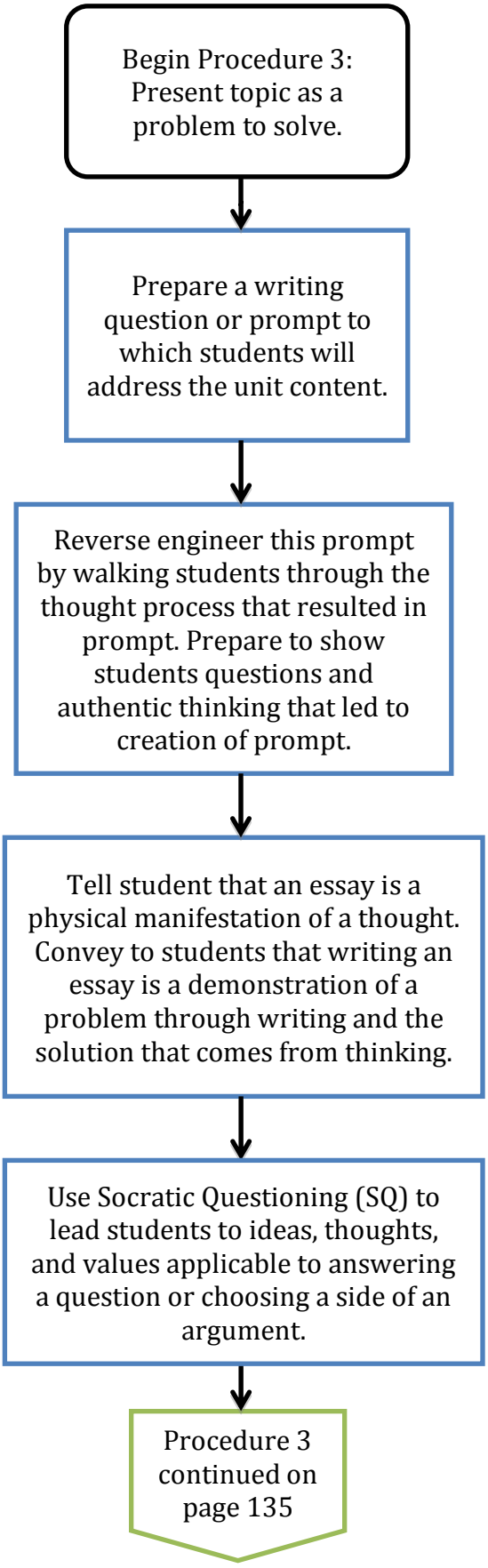
        i. IF there is disagreement among the SMEs, THEN either:
            1. Attempt to resolve the differences by communicating with the SMEs, OR
            2. Ask a senior SME, who has not been interviewed for a CTA, to review and resolve the differences.
8. Incorporate the final revisions in the previous Step to create the "Gold Standard" protocol.

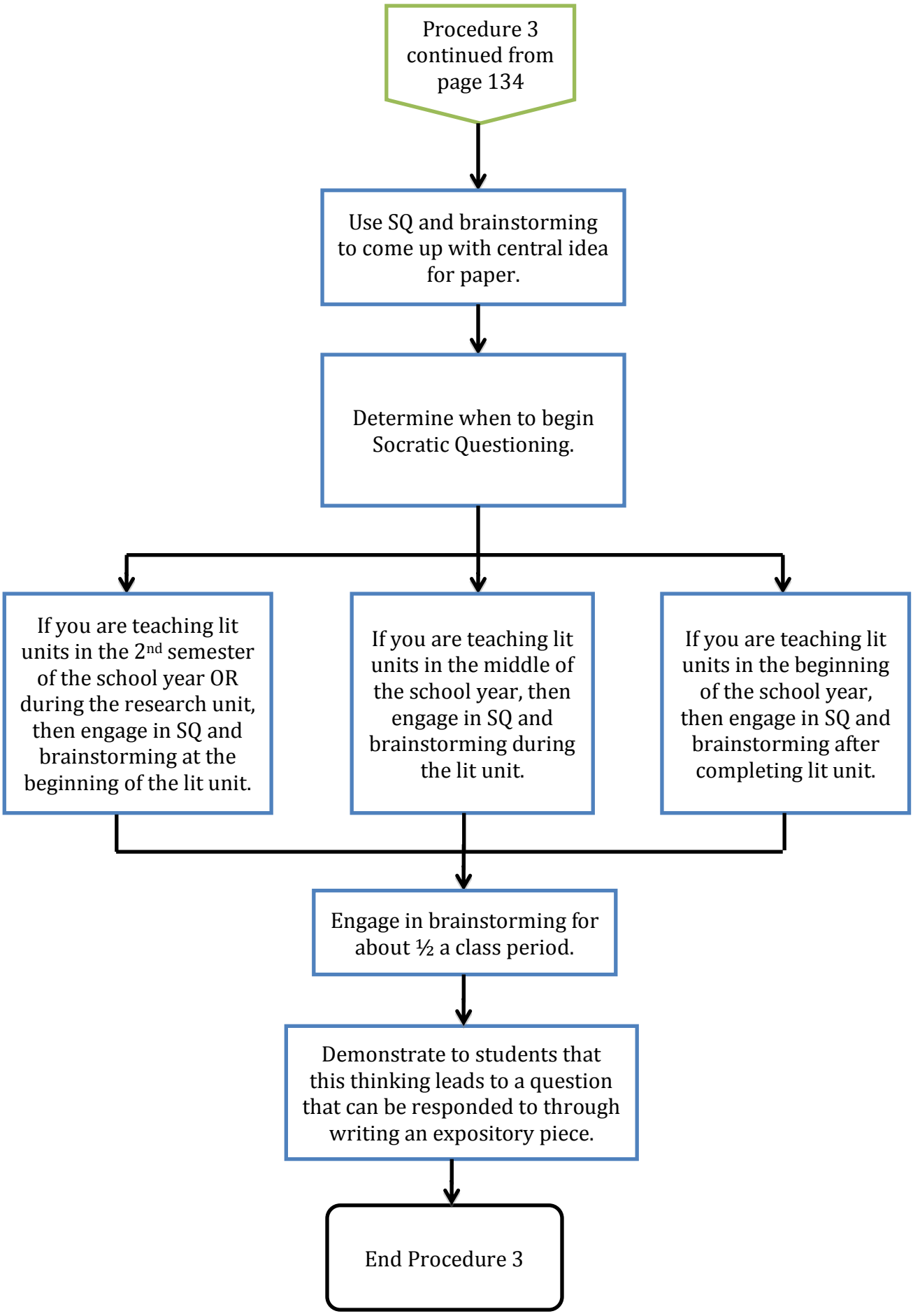
Appendix D

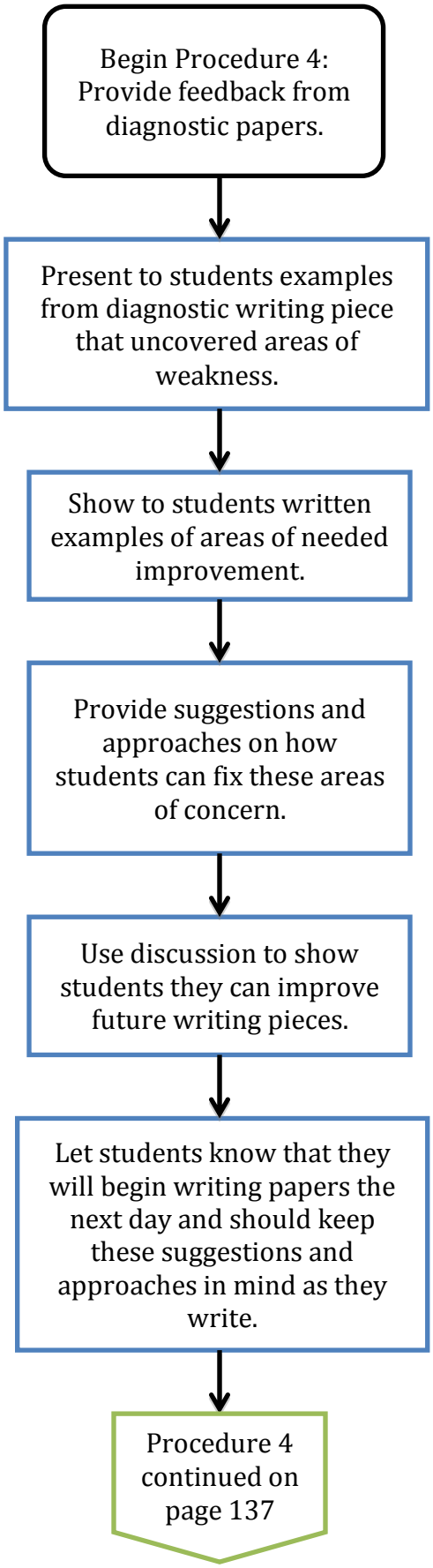
SME A Protocol Flowchart

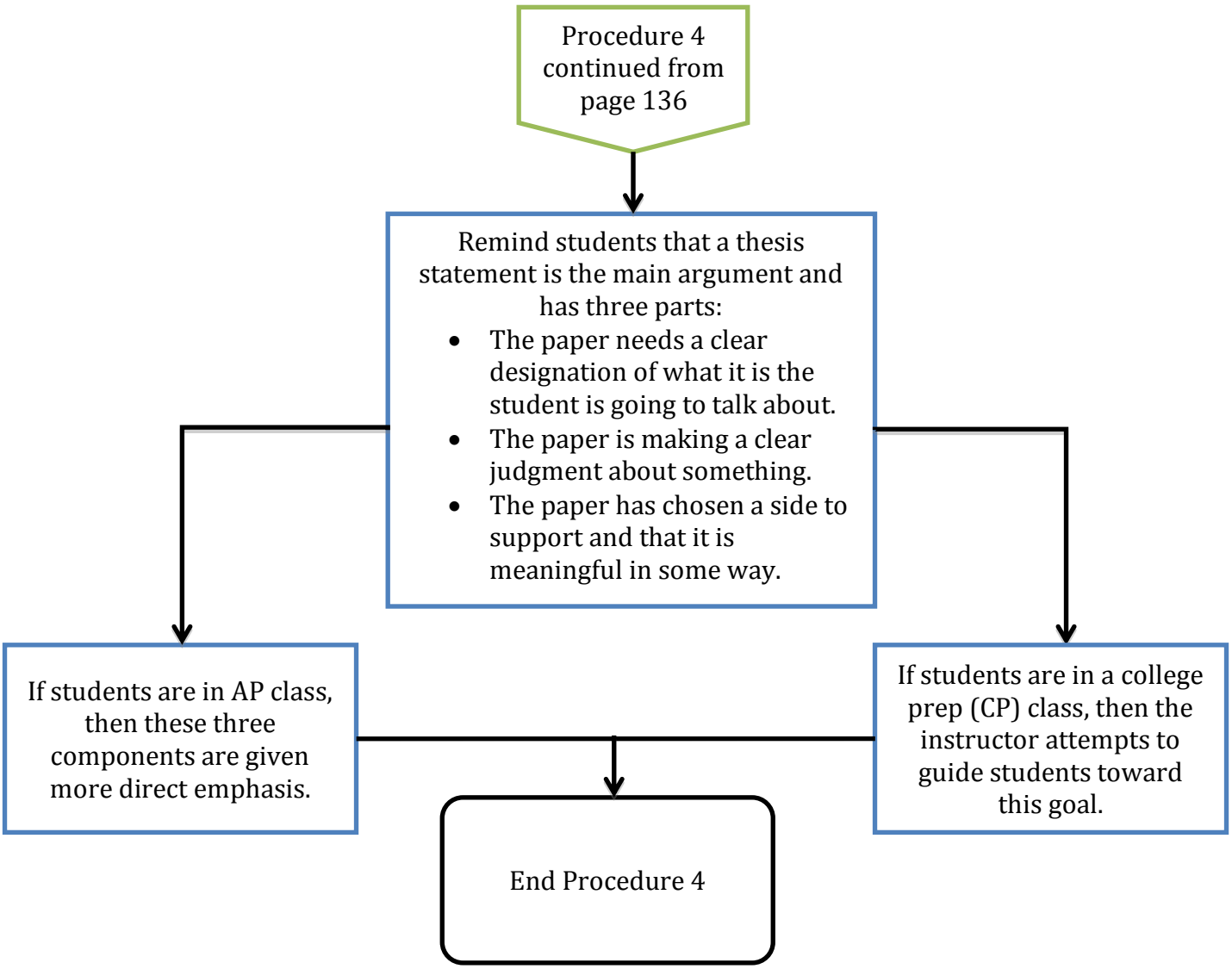

Procedure 1 continued from page 131
Pick 2-3 areas of needed improvement to cover during literature unit.
If lit unit has unfamiliar background information, archaic language, or needs scaffolding for student comprehension, then choose few topics to cover during writing instruction.
If lit unit has more familiar background information, modern language, or needs less teacher scaffolding for comprehension, then choose more topics to cover during writing instruction.
Prepare examples of student writing for instruction at the conclusion of lit unit.
Move into literature unit as prescribed by grade level or site pacing guide.
End Procedure 1

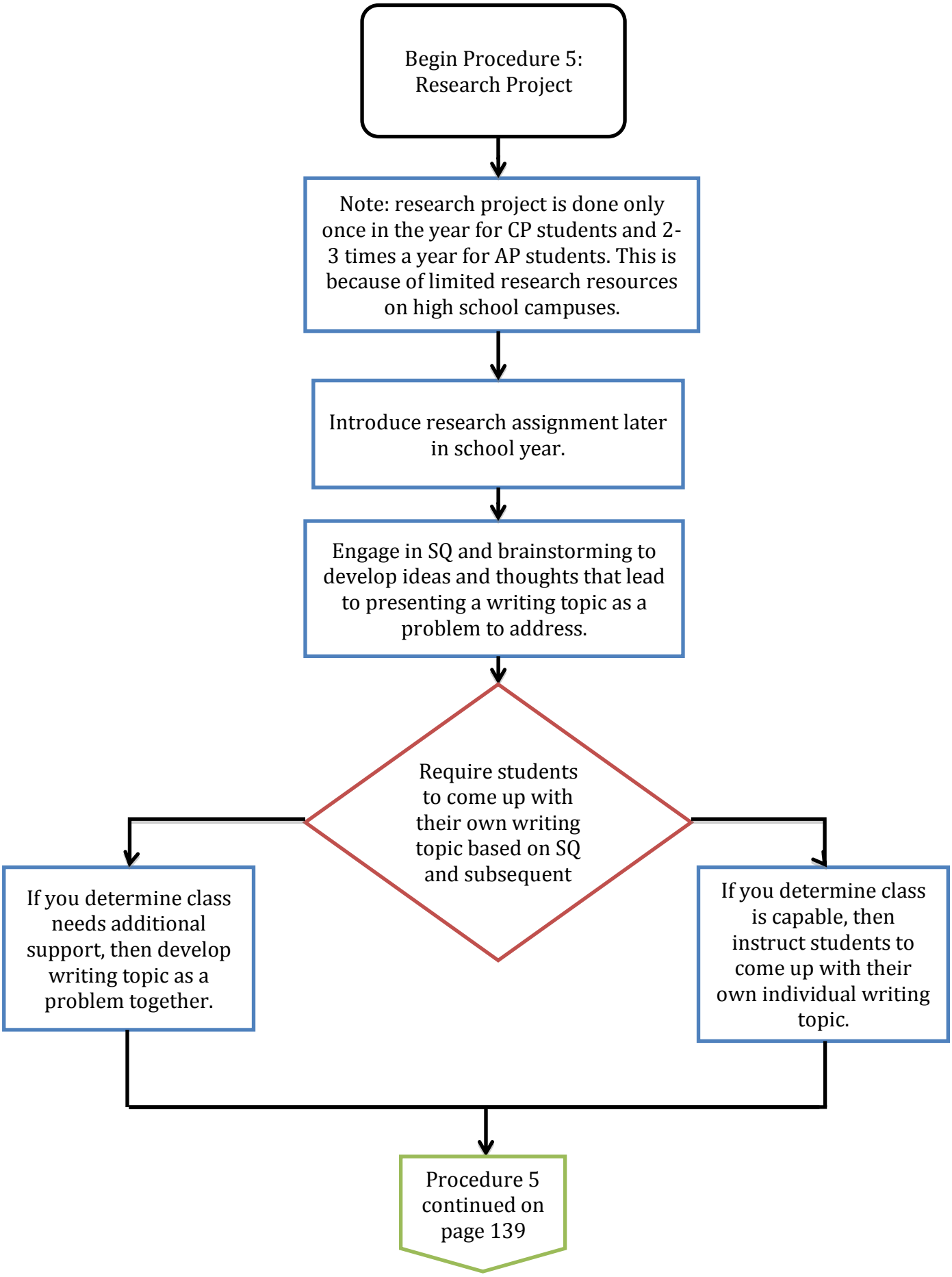

Begin Procedure 2: Complete literature unit/ Demonstrate thinking process
Find a critical literary analysis essay of the type of literature being taught.
Provide students a copy of this analysis essay to show how literature is incorporated into a written argument.
Use critical literary analysis as content for literature unit.
Discuss with students how literary analysis essay incorporates literature into written argument. Explain the elements that make this piece a good writing example.
Move into reading of literature.
End Procedure 2

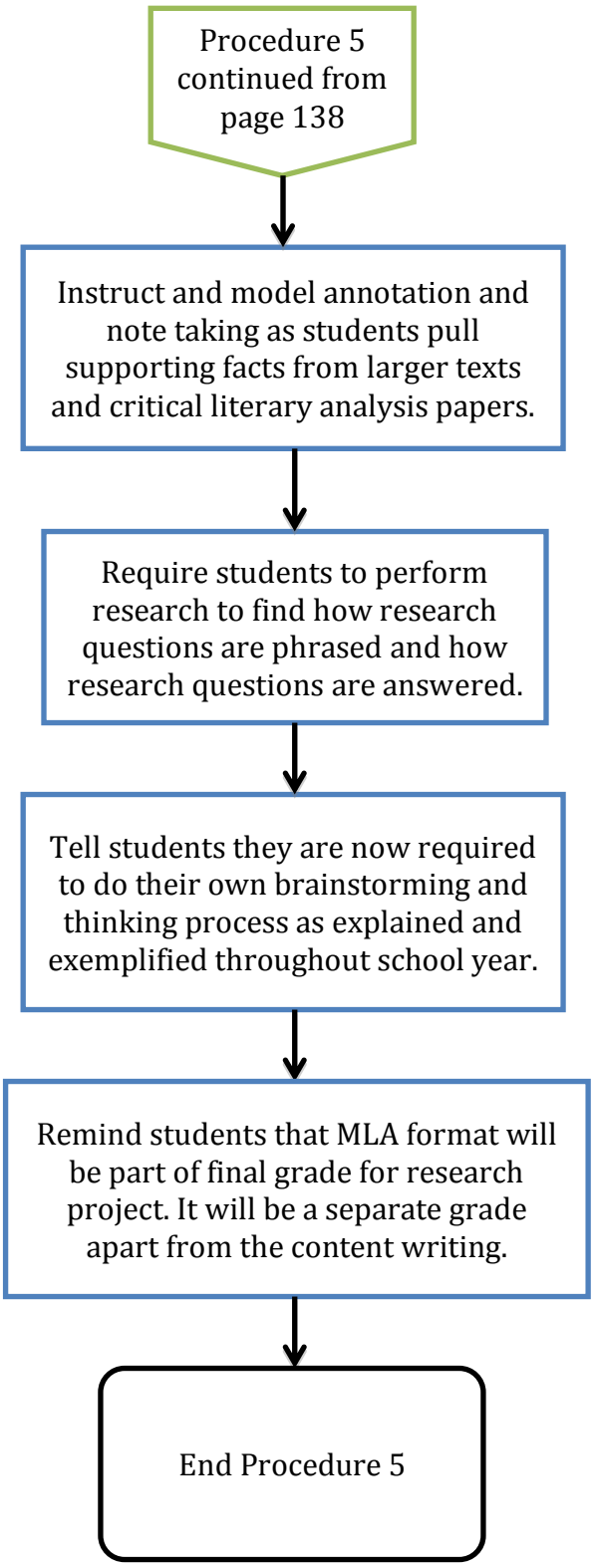

Begin Procedure 3: Present topic as a problem to solve.
Prepare a writing question or prompt to which students will address the unit content.
Reverse engineer this prompt by walking students through the thought process that resulted in prompt. Prepare to show students questions and authentic thinking that led to creation of prompt.
Tell student that an essay is a physical manifestation of a thought. Convey to students that writing an essay is a demonstration of a problem through writing and the solution that comes from thinking.
Use Socratic Questioning (SQ) to lead students to ideas, thoughts, and values applicable to answering a question or choosing a side of an argument.
Procedure 3 continued on page 135

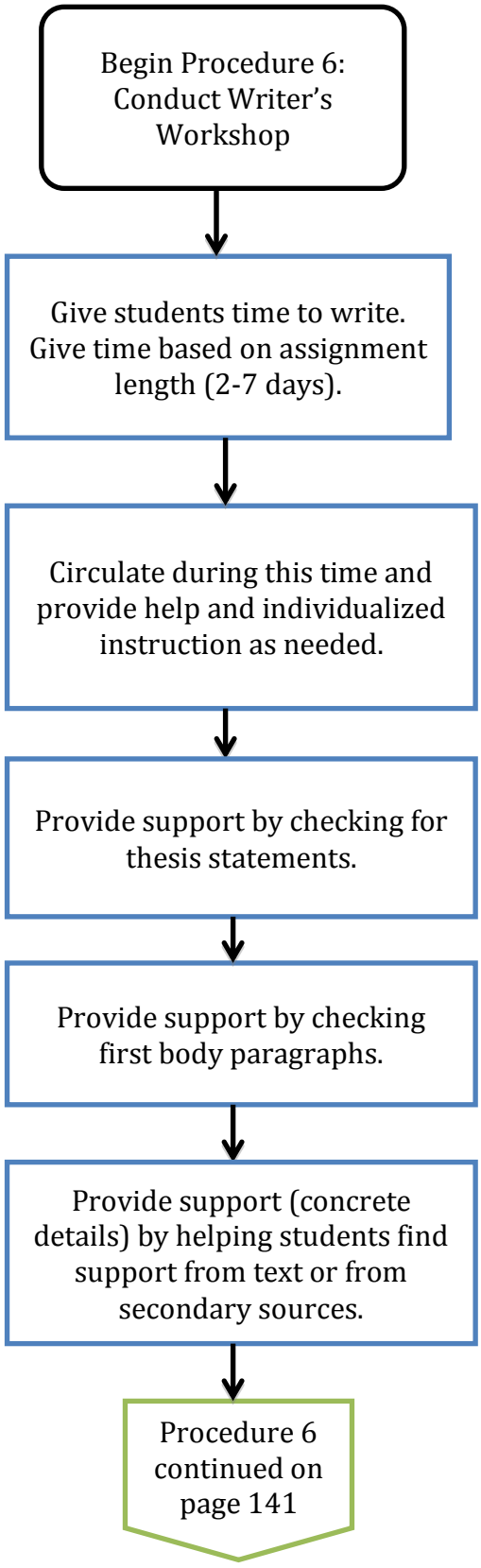

Procedure 3 continued from page 134
Use SQ and brainstorming to come up with central idea for paper.
Determine when to begin Socratic Questioning.
If you are teaching lit units in the 2nd semester of the school year OR during the research unit, then engage in SQ and brainstorming at the beginning of the lit unit.
If you are teaching lit units in the middle of the school year, then engage in SQ and brainstorming during the lit unit.
If you are teaching lit units in the beginning of the school year, then engage in SQ and brainstorming after completing lit unit.
Engage in brainstorming for about ½ a class period.
Demonstrate to students that this thinking leads to a question that can be responded to through writing an expository piece.
End Procedure 3

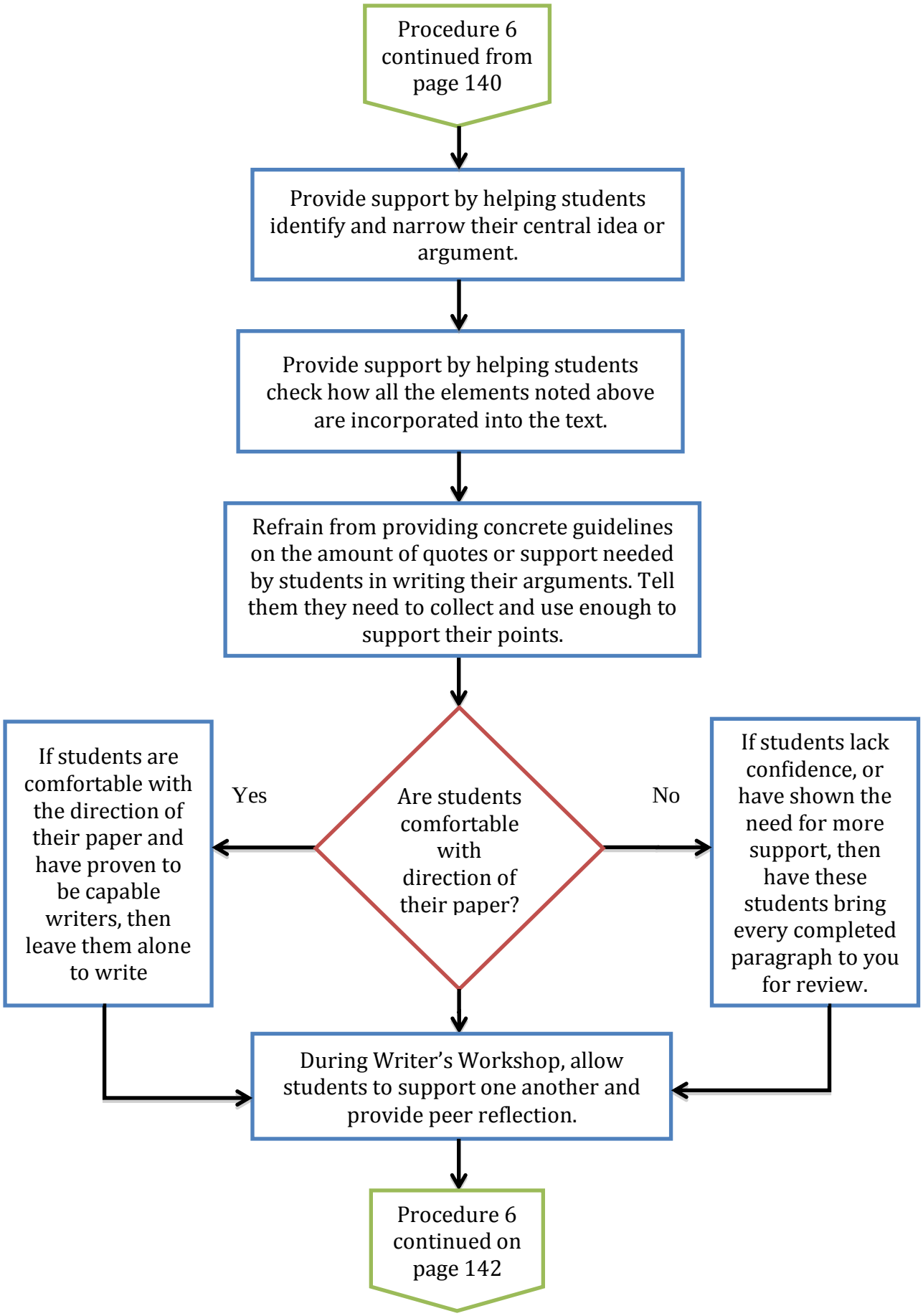

Begin Procedure 4: Provide feedback from diagnostic papers.
Present to students examples from diagnostic writing piece that uncovered areas of weakness.
Show to students written examples of areas of needed improvement.
Provide suggestions and approaches on how students can fix these areas of concern.
Use discussion to show students they can improve future writing pieces.
Let students know that they will begin writing papers the next day and should keep these suggestions and approaches in mind as they write.
Procedure 4 continued on page 137

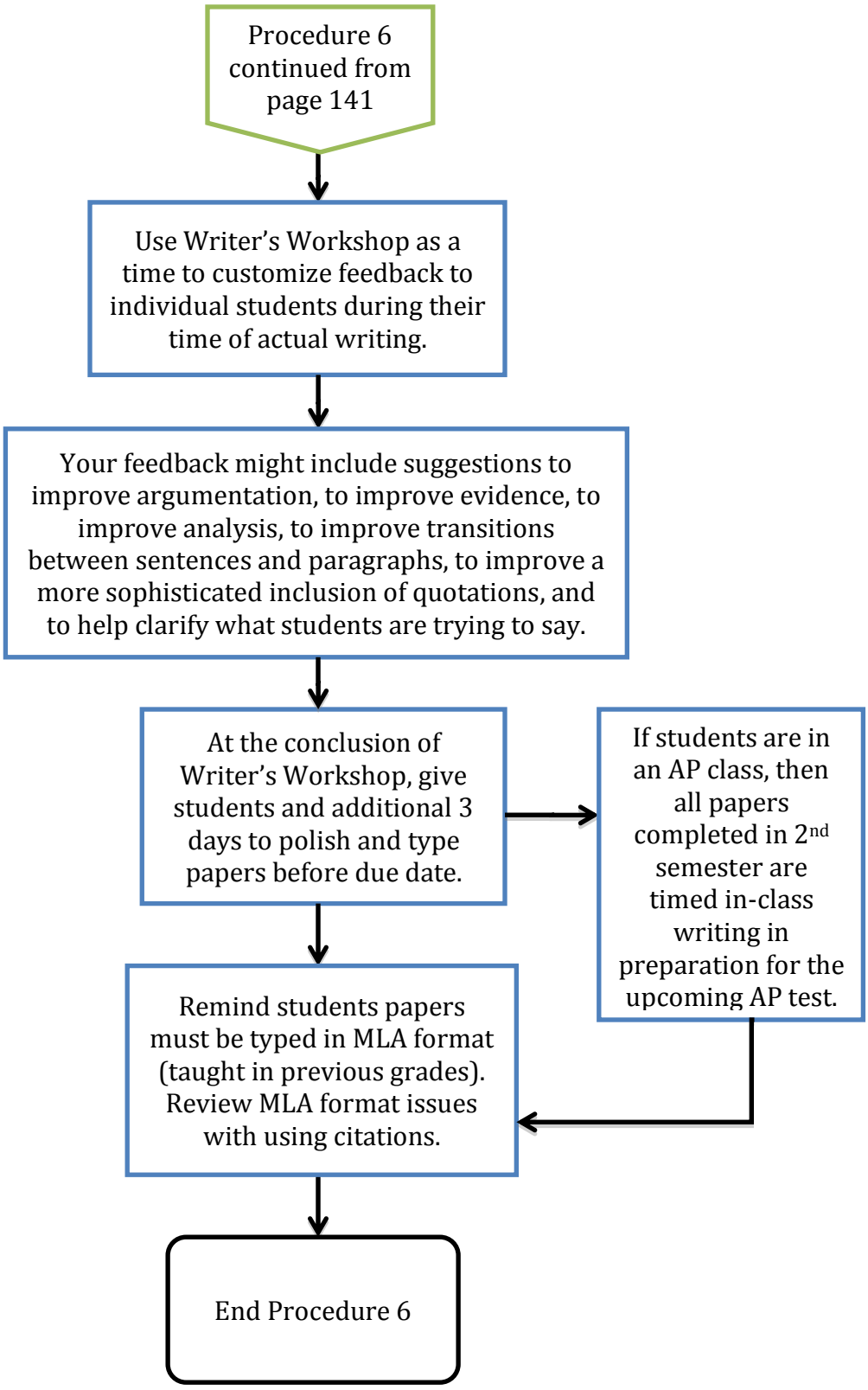

Procedure 4 continued from page 136
Remind students that a thesis statement is the main argument and has three parts:
The paper needs a clear designation of what it is the student is going to talk about.
The paper is making a clear judgment about something.
The paper has chosen a side to support and that it is meaningful in some way.
If students are in AP class, then these three components are given more direct emphasis.
If students are in a college prep (CP) class, then the instructor attempts to guide students toward this goal.
End Procedure 4

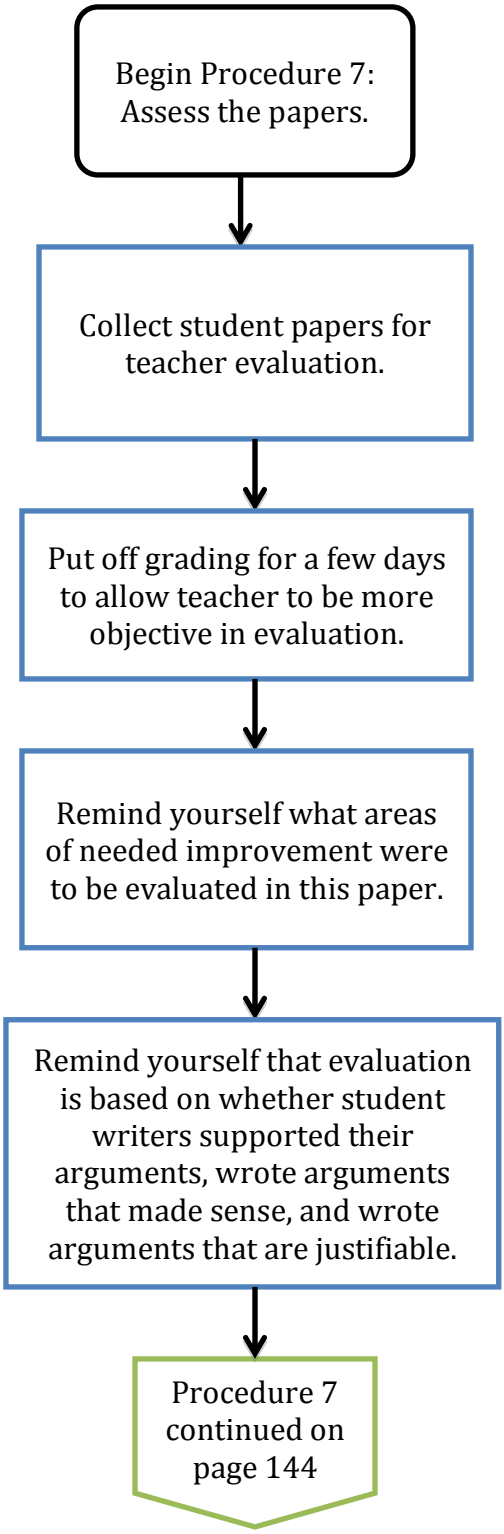

Begin Procedure 5: Research Project
Note: research project is done only once in the year for CP students and 2-3 times a year for AP students. This is because of limited research resources on high school campuses.
Introduce research assignment later in school year.
Engage in SQ and brainstorming to develop ideas and thoughts that lead to presenting a writing topic as a problem to address.
Require students to come up with their own writing topic based on SQ and subsequent
If you determine class needs additional support, then develop writing topic as a problem together.
If you determine class is capable, then instruct students to come up with their own individual writing topic.
Procedure 5 continued on page 139

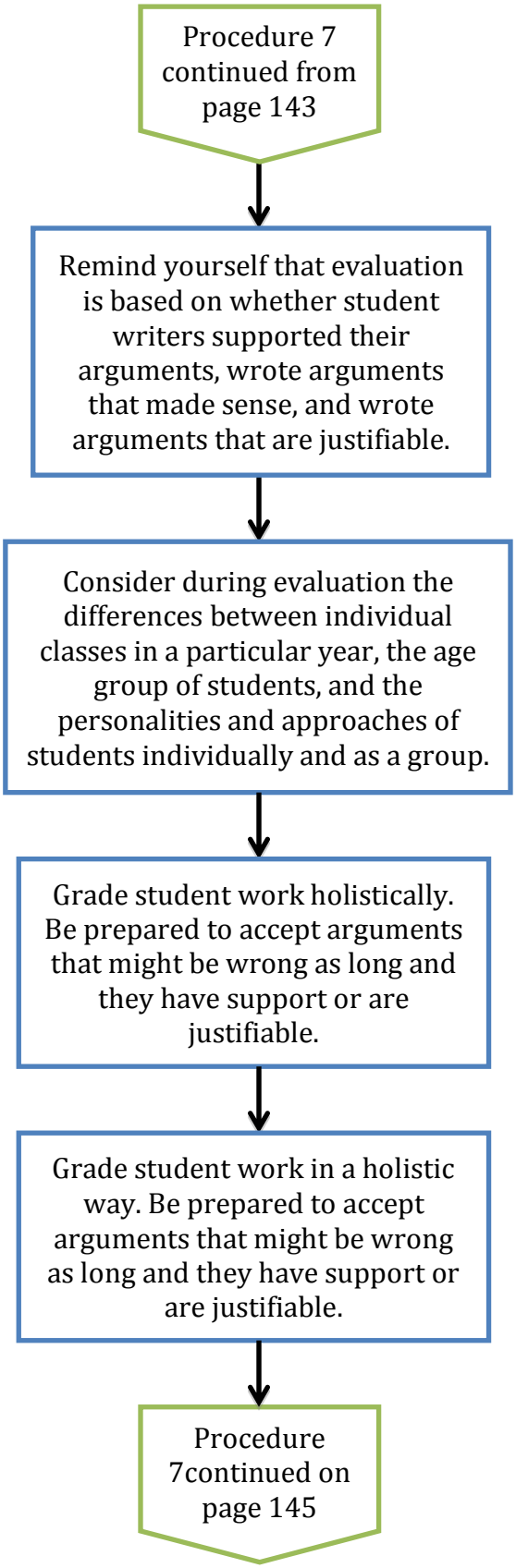

Procedure 5 continued from page 138
Instruct and model annotation and note taking as students pull supporting facts from larger texts and critical literary analysis papers.
Require students to perform research to find how research questions are phrased and how research questions are answered.
Tell students they are now required to do their own brainstorming and thinking process as explained and exemplified throughout school year.
Remind students that MLA format will be part of final grade for research project. It will be a separate grade apart from the content writing.
End Procedure 5

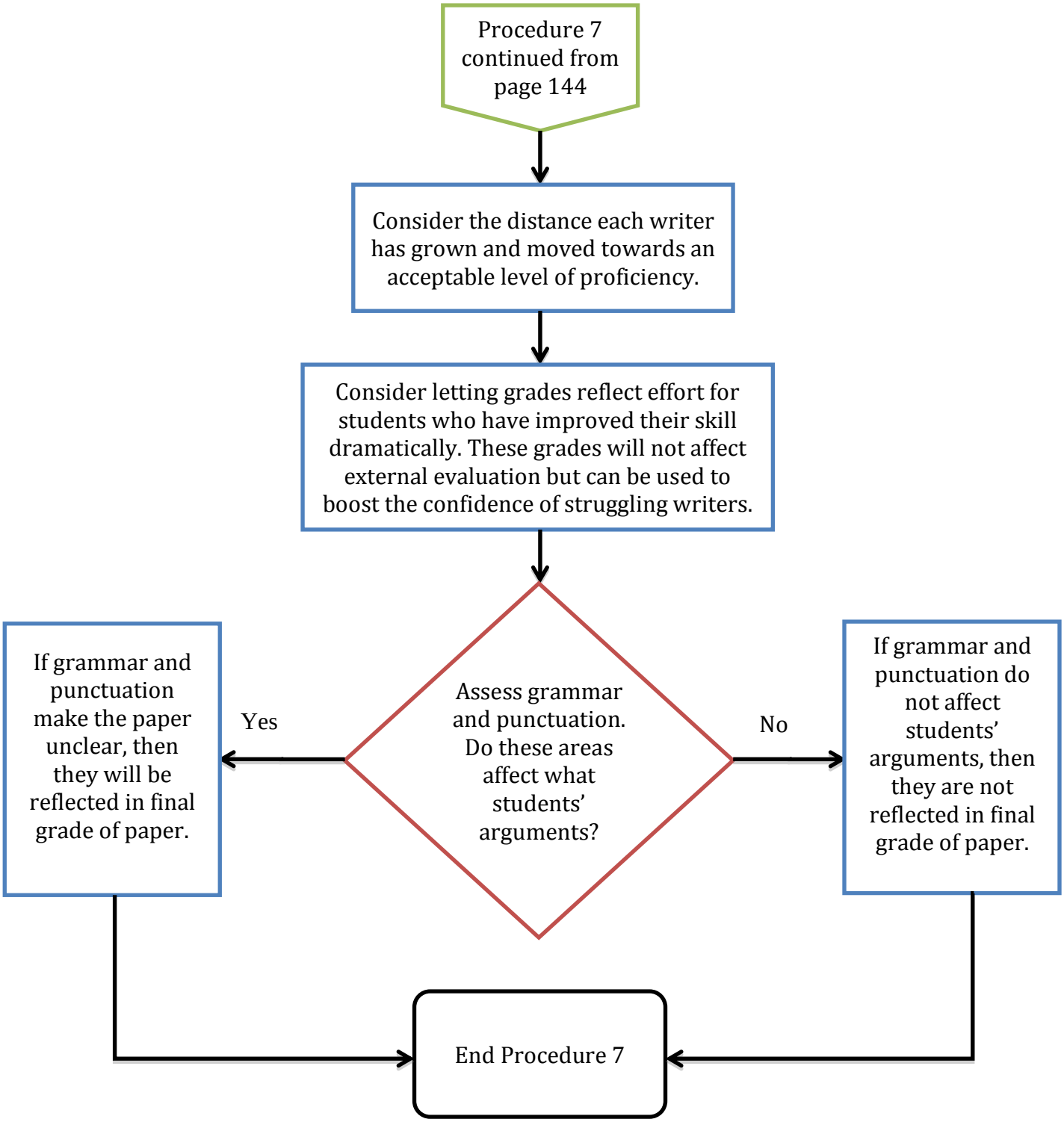

Begin Procedure 6: Conduct Writer's Workshop
Give students time to write. Give time based on assignment length (2-7 days).
Circulate during this time and provide help and individualized instruction as needed.
Provide support by checking for thesis statements.
Provide support by checking first body paragraphs.
Provide support (concrete details) by helping students find support from text or from secondary sources.
Procedure 6 continued on page 141

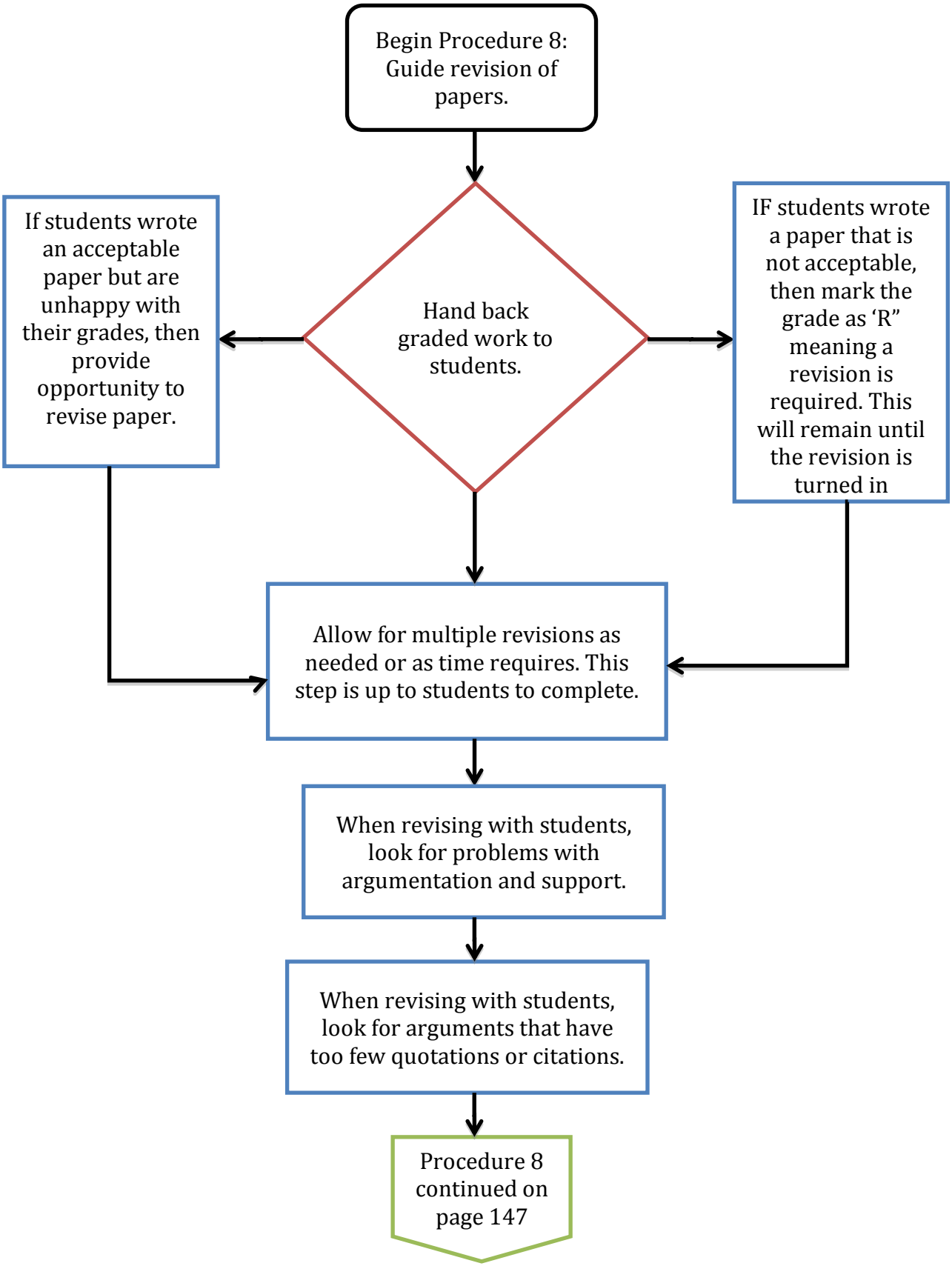

Procedure 6 continued from page 140
Provide support by helping students identify and narrow their central idea or argument.
Provide support by helping students check how all the elements noted above are incorporated into the text.
Refrain from providing concrete guidelines on the amount of quotes or support needed by students in writing their arguments. Tell them they need to collect and use enough to support their points.
Are students comfortable with direction of their paper?
Yes
No
If students are comfortable with the direction of their paper and have proven to be capable writers, then leave them alone to write
If students lack confidence, or have shown the need for more support, then have these students bring every completed paragraph to you for review.
During Writer's Workshop, allow students to support one another and provide peer reflection.
Procedure 6 continued on page 142

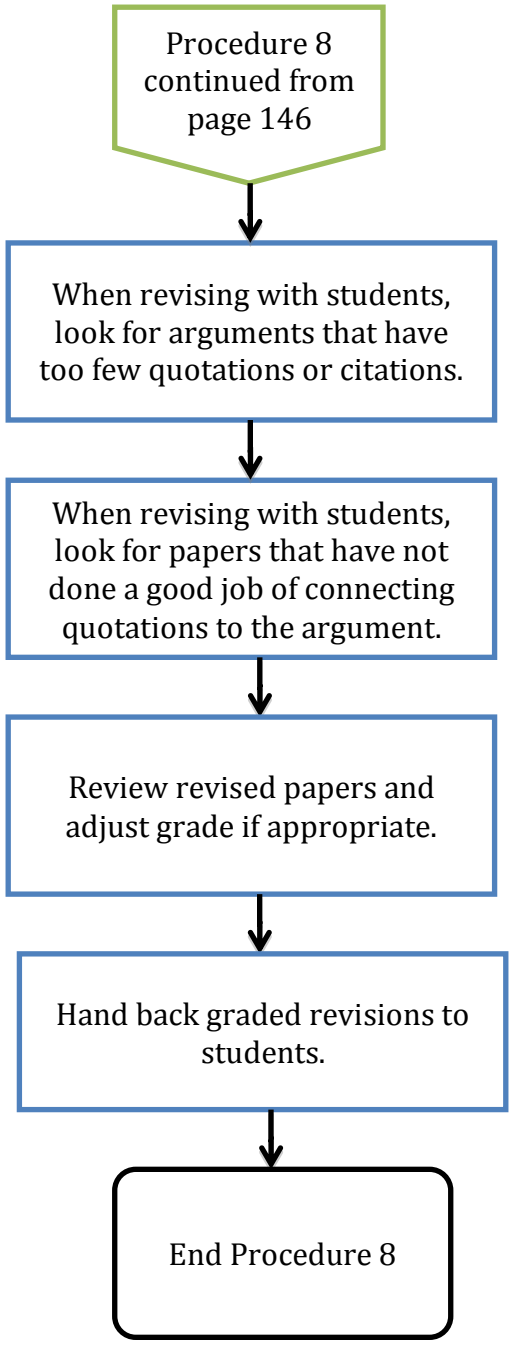

Procedure 6 continued from page 141
Use Writer's Workshop as a time to customize feedback to individual students during their time of actual writing.
Your feedback might include suggestions to improve argumentation, to improve evidence, to improve analysis, to improve transitions between sentences and paragraphs, to improve a more sophisticated inclusion of quotations, and to help clarify what students are trying to say.
At the conclusion of Writer's Workshop, give students and additional 3 days to polish and type papers before due date.
If students are in an AP class, then all papers completed in 2nd semester are timed in-class writing in preparation for the upcoming AP test.
Remind students papers must be typed in MLA format (taught in previous grades). Review MLA format issues with using citations.
End Procedure 6


Begin Procedure 7: Assess the papers.
Collect student papers for teacher evaluation.
Put off grading for a few days to allow teacher to be more objective in evaluation.
Remind yourself what areas of needed improvement were to be evaluated in this paper.
Remind yourself that evaluation is based on whether student writers supported their arguments, wrote arguments that made sense, and wrote arguments that are justifiable.
Procedure 7 continued on page 144


Procedure 7 continued from page 143
Remind yourself that evaluation is based on whether student writers supported their arguments, wrote arguments that made sense, and wrote arguments that are justifiable.
Consider during evaluation the differences between individual classes in a particular year, the age group of students, and the personalities and approaches of students individually and as a group.
Grade student work holistically. Be prepared to accept arguments that might be wrong as long and they have support or are justifiable.
Grade student work in a holistic way. Be prepared to accept arguments that might be wrong as long and they have support or are justifiable.
Procedure 7continued on page 145


Procedure 7 continued from page 144
Consider the distance each writer has grown and moved towards an acceptable level of proficiency.
Consider letting grades reflect effort for students who have improved their skill dramatically. These grades will not affect external evaluation but can be used to boost the confidence of struggling writers.
Assess grammar and punctuation. Do these areas affect what students' arguments?
Yes
No
If grammar and punctuation make the paper unclear, then they will be reflected in final grade of paper.
If grammar and punctuation do not affect students' arguments, then they are not reflected in final grade of paper.
End Procedure 7


Begin Procedure 8: Guide revision of papers.
Hand back graded work to students.
If students wrote an acceptable paper but are unhappy with their grades, then provide opportunity to revise paper.
IF students wrote a paper that is not acceptable, then mark the grade as 'R" meaning a revision is required. This will remain until the revision is turned in
Allow for multiple revisions as needed or as time requires. This step is up to students to complete.
When revising with students, look for problems with argumentation and support.
When revising with students, look for arguments that have too few quotations or citations.
Procedure 8 continued on page 147


Procedure 8 continued from page 146
When revising with students, look for arguments that have too few quotations or citations.
When revising with students, look for papers that have not done a good job of connecting quotations to the argument.
Review revised papers and adjust grade if appropriate.
Hand back graded revisions to students.
End Procedure 8

Appendix E

Gold Standard Protocol
Teaching Expository Writing to 11th-12th grade students

These steps will guide 11th and 12th grade teachers in teaching expository writing to students, preparing them for college entrance exams and college level writing.
Task: To teach 11th and 12th grade students how to write a well-reasoned, well-supported, well-argued physical manifestation of students thought.

Objective: At the end of each unit, students will create an expository paper that meets the standards described in the rubric or checklist.

Main Procedures:

1. **Prepare to teach. (A1R, B1R, C1R)**
2. **Assess the student's prior writing knowledge. (A1R)**
3. **Implement Literature Unit (A1R, B1R, C1R)**
4. **Present topic as a problem. (A1R361-363)**
5. **Introduce Prompt/ Prompt Analysis (A1R, B1R)**
6. **Provide Feedback from Diagnostic Papers (A1R)**
7. **Construct essay outline (P2N, 41R)**
8. **Provide Writing Instruction (A1R, B1R, C1R, 41R)**
9. **Conduct Writing Workshop (A1R, B1R, C1R)**
10. **Assess papers. (A1R, B1R, C1R)**
11. **Hand back papers and provide optional opportunities for further revision. (A1R, B1R, C1R, 41R)**
12. **Take opportunities to publish student writing (3PN, 41R)**

1. **Procedure 1. Prepare to Teach. (A1R, B1R, C1R)**
   - 1.1. Develop lesson objectives based on district expectations and state academic standards. (41R)(4N)
   - 1.2. Choose the text (i.e., novels, short stories, article, etc.) you will use to teach expository writing subject (A1R406) (C1R406) (P31R)
   - 1.3. IF you choose to use a novel as your reading text, THEN follow steps 1.3.1 to 1.1.6.2.
     - 1.3.1. Choose a novel to study. Follow parameters in novel selection set by district requirements or by curriculum requirements (i.e., Advanced Placement, International Baccalaureate, etc.) (A1R685) (B1R685,C1R422)
       - 1.3.1.1. STANDARD: You selection of novels is often dictated by district requirements. Your choices may be limited. (41R)(4N)
     - 1.3.2. Find thematic connections between your various choices of novels. (B1R688)
       - 1.3.2.1. Consider teaching literature within a specific context (historical, psychological, etc.). (B1R691) (P2N)
     - 1.3.3. Think about selecting a text that interests you as a teacher and that you might not have taught before. (B1R875) (P2N) (41R)

1.3.3.1. REASON: It is your passion as a teacher of literature that will excite students and create interest in the novel. (B1R780) (P2N)

1.3.4. IF you are teaching a novel that you have already read, THEN review annotations and notes from last year to see if they remain applicable to your current students' abilities and background knowledge. (B1R865) (P2N)

1.3.5. IF you are teaching a new novel for the year, THEN strive to annotate and analyze novel ahead of students. Stay ahead of students' reading progress. (B1R877) (P2N)

1.3.6. Select ideas, themes, and issues within the novel that you would like to cover with students. (B1R805-807) (P2N)

1.3.7. Select contemporary ideas, themes, and issues that connect current issues to the novel's historical context. (41R) (4N)

1.3.7.1. List them on inside of the cover of your novel. (B1R1094) (P2N) (41R)

1.3.8. Assign color-coding to each feature and apply to list on the cover of your novel. (B1R1089) (P2N)

1.3.8.1. During your annotating of the novel, place matching color-coded sticky notes on pages within the novel where these ideas, themes, and issues are addressed. (B1R1088-1092) (P2N)

1.3.8.2. REASON: This will help you identify for students particular quotes or literary features that address particular prompts chosen for this novel. (B1R1098) (P2N)

1.4. IF you choose to use a critical literary analysis as your reading text, THEN follow steps 1.2.1 to 1.2.6.

1.4.1. Find piece of writing that is a critical literary analysis of the type of literature taught. (A1R182-183) (P1)

1.4.1.1. STANDARD: These types of analysis are college level text analyses of the novels read in class. (A1R182)(P1)

1.4.2. Search for critical literary analysis example from a suitable research database or MLA Bibliography Database. (A2R183) Examples of critical literary analysis might also be available from classroom textbooks. (A1R185) (P1)

1.4.3. Choose an example of critical literary analysis that is approachable to a college senior, based on teacher judgment. (A1R184) (P1)

1.4.4. Choose an example of critical literary analysis that is not too technical. (A1R184) (P1)

1.4.5. Choose an example of critical literary analysis that is an academic analysis of a portion of the text taught during literature unit. (A1R185) (P1)

1.5. Within the first few weeks of the school year, plan to teach different writing modes (i.e. description, compare/contrast, narrative, or expository) and the appropriate context for their use. (C1R844-845) (P3N)

1.5.1.1. REASON: Having knowledge of different modes of writing allows students to vary their style that best conveys their thinking and address topics in creative ways. (C1R836-847) (P3N)

1.6. IF you choose to teach argumentative writing, rhetorical devices, particular writing skills, or are want to provide students a choice of topics, THEN follow steps 1.5.1 to 1.3.11.1.
  1.6.1. IF you are having students write an argumentative paper using a topical current event to stimulate making connections and choosing a side to argue, THEN choose articles that argue both sides of an argument. (C1R428-449) (P3N)
    1.6.1.1. STANDARD: Teach argumentative writing closer to the halfway point of the school year. (31R865-866) (P3N)
  1.6.2. IF you need to teach rhetorical features, style structures, or particular skills that need to introduced or reviewed, THEN find and choose articles that exemplify these features. (31R428-449) (P3N)
  1.6.3. IF writing assignment is student choice, THEN allow students the freedom to write on any topic they choose. (A1R834) You can give student choice writing assignments anytime during the school year. (C1R834) (P3N)
    1.6.3.1. STANDARD: Remember the goal is to teach students to be metacognitive in their approach to writing by teaching themselves how to write. (C1R474-476) (P3N) (41R)
1.7. Collect or develop prompts for students to analyze the literary text assigned. (41R)(4N)
  1.7.1. If students are reading literary text, THEN also assign a contemporary review of the novel. (P3N)
    1.7.1.1. Choose or create prompts that ask students to explain or justify why they agree or disagree with the contemporary review using the novel for support. (C1R414-417) (P3N)
  1.7.2. Choose or create prompts using one or more of the following criteria. (41R)(4N)
    1.7.2.1. Find or develop writing questions or prompts based on ideas, themes, and issues to be covered during reading of text. (A1R266-279, B1R802-804, C1R693-694) (P1, P2, P3)
    1.7.2.2. Choose or create prompts that address character development. (B1R802) (P2N)
    1.7.2.3. Choose or create prompts that address setting. (B1R1081) (P2N)
    1.7.2.4. Choose or create prompts that address the historical context from which the literary piece is based. (B1R333) (P2N)
    1.7.2.5. Choose or create prompts that address the historical context of when the literary piece was written and published. This context may also address current historical experience as compared to the literary piece. (B1R333) (P2N)
    1.7.2.6. Choose or create prompts that address literary features. (B1R803) (P2N)
    1.7.2.7. Choose or create prompts that address psychological trauma. (B1R804) (P2N)
    1.7.2.8. Choose or create prompts that address universal feelings (i.e., betrayal, courage, compassion, etc.) (B1R554) (P2N)

1.7.3. Collect prompts from Internet sources or college course sources. (A1R238) If needed, reverse engineer prompts to make them work for your particular class. (AIR420, B1R820) (P1) (P2)

1.7.4. Prepare to walk students through the thought process that resulted in the prompt. (A1R420-449)

1.7.5. Allow students, with your prior approval (41R), to come up with their own prompts that address the text. (B1R847) (P2N)

1.7.6. Prepare to provide instruction in prompt analysis using the prompts collected to give students practice in breaking apart writing prompts (See Procedure 5). (B1R240) (P2N)

1.7.7. IF you have a College Prep (CP) class, THEN prepare to provide scaffolding and direct instruction throughout unit to support students as progress through literature unit and writing assignment. (C1R1523) (P3N) (41R)

1.7.8. IF you have an Advanced Placement (AP) class, THEN consider providing less scaffolding and allow students more latitude in making their own writing choices. (C1R1500-1502) (P3N)

1.8. Create a rubric. (A1R, B1R, C1R)

1.8.1. Consider what rubric will be used to assess writing assignments. (A1R172-173) (P3N)

1.8.2. Use lesson objectives to determine what gets assessed. (C1R171)(P3N).

1.8.2.1. IF you are assessing your students' thinking, THEN create a prompt that assess students' metacognitive processing used in developing their writing. (A1R172-173) (P3N) (41R)

1.8.2.2. IF you want to assess students' argumentation based on discussion held in class, THEN build rubric with students. (See steps 3.8) (31R692) (P3N)

1.8.3. Prepare to give rubric to students before writing begins. (C1R698, 708) (P3N) (41R)

2. **Procedure 2. Assess the student's prior writing knowledge. (A1R)**

2.1. By the third day of school, have students write to a prompt without guidance for one class period. (A1R140) (P1)

2.1.1. STANDARD: IF students are in AP (advanced placement) class, they have read two novels assigned as summer reading. Have students respond in writing to one prompt that can be applied to any one of the novels read. (A1R122-126) The reading level of these texts is grade level appropriate. (A2R126)(P1)

2.1.2. STANDARD: IF students are in CP (college prep) classes, have students respond to one of 2-3 prompts based on readings from the prior school year. (A1R126-132) These texts are one grade level below their current grade level. CP student begin to read grade level texts within the first two weeks of school. (A2R132) (P1)

2.2. Collect papers and identify areas needing writing instruction as determined by teacher experience (based on academic level and age level of students) that will be addressed in future instruction. (A1R141, 144-148) (P1)

2.2.1. IF more than 70% of papers show particular area(s) needing improvement, THEN identify and list each area of needed improvement for future lessons. (A1R144-146) (P1)

2.2.2. IF less than 70% of papers have a particular area needing improvement, THEN consider revisiting these topics as time allows throughout year. (A1R144-146) (P1)

2.3. STANDARD: The following are often areas of concern based on experience: (A1R171) (P1)

2.3.1. Writing that does not answer question or prompt completely (A1R162) (P1)

2.3.2. Author chooses no side to argue. (A1R163) (P1)

2.3.3. Writing that does not have support from text. (A1R165) (P1)

2.3.4. Students retell plot without analysis (41R)(4N)

2.4. Review papers for grammatical errors (162-166) (A1R166) (P1)

2.4.1. IF a student's paper shows adequate knowledge of grammar, THEN paper will be handed back to student without comment regarding grammar.(A1R162) (P1)

2.4.2. IF an individual student's paper shows an overabundance of grammar mistakes, THEN teacher provides grammar instruction to individual students either through comments on paper or with a short conference when papers are handed back to students. (A1R163-165) (P1)

2.4.3. If a preponderance of student writing show a need for a particular grammar topic to be reviewed, THEN explicitly review grammar topic in whole class instruction. (A1R163) (P1)

2.5. Consult list of areas of student writing that need improvement. Decide which can be best addressed in upcoming literature unit. (A1R201-202) (P1)

2.5.1. Choose 2-3 areas to cover during each writing instruction to teach within chosen literature unit. (A1R201) (P1) (41R)

2.5.2. IF the literature text has background information that is unfamiliar to students, archaic language, and/or needs teacher scaffolding for comprehension, THEN choose fewer areas of needed improvement to cover during subsequent writing instruction. (A1R200-201) (P1)

2.5.3. IF literature unit has more familiar background information, modern languages, and/or needs less explanation for comprehension, THEN cover more areas of needed writing improvement during subsequent writing instruction. (A1R202-203) (P1)

2.6. Gather examples of student writing that exemplify areas of needed improvement and mentor texts that exemplify quality writing to use during writing instruction (see step 8.4). (A1R170-171) (P1) (41R)

2.7. Move into first literature unit as prescribed by grade level or site pacing. (A1R182) (P1)

3. **Implement Literature Unit. (A1R, B1R, C1R)**

3.1. Assign text (article, blog, novel, etc.) for students to begin reading. (A1R182, B1R1188, C1R 193)

3.2. Define for students that the term "text" may refer to any written work. (C1R193-194) (P3N)

3.2.1. Instruct students to use text to gather ideas throughout reading of text. (C1R199) Students may gather ideas from:
3.2.1.1. Ideas or text read by student in their daily readings. (C1R192) (P3N)
3.2.1.2. Ideas or thoughts from conversations during the day. (C1R193) (P3N)
3.2.1.3. Things or human interactions observed by the student. (C1R193) (P3N)
3.2.1.4. Clarify ideas that they have collected. (41R)(4N)
3.2.2. Guide students through class discussion on making connections between these gathered thoughts and ideas and to what they are reading. (C1R195) (P3N)
3.2.2.1. Discuss with students that connections between what they have gathered and those within the assigned text can be made in the following ways (C1R201-202) (P3N)
3.2.2.2. Connections of multiple ideas within the text itself. (C1R196-197) (P3N)
3.2.2.3. Connections to other texts read. (C1R197) (P3N)
3.2.2.4. Connection to things seen, heard, or read outside of class. (C1R198) (P3N)
3.2.3. Discuss with students how these connected ideas can create new ideas. (C1R201) Model this by taking your own thoughts, ideas, and observations and connect them to the readings assigned or to what you might be reading personally at the time. (C1R198) (P3N)

3.3. IF you are using a novel as your reading text, THEN provide students a copy of novel. (B1R717) (P2N) Encourage students to procure their own personal copy. (41R)(4N)
3.3.1. REASON: Students with personal copies of texts will be able to annotate right into the novel. Students with school copies will need to annotate in notebook. (Lit log) (41R)(4N)
3.3.2. Before beginning to read the novel, pass out to students a list of prompts from which they can choose to write. (B1R197) Tell students, “Start thinking about which prompts you might want to write to and start collecting your evidence now.” (B1R200-202) (P2N)
3.3.3. Pass out rubric at this time that will be used to assess the final paper unless you are creating one with students (see step 3.8). The rubric created with students will be developed before writing instruction begins. (B1R1056) (P2N)
3.3.4. Assign reading to occur outside of class. You may read sections of the novel in class to model Naked Reading (see step 3.1.16) or to support class discussions. (B1R1188) (P2N)
3.3.5. Think about reading the novel whole-class. (B1R1190) (P2N)
3.3.5.1. REASON: Experience shows that many students are not reading outside of class. (B1R1192) (P2N)
3.3.5.2. STANDARD: Having students reading in class gives them more guided experience in reading complex texts. (B1R1195) (P2N) Time

spent reading in class reduces the amount of novels read throughout the school year. (B1R1193) (P2N)

3.4. IF you are using a critical analysis of a literary work as your reading text, THEN provide students a copy. (A1R175-177, B1R1313, C1R414-417) (P1, P2, P3)

3.4.1. Tell students that critical essays provide someone else's words and arguments to help support what you will be saying about the novel. (B1R1401) (P2N)

3.4.2. STANDARD: Having students use critical essays requires more scaffolding and support from the teacher. The academic writing is complex and hard for students to understand. (B1R1381) (P2N)

3.5. As you read, remember to constantly assess student knowledge of the subject/topics/themes being discussed. Assess students explicitly if they understand what is being discussed. (B1R271) (P2N)

3.5.1. Use quizzes, objective tests, short answer responses, or on-demand writing assignments. (41R)(4N)

3.5.1.1. STANDARD: Assessment can also be made informally during classroom discussions. (B1R271) (P2N)

3.5.1.2. STANDARD: Formative Assessment can also be made by assigning a prompt through a school-wide electronic discussion board. (B1R90) (P2N)

3.5.2. Have students respond to a prompt writing their response in the form of a body paragraph. (see step 8.11) Students submit a paragraph and then are required to respond to at least two other student submissions. (B1R91) (P2N)

3.5.3. Look for evidence through monitoring discussion and discussion board submissions that students are thinking deeply about the novel. (P2N)

3.5.4. Use class discussion, tests, quizzes. short answer response, and on-demand writing assignments to help students develop thinking in the following ways: (41R)(4N)

3.5.4.1. Help students develop deeper thinking in the lives of the characters; (B1R328) (P2N)

3.5.4.2. Help students develop deeper thinking in the emotions of the characters; (B1R328) (P2N)

3.5.4.3. Help students develop deeper thinking in the psychological development of the characters. (B1R329) (P2N)

3.5.4.4. Help students develop deeper thinking in Contextual analysis. (B2R329) (P2N)

3.5.4.5. Help students develop deeper thinking in the influence of setting on characters. (B2R329) (P2N)

3.5.4.6. Help students see that they must connect the characters with today's world or the story's context or their writing becomes superficial. (B1R334) (P2N)

3.5.5. Discuss with students the big ideas identified during reading of the novel. (B1R221) (P2N)

3.5.5.1. STANDARD: Remember that you as a teacher may have read this novel multiple times while most students have not before entering your classroom. Slow down for students. (B1R934) (P2N)

3.5.6. Be ready for diversions in class conversations as students take discussion in different directions. (B1R222) (P2N)

3.6. Model annotation of literary text with students. (B1R903)

3.6.1. Model Naked Reading as an annotation strategy with students. Take an unmarked page with no annotations and model Naked Reading. Naked Reading is showing to students how you, as a reader, read a page for the first time. (B1R892-897) (P2N)

3.6.1.1. Think out loud to students as you hold discussion between yourself and the text about what inspires you within the page being read. (B1R893, 901) (P2N)

3.6.1.2. STANDARD: This metacognitive act of reflective reading must be modeled often for students. (B1R910) (P2N)

3.6.1.3. REASON: Annotation trains students to be deeper readers. Students begin to develop a system to keep track of their information while reading. This strategy can also transfer to other college subjects. (B2R374-375) (P2N)

3.6.2. Instruct students to annotate create a color code list inside cover of their novels. (B2R375) (P2N)

3.6.2.1. Students annotate their novels and the critical essays using sticky notes and color coding. (B1R374-375) (P2N)

3.6.2.2. Provide to students or have them bring sticky notes and highlighters to color code their annotations. (41R)(4N)

3.6.2.2.1. STANDARD: Students with school copies of texts must record annotations in notebook and not in texts. (B1R718) (P2N)

3.6.3. Work with students during reading to identify those concrete details or literary features of the story's themes (pre-identified by you during planning phase) that will be useful in answering the prompts assigned or chosen by students. (B1R1168) (P2N)

3.6.3.1. IF a prompt addresses literary features within the novel, THEN students will identify and highlight instances where these features manifest themselves in the novel. (B1R1132) (P2N)

3.6.3.2. IF a prompt addresses a theme or motif within the novel, THEN students will identify concrete details that exemplify this theme. (B1R1130) (P2N)

3.7. IF you are using a critical literary essay as your text, THEN do the following:

3.7.1. Discuss with students how critical literary analysis piece incorporates literature into written argument. (A1R176) (P1)

3.7.2. Give instruction on the elements that make this literary analysis piece a good writing example. (A1R246) (P1)

3.7.3. Direct students to keep literary analysis piece as a job aid for future writing assignments throughout year. (A1R191-192) (P1)

3.7.4. Work with students to find the following from the critical essays assigned: (P2N)

3.7.4.1. Find evidence supporting writer's claims. (B1R1367) (P2N)

3.7.4.2. Find counterarguments from essays to give students perspectives they might not have considered yet. (B1R1404) (P2N)

3.7.4.3. Ask students to consider if the critic has said something that the student can use to support their own thesis. (B1R1405) (P2N)

3.7.5. Have students color code what the literary critic said about the text as it relates to the prompt. (B1R1314) (P2N) (41R)

3.7.6. As an alternative annotation strategy, teach students how to annotate using SOAPSTone. (P3N)

3.7.6.1. STANDARD: SOAPSTone is an acronym for the following: (P3N)

3.7.6.1.1. Speaker- persona of the writer "How do they want to come across to audience? (C2R955)(P3N)

3.7.6.1.2. Occasion-what prompted the piece? (C2R955)(P3N)

3.7.6.1.3. Audience-for whom was it written? (C2R955)(P3N)

3.7.6.1.4. Purpose – what is the main point or idea? (C2R955)(P3N)

3.7.6.1.5. Subject-what are they talking about? (C2R955)(P3N)

3.7.6.1.6. Tone-speaker's attitude towards the audience and/ or subject (C1R955-960) (P3N)

3.7.7. Teach students in the beginning of the school year how to use SOAPSTone. (C1R941) (P3N)

3.7.8. Use visual aids such as photography or artwork to introduce SOAPSTone to students. (C1R962) (P3N)

3.7.8.1. Provide examples of photographs or art for students to analyze. Discuss with students the choices the photographer makes while applying SOAPSTone as an analytic framework. (C1R963) (P3N)

3.7.9. Once this has been practiced, guide students in applying SOAPSTone at the textual level. (C1R966) (P3N)

3.7.9.1. STANDARD: Tell students that anything and everything is making an argument and that argument is not an afterthought. Students can observe anything and find within it an argument about the object or person. (C1R977) (P3N)

3.8. IF students are writing an argumentative paper responding to arguments in opinion pieces, THEN do the following: (P3N) (41R)

3.8.1. Ask students to find and read opinion pieces with different takes on the same subject. (C1R871-872, 883) (P3N)

3.8.1.1. STANDARD: Choose articles are to from major newspapers (LA Times, NY Times, etc.) or from a syndicated columnists. (C1R874-875) (P3N)

3.8.1.2. REASON: These articles have been through an editing process. Writers for these publications tend to write more polished pieces. (C1R877-880) (P3N)

3.8.2. Assign students to write on that subject by taking a side using those sources to support their argument. (C1R388-392) (P3N)

3.8.3. Tell students to find articles that support counterclaims or counter arguments to the stand they have chosen. (C1R896-897) (P3N)

3.9. If you want to assess student writers' knowledge of argumentation, THEN build a rubric with students using the following questions to stimulate discussion (see procedure 3.2.3): (31R) (3N)

3.9.1. While building the rubric, ask students, "What did we just learn about argumentative writing?" (31R)
3.9.2. Ask students, "What shall we expect in this paper?" (31R)
3.9.3. Ask students, "What should that look like?"(C1R693-696) (P3N)
3.10. IF students are reading articles as examples of rhetorical devices, THEN work with the class to identify and analyze the rhetorical device. (P3N)
3.10.1. Have students analyze how that rhetorical device contributes to or creates the author's purpose. (C1R1001) (P3N)
3.10.2. Have students analyze how that rhetorical device helps connect the article to the audience. (C1R1001) (P3N)
3.10.3. Have students analyze how that rhetorical device connects readers to the pathos (emotional appeal), ethos (ethical appeal), or logos (logical appeal) of the article and its effect on the text. (B2R456) (P3N)
3.11. IF students are struggling with a particular writing skill (i.e., transitions, theme, narrative, etc.), THEN have students read articles that contain examples of this skill and analyze its use and effect in the text. (B2R456-458) (P3N)
3.12. Consider blogging (see procedure 12) for students to use as an additional writing exercise (P3N)
3.12.1.1. REASON: Required blogging forces students to practice often in taking a blank page to connect ideas and bring them into a new and interesting shaping of ideas. (C1R1414-1415) (P3N)
3.12.2. Instruct students to keep a notebook of themes and ideas they learn from reading various texts. (31R)(3N)
3.12.2.1. STANDARD: Students use this notebook throughout the year to collect ideas and themes (4N) for future writing pieces. (C1R468)
3.13. Teach students to discover their own needs within their writing by asking the following questions. (C1R488) (P3N)
3.13.1. Teach them to ask, "What are you learning from other writers?" (C1R494) (P3N)
3.13.2. Teach them to ask, "What do I notice that the writer does in the article (book, novel, etc.)?" (C1R469) (P3N)
3.13.3. Teach them to ask, "How does the writer accomplish this? (C1R469) (P3N)
3.13.4. Teach them to ask, "What can I take from this article? What can I learn from the author?" (C1R470) (P3N)
3.13.5. Teach them to ask, "What can you do in your writing? Did the writer conform to standard writing conventions, or did he/she break the rules? Does it work in the article?" (C2R496) (P3N)
3.13.6. Teach them to ask, "What did the writer craft in his/her article that surprised you?" (C2R496) (P3N)
3.13.7. Teach them to ask, "What does the writer want you to know?" (4N)

4. Present topic as a problem. (A1R361-363)

4.1. Tell students that an essay is a physical manifestation of a thought. (A1R26) Convey to students that writing an essay is a demonstration of a problem through writing and the solution comes from thinking. (A1R278-279, C1R143) (P1) (P3)

4.2. Instruct students that they can learn to write better by what they read. (C1R498) (3PN)
4.3. Use Socratic Questioning (SQ) to lead students to ideas, thoughts, and values applicable to coming up with a answering a question or choosing a side in an argument. (A1R266-267) (P1)
  4.3.1. STANDARD: Socratic Questioning is a strategy of asking questions of students to which you already know the answer. The outcome of this line of questioning is meant to lead students to a desired conclusion. (A2R267) (P1)
4.4. Determine when to begin Socratic Questioning (SQ) and developing a question to address in an essay. Decide whether this brainstorm discussion comes before, during, or after the literature unit. (A1R282-299, A1R334-347) (P1)
  4.4.1. STANDARD: Use of SQ and brainstorming at varying points within literature units provides a gradual release of responsibility for authentic thinking from teacher to student. You as teacher provide more frontloading and scaffolding, and direct instruction in the beginning of the year, and slowly have students engage in their own thinking and brainstorming as the year progresses. (A1R349-352) (P1)
4.5. IF you are teaching literature units in the beginning of the school year, THEN engage in SQ and brainstorming after completing a literature unit. (A1R284) (P1)
  4.5.1. STANDARD: Providing SQ and brainstorming after reading but before writing the essay provides a feedback loop where student work is submitted, evaluated, and returned with suggestions for improvement. (A1R286) (P1)
4.6. IF you are teaching literature units in the middle of the school year, THEN engage in SQ and brainstorming during the literature unit with less frontloading and scaffolding. (A1R282) (P1)
  4.6.1. STANDARD: You are still working on areas of needed improvement (see Procedure 1) but instruction is more focused on problematization of the literature content. (A1R288-289) (P1)
4.7. IF you are teaching literature units around springtime (2nd semester), THEN engage in SQ and brainstorming at the beginning of the literature unit. (A1R282) (P1)
4.8. IF you are teaching literature units around springtime (2nd semester), THEN engage in SQ and brainstorming at the beginning of the literature unit. (A1R282) (P1)
  4.8.1. Engage in Socratic Questioning by asking students, “What values might be important in the culture within the literary text?” (A1R269) (P1)
  4.8.2. Ask students, “How is this apparent to the student?” (A1R271) (P1)
  4.8.3. Ask students, “How is this defended?” (A1R272P1)
  4.8.4. Ask students, “How do you find examples in the text?” (A1R272) (P1)
  4.8.5. Ask students, “How do you find counterexamples?” (A1R274) (P1)
  4.8.6. Ask students, “Why would this be a good writing technique?” (A1R274) (P1)
  4.8.7. Ask students, “How does this strengthen your argument?” (A1R276) (P1)
4.9. Engage in this brainstorming discussion on text just read for about ½ half a class period. (A1R276) (P1)

4.10. Use SQ and brainstorming to come up with a central idea. (A1R620) A central idea is a short 2-3 sentence description of what the student author is trying to say.

4.10.1. Consider using the term central idea rather than thesis statement, especially for struggling writers. (A1R630) (P1)

4.10.2. STANDARD: Students often see the term thesis statement as restrictive because it is one sentence with a period. (A1R621-622) Using central idea allows students to explain more without worrying whether their thoughts fit within a formal sentence. You can then help student narrow the central idea into a thesis statement. (A1R620-630) (P1)

4.11. Demonstrate to students that brainstorming and Socratic Questioning are ways of thinking that lead to a question that can be responded to through writing an expository piece. (A1R277) (P1) (C1R148) (P3)

4.12. Take ideas developed during brainstorming and get them down on paper. (C1R150-151) (P3N)

4.12.1. Instruct students to engage in Zero Drafting. Zero Drafting is a strategy of allowing students to write without thought of editing or limitations. Students are allowed to write anything-answer prompt, begin a novel, write a journal entry, write poetry-to stimulate ideas and encourage writing. (C1R210-227) (P3N)

4.12.1.1. Model Zero Drafting with students and discuss your choices in your own writing. (C1R1084-1087) (P3N)

5. **Procedure 5. Introduce Prompt/ Prompt Analysis. (A1R, B1R)**

5.1. Demonstrate to students the questions and authentic thinking that led to the creation of prompts. (A1R420-449) (P1)

5.2. Discuss with students that writing prompts can be used to set up the structure of an essay. (B1R232) (P2N)

5.2.1. STANDARD: This activity may take 30-60 minutes. (B1R229) (P2N)

5.3. Discuss with class each prompt choice for the novel to be read. (B1R392) (P2N)

5.3.1. Show students that writing prompts can be broken down so that they can help in developing the paper to be written. (B1R)(P2N)

5.3.2. Analyze the writing prompt to see if it can show how the thesis should look. (B1R233) The thesis or central idea is the question from the prompt that students need to answer. (B1R1027) (P2N)

5.3.3. Analyze the writing prompt to see if it identifies the topics of the body paragraphs. (B1R234) These are the arguable thesis statements derived from the main thesis of the paper. (B1R1030) (P2N)

5.3.4. Analyze the writing prompt to see if it can identify what must be included in the conclusion. (B1R235) (P2N)

5.3.4.1. STANDARD: Not every prompt can be dissected into these various segments of a paper. Teacher experience and classroom discussion will help illustrate when this is the case. (41R)(4N)

5.3.4.2. REASON: High school seniors need this instruction to prepare them for complex prompts, critical thinking, and organization skills found at the university level. (B1R237, 393-396) (P2N)

5.4. Have students begin color coding the writing prompt of their choice. (B1R1004) (P2N)
5.4.1. STANDARD: This color coding is different than that used to find concrete details or literary features in text for answering prompts. (B1R1004) (P2N)
5.5. Use different colors for each of the following steps. (B1R1005) (P2N)
5.5.1. STANDARD: Color-coding helps students stay organized when analyzing their prompts. (B1R1111) (P2N)
5.5.2. Have students highlight the verbs within prompt. (B1R1007) (P2N)
5.5.3. Have students highlight the writing task. (B1R1007) (P2N)
5.5.4. Have students highlight the textual situation presented in the prompt. Textual situations are often included by prompt writers to help the students think critically and provide focus about the prompt. (B2R1007) (P2N)
5.5.5. Determine together as a class if the prompt they have chosen sets up the scene to be discussed in the paper. (B1R1013) (P2N)
5.5.6. Have students highlight the parts that make an arguable thesis statement. These drive the formation of the body paragraphs. (B1R1029) (P2N)
5.5.7. Have students highlight within prompt what is going into the conclusion. (B1R1045) (P2N) Each prompt may or may not provide this information. (41R)(4N)

6. Procedure 6. Provide Feedback from Diagnostic Papers. (A1R)

6.1. Prepare to present to students examples from diagnostic writing piece that shows areas needing improvement (from step 2.6). (A1R247) (P1)
6.2. Show examples from diagnostic papers (see Procedure 2) of areas that need improvement. (A1R172, 243) (P1)
6.2.1. Provide suggestions and approaches on how students can fix these areas of concern. Tell students, "These are examples from your papers, and here are some ways you can fix them. (A1R243) (P1)
6.2.1.1. Consider providing students an editing checklist and have them assess student work as a whole class assignment. (41R)(4N)
6.3. Use discussion to show students they can improve future writing pieces. (A1R344) (P1)
6.4. Let students know that they will begin writing their papers the next day and should keep these suggestions and approaches in mind as they write. (A1R231) (P1)
6.5. Remind students that a thesis statement is the main argument and has 3 parts. (A1R689)(P1)
6.5.1. Instruct students that their paper needs a clear designation of what it is the student writer is going to talk about. (A1R690)(P1)
6.5.2. Instruct students that their paper is making a clear judgment about something (A1R691)(P1)
6.5.3. Instruct students that their paper has chosen a side to support and that it needs to be meaningful in some way. (A1R691)(P1)
6.6. IF students are in AP class, THEN these three parts are given more direct emphasis. (A1R686) (P1)
6.7. IF students are in a CP class, THEN the instructor attempts to guide students towards this goal. (A1R687) (P1)

6.7.1. NOTE: This description (See steps 6.5-6.5.3) is what is communicated to students. The description of a thesis statement in 8.11.3-8.11.3.3 is more for novice teachers. (A1R593)(P1)

7. **Procedure 7. Construct Essay Outline (P2N, 41R)**
   7.1. Students begin to outline their essay. (B1R362)(41R)
      7.1.1. REASON: Students will take the AP test which is a timed assessment. Outlines help students organize their ideas quickly (B1R372)(P2N) (C1R543)(P3)
   7.2. Consider allowing students to get together in groups of 3-4 who are working on the same prompt to work collaboratively. (B1R359-360) (P2N) They support one another as they find concrete details and literary features to address their prompt. (B1R363) (P2N) (C1R542)(P3)
   7.3. Have students take the results from prompt analysis and identify the body paragraphs. (B1R366) (P2N)
   7.4. Have students find the concrete details they will use in each body paragraph and insert into outline. (B1R367, 406) (P2N)
   7.5. Have students write into the outline what they are going to say about the concrete details (commentary). (B1R369) (P2N)
8. **Procedure 8. Provide Writing Instruction. (A1R, B1R, C1R, 41R)**
   8.1. Introduce rhetorical features, style structures, or skills that you have decided to cover for this writing piece (see step 1.3.4). (C1R695)(P3N) critical analysis in essays
   8.2. Remind students what is expected in each paper based on instruction given and the rubric used to assess. (B1R1056)(P2N) (C1R707)(P3)
      8.2.1. Tell students that papers will be assessed according to their response to the prompt along with discussion of articles, novels, or other texts which have been notated in student notebooks (see step 1.10). (C1R693-694) (P3N)
   8.3. Review prompts with students so they know those requirements that are needed for a good paper. (C1R707) (P3N)
   8.4. Show students models of exemplary essays or mentor texts (see step 2.7). Discuss with students each exemplary essay and how the claims are addressed. (B1R425, C1R1209) (P2N) (P3)
      8.4.1. STANDARD: Always collect exemplary essays from student work to show to future classes. (B1R425) (P2N)
      8.4.2. Have students identify what the writer has done well and think about how they as writers begin to move towards that goal. (C1R1178)(P3N)
      8.4.3. Have students begin writing everything they want to say to the topic being made within the assigned text. (C1R513) (P3N)
   8.5. Ask students to look back and decide if they have said what they wanted to say. (C1R515) (P3N)
   8.6. Begin to write body paragraphs. (P1) (P2) (P3)
      8.6.1. Pull class together for whole-group discussion on creating arguable topic sentences using the concrete details previously found. They are also referred to as thesis statements. (B1R521) (P2N)
         8.6.1.1. STANDARD: An arguable topic sentence or thesis statement is:
            8.6.1.1.1. An introduction to the body paragraph. (B1R1521) (P2N)

8.6.1.1.2. Specific to the text but does not contain a concrete detail or quotes. (B1R1523) (P2N)
8.6.1.1.3. Something that can be argued about. (B1R1530) (P2N)
8.6.1.1.4. An argument that needs to be proved by concrete evidence in the text. (B1R1536) (P2N)
8.6.1.2. STANDARD: The arguable topic sentence at this point need only be 3-4 words long as inserted into outline. (B1R415)(P2N)
8.6.2. Have discussion with the class about what the arguable topic sentences say and what the writer is going to say about them. (B1R416-417) (P2N)
8.6.2.1. STANDARD: These decisions made by the student writer become the arguable topic sentences for each body paragraph. (B1R420-421) (P2N) put this in topic statement central statement move this! Procedure 2 or 4
8.6.3. Provide support to students by checking for a thesis statement. (A1R467, B1R1521)(P1)
8.6.3.1. STANDARD:A thesis statement should include: (P1)
8.6.3.2. A topic-facts and description of the story and/or element of the story under discussion. (A1R597-599) (P1)
8.6.3.3. An assertion- assertions answer what the element of the story is doing within the text. It might be contributing or undermining the plot, the theme, or characterization. (A1R600-602) (P1) Assertions may also be referred to as claims. (P2N)
8.6.3.4. Significance- this answers why the element is important, or how it connects to the life of the student or other texts. (A1R602-603) (P1)
8.7. Remind students that each body paragraph should begin with a topic sentence, followed by concrete details that support the topic sentence, and a concluding sentence to wrap up what has just been said and point to the next paragraph in the essay. (A1R583, B1R462,C2R466)(P1) (P2) (P3)
8.7.1. Provide support by helping them find examples, support from text, or support from secondary sources (if applicable). (A1R469, 558-559) Students may know the term “support from text” as concrete details, or details that can be found directly within a text. (A1R583, B1R462) (P1) (P2)
8.7.2. Support students by helping them identify or narrow their central idea or argument. (A1R470) (P1)
8.7.3. Check how all the elements noted above are incorporated into the text. (A1R559-560) (P1)
8.7.4. Instruct students that they may choose the structure of their body paragraphs. (B1R466) (P2N)
8.7.5. Tell students that they may deviate from this format as they see the need to add explanation or to set up a scene from the novel. (B2R467) (P2N)
8.7.6. Tell students to make their structure flow in a natural way that makes sense to them. (B1R456) (P2N)
8.7.7. Refrain from providing concrete guidelines in the amount of quotes or support needed by students in writing an argument. Tell them they have the responsibility to use enough textual support to your point. (A1R561-563, B1R1430) (P1) (P2)

8.7.8. Tell students to review thesis statements for rewriting or revision as they complete body paragraphs. (B1R2298)(P2N)

8.7.9. STANDARD: Students can always rewrite claims to tighten them up and ensure they fit the argument made. (B2R2298)(P2N)(41R)

8.7.10. REASON: students often find the body paragraph necessitates a change in the in the claim. (B1R506-509) (P2N)

8.8. Begin to write conclusion. (B1R539)(P2N)

8.8.1. Tell students that their prompt will often tell them what type of conclusion to write. (B1R542) (P2N)

8.8.1.1. IF the prompt has a question that asks students to reflect or gives students a task to do within their writing, THEN this question, once restated, becomes the basis for the conclusion. (B1R1678-1682) (P2N)

8.8.1.2. IF the prompt does give a task to do or is the task is more open-ended, THEN the prompt has not indicated what the conclusion should be. This would then require a more formal conclusion which entails a restating of the introduction. (B1R1682-1684) The Common Core writing rubric can help guide instruction a more formal conclusion. (B1R1703-1704) (P2N)

8.8.1.3. EXAMPLE: The prompt might ask students to explain how their thesis impacts the world. The students know that will be the direction their conclusion should take. (B1R541) (P2N)

8.8.2. Encourage students to avoid the phrase, “In conclusion.” (B1R547) (P2N)

8.8.3. Instruct students that a formal conclusion is the reverse of the introduction but is not an exact copy. The conclusion is a restatement of what is said in the essay, but with a more reflective look at the significance of the thesis. (B1R1700-1702) (P2N)

8.8.4. In writing a more formal conclusion, tell students to begin with a restatement of their thesis in a differently from what was written in the introduction. (B1R566, 1734) (P2N)

8.8.4.1. Instruct students to avoid giving advice in the final sentence of the conclusion. (B1R1749) (P2N)

8.8.5. Tell students to restate the points or claims made in the body paragraphs. (1734) (P2N)

8.8.5.1. Tell students that the last statement of the conclusion is a larger statement that is more universal and addresses the theme of the paper. (B1R567-568, 1734) (P2N)

8.9. Begin to write introductory paragraph as the last step in completing draft. (B1R1904)(P2N) (C1R537-538) (P3)

8.9.1.1. REASON: It is easier to craft an introductory paragraph when the rest of the paper is already completed. The student now knows what the paper is about. (B1R1905) (P2N)

8.9.2. Tell students that an introductory paragraph may start with a broad general thematic statement sentence that has to do with the topic or theme at hand. (B2R550-551, 1896) This is common but not required. Students may choose to move their general thematic statement further into the paragraph. (B1R1898) (P2N) (C1R538)(P3)

8.9.3. Tell students that the first sentence could also be a theme statement. Theme statements do not mention the novel at all. They are universal statements that pertain to people. (B1R552-554) (P2N)

8.9.4. Tell students that the next sentence is narrowed down to the particular text, novel, or characters being discussed. (B1R554)(P2N)

8.9.5. Tell students that the next sentence is the thesis, or the main argument of the writing piece. (B1R557) (P2N)

8.9.6. Instruct students that in writing an introductory paragraph, the writing starts with a broad, universal statement which narrows to the thesis which is exactly what the paper is going to talk about. (B1R556-558) (P2N)

8.10. Provide additional instruction to class on revising and improving papers before engaging in Writers Workshop. (41R)(4N)

8.11. Instruct students on the use of linkages and transitions between sentences and paragraphs. (B1R1944)

8.11.1. Tell students that transition words are used to link sentences or ideas within paragraphs. (A1R) (B1R1961)

8.12. Tell students that linkages connect paragraphs to each other. Linkages occur when a writer takes a few words from the last sentence of a paragraph and uses those same words in the first sentence of the next paragraph. (B1R1944)

8.13. Consider providing additional instruction in the use of SOAPSTone (see procedure 2) as a strategy for students to review their own writing. (41R)(4N)

8.13.1. Tell students that, as writers, they should consider SOAPSTone as criteria for their own writing. (C1R1004) (P3N)

8.13.1.1. STANDARD: SOAPSTone can be used throughout the school year by students in analyzing everything they write as well as what they read (see step 3.5.2). (C1R999) (P3N)

8.13.2. Instruct students that the SOAPSTone criteria guide the decisions they make in an essay or text (C1R1005) (P3N) SOAPSTone can help guide writers in their efforts to convey meaning or improve writing voice. (C1R847-848)

8.13.2.1. STANDARD: Voice refers to the writer's choice of diction and the consideration of tone a writer gives to the intended audience. These choices may include: (P3N)

8.13.3. Use writing devices (i.e. narrative, anecdote, etc.) to soften or illustrate a point when providing commentary in their writing. (C2R847) (P3N)

8.13.3.1. Use comparisons that help to define or describe. (C2R847) (P3N)

8.13.3.2. Concentrate on the flow and rhythm of the writing as it is read by the reader. (C2R847) (P3N)

8.13.4. Guide students in analyzing their writing to make their sentences less complex or obtuse. (C1R1538) Work with students to do the following: (P3N)

8.13.4.1. REASON: students often strive to make their writing sound intelligent through the use of length and complexity. They might also attempt to hide their misunderstandings of content or writing knowledge by obfuscating their sentences. Encourage student writers to say what they mean. (C2R)(P3N)

8.13.5. Review verb usage by having students think about the ratio of passive verbs to active verbs without affecting meaning. (C2R)(P3N)

8.13.6. Have students check the ratio of descriptive nouns to abstract nouns. (C2R)(P3N)

8.13.6.1. STANDARD: A descriptive noun is a common noun with which a person can experiment with our senses. Abstract nouns are those that refer to something with which a person cannot interact (e.g., love, hate, pride, peace, etc.) (C2R)(P3N)

8.13.6.2. STANDARD: A good ratio to consider is 4-5 descriptive nouns to 1 abstract noun. (C2R)(P3N)

8.13.7. Review the number and variety of words in each sentence. (C1R1548)(P3N)

8.13.8. Instruct students to consider the rhythm within the structure of their paragraph. Discuss with students if longer, passive sentences convey the same message as shorter, more direct sentences. (C1R1548) (P3N)

8.13.9. Remind students often that sentence length and word choice are the prerogative of the writer. (C1R1550)(P3N)

8.14. STANDARD: Encourage students that their writing should say what they want it to say. (C1R1533)(P3N)

9. Procedure 9. Conduct Writing Workshop (P1) (P2) (P3)

9.1. Give students time to write. Give time based on assignment length (2-7 days). (A1R456, 464-465) (P1)(B1R1416)(P2)

9.1.1. STANDARD: Allow students time to write drafts but shorten writer's workshop time if students begin to complete papers earlier than anticipated. (41R)(4N)

9.1.2. IF a student is in an AP class, THEN all papers completed during 2nd semester are timed in-class writing in preparation for the upcoming AP test. (A1R549-552) (P1)

9.1.3. STANDARD: AP students might be given only one day to complete essay in preparation for AP test later in school year. (41R)(4N)

9.2. Circulate during Writer's Workshop and provide oral feedback and individualized instruction as needed. (A1R468, B1R481, C1R316-317) (P1) (P2) (P3)

9.2.1. Gauge student understanding of expectations. Be prepared to provide additional instruction to correct misunderstandings or to provide more practice with a particular skill. (C1R713) (P3N)

9.2.2. IF misunderstandings or need for additional instruction limit their ability write a quality paper, THEN stop and address the additional topic before moving on in the writing process. (C1R714)(P3N)

9.2.2.1. REASON: Teach this additional instruction immediately if its absence will hinder students from completing their writing piece. (C1R714)(P3N)

9.3. IF misunderstandings or need for additional instruction do not limit the students' ability to write a quality paper, THEN cover this additional topic sometime during the draft writing. (C1R715)(P3N)

9.3.1. Check first body paragraphs during Writers Workshop. (A1R468) (P1)

9.4. IF students are comfortable with the direction of their drafts and have shown you they are capable writers (based on past assignments), THEN leave students alone to write. (A1R474) Spot-check writing as you circulate if possible. (A1R512, B1R1416, C1R585) (P1) (P3)

9.5. IF students lack confidence or have shown they need more support, THEN these students are required to bring every completed paragraph to you for review. (A1R476, 509) (P1) (C1R286-289)(P3)

9.6. Have students engage in peer review during writer's workshop. (41R) (4N)

9.6.1. Allow students during writing workshop to support one another or provide peer reflection during this part of assignment. You may follow an informal, semiformal, or formal peer review process.

9.6.2. STANDARD: In order for peer review to be successful, Students need to approach peers they know will be critical of their writing and of whom they are willing to accept criticism. (A1R541-542, B1R2156) (P1) (P2)

9.6.3. STANDARD: This pairing does not naturally happen very often. (A2R541)(P1)

9.7. IF you want students to engage in some peer review of papers, THEN follow the semiformal peer review process in steps 9.7.1 to 9.7.3.5. (B1R2151)(P2N)

9.7.1. Have students peer review each other's drafts. (A1R580) Students may be grouped together by the teacher or by student choice. (B1R2153)(P2N) (C1R238)(P3) This process will occur twice during each writing unit. (C1R241,325)(P3N)

9.7.2. Consider pairing up weak writers with strong writers who would be willing to work with another student in providing support. (B1R2156) This happens as you figure out the skills and personality characteristics of each student. (A1R541-542, B1R2156) (P1)(P2)

9.7.2.1. STANDARD: Trust is important in making collaborative pairings. Sharing writing can be frightening for students. Choose student partnerships wisely (B1R2168-2174) (P2N)

9.7.3. During peer review, have students review the following as peer editors. (P2N)

9.7.3.1. Have students determine if writer has answered the prompt; (B2R)(P2N)

9.7.3.2. Have students determine if writer has written effective transitions between sentences within paragraphs; (B2R)(P2N)

9.7.3.3. Have students determine if writer has written effective transitions between paragraphs; (B2R)(P2N)

9.7.3.4. Have students determine if writer has written an effective conclusion that wraps up the paper; (B2R)(P2N)

9.7.3.5. Have students determine if writer has written a paper that makes sense. (B2R)(P2N)

9.8. IF you feel students find value and increased editing skill from peer review, THEN provide a formal peer review process as outline in steps 9.8.1 to 9.8.11. (C1R646) (P1)

9.8.1. Have students to get in groups of 3-4 people of their choice. (C1R323) (P3N)

9.8.2. IF the class is a CP class, THEN provide peer editors with a checklist (see end of protocol) of what to look for in their colleague's papers. (C1R1518) (P3N)

9.8.3. IF the class is an AP class, THEN have peer editors use the following strategy to provide peer revision- Bless, Press, Address (C1R1517). (C1R635)

9.8.4. Instruct students do the following: (P3N)

9.8.4.1. Bless-talk about what is working in the paper. (C1R635)(P3N)

9.8.4.2. Press-press author to improve where there is need for improvement. (C1R635)(P3N)

9.8.4.3. Address-help address author's questions about their paper. (C1R635)(P3N)

9.8.5. Model the review strategy Bless, Press, and Address with class, showing what peer editors should be doing to writer's papers during revision process. (C1R1180-1182) (P3N)

9.8.5.1. REASON: This activity helps to train student editors and helps norm the process of revision. (C1R1182) (P3N)

9.8.6. Student writers have first draft reviewed by peers of their choice. (C1R318, 325) (P3N)

9.8.6.1. STANDARD: This process should allow groups to get through 3-4 people within an hour (1-2 class periods). (C1R652-654) Consider mixing groups at various times throughout school year. (C1R648) (P3N)

9.8.7. Ask students to bring copies of 1st draft for each member of peer group, if possible or practical. (C1R628-629) (P3N) (41R)

9.8.8. Instruct students seeking peer support to bring questions that address issues within their own writing (paragraph or paper). (C1R630-631) (P3N)

9.8.9. Instruct peer editors to read paper. Editors may give revisions as they read or annotate and finish notes on paper itself. (C1R632-633) (P3N)

9.8.9.1. As an alternative step, have one member of the peer editing group read paper while writer and remaining peer editors listen. (C2R)(P3N)

9.8.9.1.1. REASON: Having a peer editor read the paper gives the writer an opportunity to listen to the paper from another reader's voice. The writer must listen to the paper and any unclear or confusing writing. They must also hear any grammatical or punctuation errors. (C2R)(P3N)

9.8.10. Instruct student authors to sit and listen to peer editors without comment. The writer does not speak at all except through their writing. (C1R641-643) (P3N)

9.8.11. Give students a copy of the rubric and have the students assess their colleagues' papers. (B1R2085-2086) The International Baccalaureate and Common Core rubrics are less vague than the Advanced Placement rubrics. (B1R2094) Consider using the Common Core Informative Rubric to assess expository pieces in a literature class. (B1R2131) (P2N)

9.9. As the teacher, use Peer Review time to provide feedback to individual students if they seek it or if you feel individual students need it based on past writing

assignments. (A1R480-481, B1R1416, C1R667-670) (P1) (P2) (P3) You may also join peer editing groups as needed. (C1R316-317) (P3N)

9.10. Have students begin to write 2nd drafts based on review, comments, and suggestions from peers and from you as the teacher. (41R)(4N)

9.10.1. Allow students to conference with you during writing of 2nd draft with questions about papers or ideas (C1R677)(P3N)

9.10.1.1. REASON: While the workload is great, it is easier to guide students towards making efforts to improve writing while they are in the process of actually writing. This also makes final evaluation easier since you have seen the papers and worked with students steering them towards an improved product. (A1R488-490) (P1) (C1R686)(P3)

9.10.2. Work with students during individual conferences to address the following:

9.10.2.1. Provide guidance in possible directions to improve argumentation. (A1R486) (P1)

9.10.2.2. Provide feedback in suggesting improvements to evidence. (A1R486) (P1)

9.10.2.3. Provide feedback in improving transition between sentences and paragraphs- connecting ideas that blend one thought into another (see step 9.12). (A1R882)(P1) (B1R535)(P2)

9.10.2.4. Provide customized feedback in suggesting improvements to analysis. (A1R487) (P1)

9.10.2.4.1. STANDARD: Students may know the term commentary, which is the explanation of how a concrete detail explains or deepens your thesis. (A1R650-651) (P1)

9.10.2.5. Provide feedback in helping students clarify what he/she is trying to say. (A1R487) (P1)

9.10.2.6. Provide customized feedback in developing a more sophisticated inclusion of quotations into students' texts. (A1R884)(P1)

9.10.2.7. Provide customized feedback in helping students take fewer words and incorporate them into own sentences rather than dropping a quote into drafts out of context. (A1R887) (P1)

9.10.2.8. Writing summary rather than analysis. (C1R1190)(P3N)

9.10.2.8.1. STANDARD: While these tend to appear each school year, address them based on the work of the students within each class. (C1R1189-1194) (P3N)

9.11. Consider reviewing drafts as a whole class by assigning students to turn in drafts in their current form (1st or 2nd revision).

9.11.1. Select 6 random papers and share with whole class. (C1R1177-1178) (P3N)

9.11.2. Discuss areas of concern that exhibit themselves during drafting and revision. (C1R1190-1191) (P3N)

9.12. IF your students are writing an argumentative paper, encourage students to revise their own drafts by reminding them of the modes of writing they have learned so far. (31R) (P3N)

9.13. Hold second round of peer revision to review second draft following any peer review model noted above. (C1R241, 325) (P3N)

9.14. At the conclusion of writers workshop, give students 3 additional days to type and polish papers before final due date. (A1R547-549, B1R582) (P1) (P2)

9.15. Remind students paper must be typed in MLA format. Review MLA format issues with citations. Provide help to students who need extra support. (A1R664, B1R1972) (P1)(P2)

9.15.1. NOTE: MLA format has been taught in previous grades so this instruction is not a focus in 12th grade. (A1R664-667) (P1)

9.16. IF possible, have students submit papers to an online grammar check program such as TurnItIn.com. (B1R594)(P2N)

9.16.1. REASON: This program helps correct grammar. This requirement puts the responsibility for correcting grammar issues on the student. (B1R594) (P2N)

9.17. Analyze completed papers with an online program to detect plagiarism. (41R)(4N)

10. Procedure 10. Assess papers. (A1R, B1R, C1R)

10.1. Collect student papers for teacher evaluation. (A1R708)(P1)

10.2. Put off grading for a few days. (A1R709) (P1)

10.2.1. REASON: This allows instructor to be more objective in evaluation. (A1R711) (P1)

10.3. Remind yourself what areas of needed improvement and content based on instruction given will be evaluated during grading using the rubric provided or the rubric created with class in step 3.8. Provide very detailed and excessive feedback. (A1R714)(P1) (B1R583) (P2N)

10.4. Consider giving audio feedback to student writing at the if possible within your school's assessment software. (B1R2270) (P2N)

10.4.1. STANDARD: Provide more detailed and excessive feedback in the beginning of the year. This will take much time, but this helps to resolve student writing problems which results in the need for less feedback as the year progresses. (B1R602-606) The amount and quality of feedback sets the tone for the rest of the year. Students know you take writing seriously and read their writing critically. (B2R606)(P2N)

10.5. Base evaluation on whether student writers supported their thesis, their arguments make sense, and are justifiable. (A1R718-719) (P1)

10.5.1. Consider the personalities and approaches of students individually and as a class group. (A1R716) Ask yourself, "How did this particular class approach the text being analyzed?" (P1)

10.6. Consider the differences between classes in a particular year. (A1R714) (P1)

10.7. Base evaluation on the age group of students. (A1R715) (P1)

10.8. Grade student work in a holistic way. (A1R743) Be prepared to accept arguments that might be wrong as long as they have support and are justifiable. (A1R741-742) (P1)

10.9. Consider the distance each writer has grown and moved towards an acceptable level of proficiency. (A1R728-729, A1R750) (P1)

10.9.1. STANDARD: Students are never informed of this grade scheme and it applies to very few students each year (2-3 students and is usually applied to students with IEP's or 504's) (A1R763-771)The inflated grade does not change external evaluation of lower performing students but is used as a boost in confidence which reflects their improvement and hard work. (A1R754-757) (P1)

10.10. Assess grammar. (A1R785)(P1)

10.10.1. IF the grammar and punctuation do not affect what the student wanted to say, THEN it is not reflected in the student's grade. (A1R785)(P1)

10.10.2. IF grammar and punctuation makes a paper unclear, THEN it will be reflected in the student's grade. (A1R785-788) (P1)

10.10.3. STANDARD: Grammar and punctuation should clarify what the writer is trying to say. (A1R786)(P1)

11. Procedure 11. Hand back papers and provide optional opportunities for further revision. (A1R, B1R, C1R, 41R)

11.1. Return back graded work to students. (A1R813, B1R1478)(P1) (P2)

11.1.1. IF students wrote an acceptable paper but are unhappy with their grades, THEN they have the opportunity to revise their paper. They must meet with you before they begin to revise. (A1R814-816) (P1)

11.1.2. IF students wrote a paper that does not meet proficiency based on the rubric, THEN mark the grade as 'R', meaning a revision is required. (A1R818) An 'R' means the paper has no point value. This will remain the case until a revision is turned in. (A1R819-825) (P1)

11.1.3. REASON: This helps incentivize students to actually attempt a revision rather than settle for a poor grade. (A1R824) (P1)

11.2. Consider allowing for multiple revisions as needed and as time requires. This is up to students and your schedule as a teacher. (A1R852) Experience, however, shows that students do not revise more than one time. (A1R849) (P1)

11.3. Offer to conference with students who want to revise their graded paper to provide additional targeted practice to improve writing. (C1R288, C1R301-302) (3PN)

11.4. During conferences, look for the following common problem areas. (P1)

11.4.1. Look for problems in student writing such as problems with the argumentation and support: (A1R859)(P1)

11.4.2. Look for problems in student writing such as papers having too few quotations or citations. (A1R859)(P1)

11.4.3. Look for problems in student writing such as writers not doing a good job connecting quotations to the argument. (A1R861) (P1)

11.4.4. Ask students to be ready to discuss where they struggled with their writing. (C1R254)(3PN)

11.5. IF time allows, consider returning papers to students for a reflective revision. (C1R254-256) (3PN)

11.5.1. Ask students to reflect on the top 5 things they need to work on as targeted practice to improve paper. (C1R263) (3PN)

11.5.2. Assign students to submit multiple versions of an improved writing area of concern. (C1R265-266) (3PN)

11.6. Tell students to resubmit reflective revisions and revised paper for a revised final grade. (C1R301, C1R306-308) (3PN)

12. Procedure 12. Publish student writing. (3PN, 41R)

12.1. Encourage students to share their writing through blogging and submissions of writing pieces to various publishers. (C1R) (4N)

12.2. Have students consider the sense of audience when publishing writing. (C1R746) Model for students how and why writing pieces might be published. (C1R1338) (3PN)

12.3. Tell students that this is where they decide whether to use all the feedback from peer review and conferencing or not. Establish with students that this is their paper and they have the final choice of what is included when they decide to publish. (C1R1266-1276) (3PN)

12.4. Assign students to blog regularly. Have students make connections between articles and texts, and between what they are learning in class and something experienced outside the classroom. (C1R374)

12.4.1. Encourage students to write a blog post and share post on Twitter. (C1R757-759) (3PN)

12.4.2. STANDARD: Publishing gives students an authentic reason to engage in writing.

12.5. Instruct students on tagging blogs to help writing to be found on Internet. (C1R767) (3PN) Internet tags help search engines find Blogs or other writings more easily based on search parameters.

12.5.1. Instruct students to find main ideas and key points from their text and turn them into tags. (C1R770) (3PN)

12.6. Encourage students to participate in Network Reading. Network Reading is where writers find an audience or cohorts of people on line (i.e., Twitter, WordPress) who might be interested in their writing topics. Fellow writers read, respond, and share one another's articles on their blogs. (C1R771)(3PN)

12.6.1. REASON: This gives students an audience outside of school for their writing. (C1R771-772) (3PN)

12.7. Encourage students to read and comment on the blogs of other writers. Encourage them to join into the conversation of writing pieces and share with each other through individual blogs. (C1R774-778) (3PN)

12.7.1. Monitor this Internet activity through your participation in Blogging and making connections with other authors including your students. (C1R)

12.7.2. REASON: The more student writers engage on other writers, the more other writers return the favor and engage student writing online. Students participate in blogger communities to find and get followers, to share good writing, and to observe the writing craft of other bloggers. (C1R1292)(3PN)

12.8. Encourage students to publish by offering extra credit for getting any writing piece published anywhere outside the classroom. This can include Blogs, newspapers, or magazines (C1R1292)(3PN) (41R)

12.9. Require students to establish a twitter account and to set up a personal blog. (C1R1293) (3PN)

Expository Writing
Editing Checklist

1) Does the introduction draw you into / make you want to continue reading the essay? Why? If not, how might the author improve the intro?

2) **How clear is the author's argument/claim/thesis?** Scale 5 - 1; Highest: *Very clear*, Lowest: *Not clear at all*

3) **At which point did you feel most interested by this piece? When least? Explain.**

4)**Does the logic of this paper's argument ever fall flat? Where? What might be done to correct this?**

5) **How smoothly does this paper integrate examples/evidence into its own argument? Does it clearly illustrate connections between the evidence it cites and the ideas they support, or does it merely assume them? Explain.**

6) **Can the conclusion of this paper be convincingly drawn from the thesis and the argument made in the body of the paper? Why or why not?**

7) **Scan and spot the paper for the any of the following problems: colloquialisms, informality, clichés, and wordiness. Give a few examples of these problems, if they exist.**

8) **How thorough is the author's use of MLA formatting (name, pagination, source citations, and works cited)?**
Scale 5 - 1 / Highest: *Very thorough*, Lowest: *MLA format missing*
9) AP Essay Scoring: 9-8 Effective, 7-6 Adequate, 5, 4 Inadequate, 3-2 Little Success

1) Does the introduction draw you into / make you want to continue reading the essay? Why? If not, how might the author improve the intro?

2) **How clear is the author's argument/claim/thesis?** Scale 5 - 1; Highest: *Very clear*, Lowest: *Not clear at all*

3) **At which point did you feel most interested by this piece? When least? Explain.**

4)**Does the logic of this paper's argument ever fall flat? Where? What might be done to correct this?**

5) **How smoothly does this paper integrate examples/evidence into its own argument? Does it clearly illustrate connections between the evidence it cites and the ideas they support, or does it merely assume them? Explain.**

6) **Can the conclusion of this paper be convincingly drawn from the thesis and the argument made in the body of the paper? Why or why not?**

7) **Scan and spot the paper for the any of the following problems: colloquialisms, informality, clichés, and wordiness. Give a few examples of these problems, if they exist.**

8) **How thorough is the author's use of MLA formatting (name, pagination, source citations, and works cited)?**

_____ Scale 5 - 1 / Highest: *Very thorough*, Lowest: *MLA format missing*

9) AP Essay Scoring: 9-8 Effective, 7-6 Adequate, 5, 4 Inadequate, 3-2 Little Success

Argumentative Peer Revision Checklist

1. Write one question per paragraph that you'd like your reader to answer (in the margin)

2. Exchange essay w/ another student (out of the 3 students today, TWO must be different from last week)

3. Check for:
- claim—is there an argument
- evidence/data/reasons
- counter argument—can you suggest others?
- structure
- grammar, sp. mechanics
- ANSWER THEIR MARGIN QUESTIONS

4. 10 minutes / 2 min warning / Finish early? Re-read. Take another close look.

5. 3x

6. Review and reflect on responses.
- Were your questions answered? Do you agree w/ them?
- What revisions are needed? Why?
- What did you learn from reading the other essays about your own?

Appendix F
Coding Spreadsheet

Spreadsheet follows this page

			SME				Steps		Alignment	SME (ROUND 2)			
Step	Type	Final Incremental Gold Standard Protocol Procedures	SME A	SME B	SME C	SME D	A	D	1, 2, 3, or 4	A2R	B2R	C2R	D2R
		Procedure 1. Prepare to Teach. (A1R, B1R, C1R)					35	13					
1	A	1.1. Develop lesson objectives based on district expectations and state academic standards. (41R)(4N)	0	0	0	1			1	0	0	0	0
2	A	1.2. Choose the text (i.e., novels, short stories, article, etc.) you will use to teach expository writing subject (A1R406) (C1R406) (P31R)	1	0	1	1			3	0	0	0	0
3	D	1.3. IF you choose to use a novel as your reading text, THEN follow steps 1.3.1 to 1.1.6.2. (B1R,)	0	1	0	1			2	0	0	0	0
4	A	1.3.1. Choose a novel to study. Follow parameters in novel selection set by district requirements or by curriculum requirements (i.e., Advanced Placement, International Baccalaureate, etc.) (A1R685) (B1R685,C1R422, 41R)	1	1	1	1			4	0	0	0	0
5	A	1.3.2. Find thematic connections between your various choices of novels. (B1R688)	0	1	0	1			2	0	0	0	0

6	A	1.3.2.1. Consider teaching literature within a specific context (historical, psychological, etc.). (B1R691) (P2N)	0	1	0	1		2	0	0	0	0
7	A	1.3.3. Think about selecting a text that interests you as a teacher and that you might not have taught before. (B1R875) (P2N) (41R)	0	1	0	1		2	0	0	0	0
8	D	1.3.4. IF you are teaching a novel that you have already read, THEN review annotations and notes from last year to see if they remain applicable to your current students' abilities and background knowledge. (B1R865) (P2N)	0	1	0	1		2	0	0	0	0
9	D	1.3.5. IF you are teaching a new novel for the year, THEN strive to annotate and analyze novel ahead of students. Stay ahead of students' reading progress. (B1R877) (P2N)	0	1	0	1		2	0	0	0	0
10	A	1.3.6. Select ideas, themes, and issues within the novel that you would like to cover with students. (B1R805-807) (P2N)	0	1	0	1		2	0	0	0	0
11	A	1.3.7.1. List them on inside of the cover of your	0	1	0	1		2	0	0	0	0

		novel. (B1R1094) (P2N) (D1R)									
12	A	1.3.8. Assign color-coding to each feature and apply to list on the cover of your novel. (B1R1089) (P2N)	0	1	0	1	2	0	0	0	0
13	A	1.3.8.1. During your annotating of the novel, place matching color-coded sticky notes on pages within the novel where these ideas, themes, and issues are addressed. (B1R1088-1092) (P2N)	0	1	0	1	2	0	0	0	0
14	D	1.4. IF you choose to use a critical literary analysis as your reading text, THEN follow steps 1.2.1 to 1.2.6. (A1R, B1R, D1R)	1	1	0	1	3	0	0	0	0
15	A	1.4.1. Find piece of writing that is a critical literary analysis of the type of literature taught. (A1R182-183) (P1)	1	0	0	1	2	0	0	0	0
16	A	1.4.2. Search for critical literary analysis example from a suitable research database or MLA Bibliography Database. (A1R183, A2R) Examples of critical literary analysis might also be available from classroom textbooks. (A1R185)	1	0	0	1	2	0	0	0	0

		(P1)										
17	A	1.4.3. Choose an example of critical literary analysis that is approachable to a college senior, based on teacher judgment. (A1R184) (P1)	1	0	0	1	2	0	0	0	0
18	A	1.4.4. Choose an example of critical literary analysis that is not too technical. (A1R184) (P1)	1	0	0	1	2	0	0	0	0
19	A	1.4.5. Choose an example of critical literary analysis that is an academic analysis of a portion of the text taught during literature unit. (A1R185) (P1)	1	0	0	1	2	0	0	0	0
20	A	1.5. Within the first few weeks of the school year, plan to teach different writing modes (i.e. description, compare/contrast, narrative, or expository) and the appropriate context for their use. (C1R844-845) (P3N)	0	0	1	1	2	0	0	0	0

21	D	1.6. IF you choose to teach argumentative writing, rhetorical devices, particular writing skills, or are want to provide students a choice of topics, THEN follow steps 1.5.1 to 1.3.11.1. (C1R)	0	0	1	1		2	0	0	0	0
22	D	1.6.1. IF you are having students write an argumentative paper using a topical current event to stimulate making connections and choosing a side to argue, THEN choose articles that argue both sides of an argument. (C1R428-449) (P3N)	0	0	1	1		2	0	0	0	0
23	D	1.6.2. IF you need to teach rhetorical features, style structures, or particular skills that need to introduced or reviewed, THEN find and choose articles that exemplify these features. (31R428-449) (P3N)	0	0	1	1		2	0	0	0	0
24	D	1.6.3. IF writing assignment is student choice, THEN allow students the freedom to write on any topic they choose. (A1R834) You can give student choice writing assignments anytime during the school year. (C1R834) (P3N)	1	0	1	1		3	0	0	0	0

25	A	1.7. Collect or develop prompts for students to analyze the literary text assigned. (A1R, B1R, D1R) (P1, P2, P3)	1	1	0	1	3	0	0	0	0
26	D	1.7.1. IF students are reading literary text, THEN also assign a contemporary review of the novel. (A1R, B1R, C1R, D1R) (P1, P2, P3)	1	1	1	1	4	0	0	0	0
27	A	1.7.1.1. Choose or create prompts that ask students to explain or justify why they agree or disagree with the contemporary review using the novel for support. (A1R, B1R, C1R414-417) (P1)	1	1	1	1	4	0	0	0	0
28	A	1.7.2. Choose or create prompts using one or more of the following criteria. (A1R, B1R, C1R, D1R)(P1, P2, P3)	1	1	1	1	4	0	0	0	0
29	A	1.7.2.1. Find or develop writing questions or prompts based on ideas, themes, and issues to be covered during reading of text. (A1R266-279, B1R802-804, C1R693-694, D1R) (P1, P2, P3, 4)	1	1	1	1	4	0	0	0	0
30	A	1.7.2.2 Choose or create prompts that address character development. (B1R802) (P2N)	0	1	0	1	2	0	0	0	0

31	A	1.7.2.3. Choose or create prompts that address setting. (B1R1081) (P2N)	0	1	0	1		2	0	0	0	0
32	A	1.7.2.4. Choose or create prompts that address the historical context from which the literary piece is based. (B1R333, D1R) (P2N)	0	1	0	1		2	0	0	0	0
33	A	1.7.2.5. Choose or create prompts that address the historical context of when the literary piece was written and published. This context may also address current historical experience as compared to the literary piece. (B1R333, D1R) (P2N)	0	1	0	1		2	0	0	0	0
34	A	1.7.2.6. Choose or create prompts that address literary features. (B1R803) (P2N)	0	1	0	1		2	0	0	0	0
35	A	1.7.2.7. Choose or create prompts that address psychological trauma. (B1R804) (P2N)	0	1	0	1		2	0	0	0	0
36	A	1.7.2.8. Choose or create prompts that address universal feelings (i.e., betrayal, courage, compassion, etc.) (B1R554) (P2N)	0	1	0	1		2	0	0	0	0

37	A	1.7.3. Collect prompts from Internet sources or college course sources. (A1R238) If needed, reverse engineer prompts to make them work for your particular class. (AIR420, B1R820) (P1) (P2)	1	1	0	1		3	0	0	0	0
38	A	1.7.4. Prepare to walk students through the thought process that resulted in the prompt. (A1R420-449)	1	0	0	1		2	0	0	0	0
39	A	1.7.5. Allow students, with your prior approval (D1R), to come up with their own prompts that address the text. (B1R847) (P2N)	0	1	0	1		2	0	0	0	0
40	A	1.7.6. Prepare to provide instruction in prompt analysis using the prompts collected to give students practice in breaking apart writing prompts (See Procedure 5). (B1R240) (P2N)	0	1	0	1		2	0	0	0	0
41	D	1.7.7. IF you have a College Prep (CP) class, THEN prepare to provide scaffolding and direct instruction throughout unit to support students as progress through literature unit and writing assignment. (A1R,	1	0	1	1		3	0	0	0	0

		C1R1523) (P1, P3) (D1R)										
42	D	1.7.8. IF you have an Advanced Placement (AP) class, THEN consider providing less scaffolding and allow students more latitude in making their own writing choices. (A1R, C1R1500-1502) (P1, P3)	1	0	1	1	3	0	0	0	0
43	A	1.8. Create a rubric. (A1R, B1R, C1R, D1R)	1	1	1	1	4	0	0	0	0
44	A	1.8.1. Consider what rubric will be used to assess writing assignments. (A1R, B1R,C1R172-173) (P1, P2, P3)	1	1	1	1	4	0	0	0	0
45	A	1.8.2. Use lesson objectives to determine what gets assessed. (C1R171, D1R)(P3N)	0	0	1	1	2	0	0	0	0
46	D	1.8.2.1. IF you are assessing your students' thinking, THEN create a prompt that assess students' metacognitive processing used in developing their writing. (A1R172-173) (P3N) (41R)	1	0	1	1	3	0	0	0	0

47	D	1.8.2.2. IF you want to assess students' argumentation based on discussion held in class, THEN build rubric with students. (See steps 3.8) (31R692) (P3N)	0	0	1	1			2	0	0	0	0
48	A	1.8.3. Prepare to give rubric to students before writing begins. (B1R, C1R698, 708, D1R) (P2N, P3) (D1R)	0	1	1	1			3	0	0	0	0
		2. Procedure 2. Assess the student's prior writing knowledge. (A1R)					7	7					
1	A	2.1. By the third day of school, have students write to a prompt without guidance for one class period. (A1R140) (P1)	1	0	0	1			2	0	0	0	0
2	A	2.2. Collect papers and identify areas needing writing instruction as determined by teacher experience (based on academic level and age level of students) that will be addressed in future instruction. (A1R141, 144-148) (P1)	1	0	0	1			2	0	0	0	0
3	D	2.2.1. IF more than 70% of papers show particular area(s) needing improvement, THEN identify and list each area of needed improvement for future lessons. (A1R144-146) (P1)	1	0	0	1			2	0	0	0	0

4	D	12.2.2. IF less than 70% of papers have a particular area needing improvement, THEN consider revisiting these topics as time allows throughout year. (A1R144-146) (P1)	1	0	0	1	2	0	0	0	0
5	A	2.4. Review papers for grammatical errors (162-166) (A1R166, B1R, C1R, D1R) (P1)	1	1	1	1	4	0	0	0	0
6	D	2.4.1. IF a student's paper shows adequate knowledge of grammar, THEN paper will be handed back to student without comment regarding grammar.(A1R162) (P1)	1	0	0	1	2	0	0	0	0
7	D	2.4.2. IF an individual student's paper shows an overabundance of grammar mistakes, THEN teacher provides grammar instruction to individual students either through comments on paper or with a short conference when papers are handed back to students. (A1R163-165) (P1)	1	0	0	1	2	0	0	0	0

8	D	2.4.3. IF a preponderance of student writing show a need for a particular grammar topic to be reviewed, THEN explicitly review grammar topic in whole class instruction. (A1R163) (P1)	1	0	0	1		2	0	0	0	0
9	A	2.5. Consult list of areas of student writing that need improvement. Decide which can be best addressed in upcoming literature unit. (A1R201-202) (P1)	1	0	0	1		2	0	0	0	0
10	A	2.5.1. Choose 2-3 areas to cover during each writing instruction to teach within chosen literature unit. (A1R201) (P1) (41R~~N~~)	1	0	0	1		2	0	0	0	0
11	D	2.5.2. IF the literature text has background information that is unfamiliar to students, archaic language, and/or needs teacher scaffolding for comprehension, THEN choose fewer areas of needed improvement to cover during subsequent writing instruction. (A1R200-201) (P1)	1	0	0	1		2	0	0	0	0

12	D	2.5.3. IF literature unit has more familiar background information, modern languages, and/or needs less explanation for comprehension, THEN cover more areas of needed writing improvement during subsequent writing instruction. (A1R202-203) (P1)	1	0	0	1			2	0	0	0	0
13	A	2.6. Gather examples of student writing that exemplify areas of needed improvement and mentor texts that exemplify quality writing to use during writing instruction (see step 8.4). (A1R170-171, B1R, C1R, D1R) (P1, P2, P3)	1	1	1	1			4	0	0	0	0
14	A	2.7. Move into first literature unit as prescribed by grade level or site pacing. (A1R182, B1R, C1R, D1R) (P1, P2, P3)	1	1	1	1			4	0	0	0	0
		3. Procedure 3. **Implement Literature Unit. (A1R, B1R, C1R)**					62	9					
1	A	3.1. Assign text (article, blog, novel, etc.) for students to begin reading. (A1R182, B1R1188, C1R 193, D1R)	1	1	1	1			4	0	0	0	0
2	A	3.2. Define for students that the term “text” may refer to any written work. (C1R193-194)	0	0	1	1			2	0	0	0	0

		(P3N)										
3	A	3.2.1. Instruct students to use text to gather ideas throughout reading of text. (A1R, B1R, C1R199)	1	1	1	1	4	0	0	0	0
4	A	3.2.2. Guide students through class discussion on making connections between these gathered thoughts and ideas and to what they are reading. (C1R195) (P3N)	0	0	1	1	2	0	0	0	0
5	A	3.2.2.1. Discuss with students that connections between what they have gathered and those within the assigned text can be made in the following ways (C1R201-202) (P3N)	0	0	1	1	2	0	0	0	0
6	A	3.2.3. Discuss with students how these connected ideas can create new ideas. (C1R201) Model this by taking your own thoughts, ideas, and observations and connect them to the readings assigned or to what you might be reading personally at the time. (C1R198) (P3N)	0	0	1	1	2	0	0	0	0

7	D	3.3. IF you are using a novel as your reading text, THEN provide students a copy of novel. (B1R717) (P2N) Encourage students to procure their own personal copy. (41R)(4N)	0	1	0	1		2	0	0	0	0
8	A	3.3.2. Before beginning to read the novel, pass out to students a list of prompts from which they can choose to write. (B1R197) Tell students, "Start thinking about which prompts you might want to write to and start collecting your evidence now." (B1R200-202) (P2N)	0	1	0	1		2	0	0	0	0
9	A	3.3.3. Pass out rubric at this time that will be used to assess the final paper unless you are creating one with students (see step 3.8). The rubric created with students will be developed before writing instruction begins. (B1R1056, C1R, D1R) (P2N)	0	1	1	1		3	0	0	0	0
10	A	3.3.5. Think about reading the novel whole-class. (B1R1190) (P2N)	0	1	0	1		2	0	0	0	0

11	D	3.4. IF you are using a critical analysis of a literary work as your reading text, THEN provide students a copy. (A1R175-177, B1R1313, C1R414-417) (P1, P2, P3)	1	1	1	1		4	0	0	0	0
12	A	3.4.1. Tell students that critical essays provide someone else's words and arguments to help support what you will be saying about the novel. (B1R1401) (P2N)	0	1	0	1		2	0	0	0	0
13	A	3.5. As you read, remember to constantly assess student knowledge of the subject/topics/themes being discussed. Assess students explicitly if they understand what is being discussed. (A1R, B1R271) (P1, P2)	1	1	0	1		3	0	0	0	0
14	A	3.5.1. Use quizzes, objective tests, short answer responses, or on-demand writing assignments. (41R)(4N)	0	0	0	1		1	0	0	0	0
15	A	3.5.2. Have students respond to a prompt writing their response in the form of a body paragraph. (see step 8.11) Students submit a paragraph and then are required to respond to at least	0	1	0	1		2	0	0	0	0

		two other student submissions. (B1R91) (P2N)										
16	A	3.5.3. Look for evidence through monitoring discussion and discussion board submissions that students are thinking deeply about the novel. B1R, D1R) (P2N)	0	1	0	1	2	0	0	0	0
17	A	3.5.4. Use class discussion, tests, quizzes. short answer response, and on-demand writing assignments to help students develop thinking in the following ways: (B1R, 41R)(P2, 4)	0	1	0	1	2	0	0	0	0
18	A	3.5.4.1. Help students develop deeper thinking in the lives of the characters; (B1R328) (P2N)	0	1	0	1	2	0	0	0	0
19	A	3.5.4.2. Help students develop deeper thinking in the emotions of the characters; (B1R328) (P2N)	0	1	0	1	2	0	0	0	0
20	A	3.5.4.3. Help students develop deeper thinking in the psychological development of the characters. (B1R329) (P2N)	0	1	0	1	2	0	0	0	0

21	A	3.5.4.4. Help students develop deeper thinking in Contextual analysis. (B2R329) (P2N)	0	1	0	1	2	0	0	0	0
22	A	3.5.4.5. Help students develop deeper thinking in the influence of setting on characters. (B2R329) (P2N)	0	1	0	1	2	0	0	0	0
23	A	3.5.4.6. Help students see that they must connect the characters with today's world or the story's context or their writing becomes superficial. (B1R334) (P2N)	0	1	0	1	2	0	0	0	0
24	A	3.5.5. Discuss with students the big ideas identified during reading of the novel. (A1R, B1R221, D1R) (P1, P2, 4)	1	1	0	1	3	0	0	0	0
25	A	3.5.6. Be ready for diversions in class conversations as students take discussion in different directions. (B1R222) (P2N)	0	1	0	1	2	0	0	0	0
26	A	3.6. Model annotation of literary text with students. (A1R, B1R903, C1R)	1	1	1	1	4	0	0	0	0
27	A	3.6.1. Model Naked Reading as an annotation strategy with students. Take an unmarked page with no annotations and model Naked Reading. Naked Reading is showing to students	0	1	0	1	2	0	0	0	0

		how you, as a reader, read a page for the first time. (B1R892-897) (P2N)										
28	A	3.6.1.1. Think out loud to students as you hold discussion between yourself and the text about what inspires you within the page being read. (B1R893, 901, C1R) (P2N, P3)	0	1	1	1	3	0	0	0	0
29	A	3.6.2. Instruct students to annotate create a color code list inside cover of their novels. (B2R375) (P2N)	0	1	0	1	2	0	0	0	0
30	A	3.6.2.1. Students annotate their novels and the critical essays using sticky notes and color coding. (B1R374-375) (P2N)	0	1	0	1	2	0	0	0	0
31	A	3.6.2.2. Provide to students or have them bring sticky notes and highlighters to color code their annotations. (D1R)(4N)	0	0	0	1	1	0	0	0	0
32	A	3.6.3. Work with students during reading to identify those concrete details or literary features of the story's themes (pre-identified by you during planning phase) that will be useful in answering the prompts	0	1	0	1	2	0	0	0	0

		assigned or chosen by students. (B1R1168) (P2N)									
33	D	3.6.3.1. IF a prompt addresses literary features within the novel, THEN students will identify and highlight instances where these features manifest themselves in the novel. (B1R1132) (P2N)	0	1	0	1	2	0	0	0	0
34	D	3.6.3.2. IF a prompt addresses a theme or motif within the novel, THEN students will identify concrete details that exemplify this theme. (B1R1130) (P2N)	0	1	0	1	2	0	0	0	0
35	D	3.7. IF you are using a critical literary essay as your text, THEN do the following: (A1R, B1R, D1R)	1	1	0	1	3	0	0	0	0
36	A	3.7.1. Discuss with students how critical literary analysis piece incorporates literature into written argument. (A1R176) (P1)	1	0	0	1	2	0	0	0	0
37	A	3.7.2. Give instruction on the elements that make this literary analysis piece a good writing	1	0	0	1	2	0	0	0	0

		example. (A1R246) (P1)									
38	A	3.7.3. Direct students to keep literary analysis piece as a job aid for future writing assignments throughout year. (A1R191-192) (P1)	1	0	0	1	2	0	0	0	0
39	A	3.7.4. Work with students to find the following from the critical essays assigned: (A1R, B1R, D1R)	1	1	0	1	3	0	0	0	0
40	A	3.7.4.1. Find evidence supporting writer's claims. (A1R, B1R1367, D1R) (P1, P2)	1	1	0	1	3	0	0	0	0
41	A	3.7.4.2. Find counterarguments from essays to give students perspectives they might not have considered yet. (A1R, B1R1404) (P1, P2)	1	1	0	1	3	0	0	0	0
42	A	3.7.4.3. Ask students to consider if the critic has said something that the student can use to support their own thesis. (B1R1405) (P2N)	0	1	0	1	2	0	0	0	0
43	A	3.7.5. Have students color code what the literary critic said about the text as it relates to the prompt. (B1R1314) (P2N) (41R)	0	1	0	1	2	0	0	0	0

44	A	3.7.6. As an alternative annotation strategy, teach students how to annotate using SOAPSTone. (P3N)	0	0	1	1		2	0	0	0	0
45	A	3.7.7 Teach students in the beginning of the school year how to use SOAPSTone. (C1R941) (P3N)	0	0	1	1		2	0	0	0	0
46	A	3.7.8. Use visual aids such as photography or artwork to introduce SOAPSTone to students. (C1R962) (P3N)	0	0	1	1		2	0	0	0	0
47	A	3.7.8.1. Provide examples of photographs or art for students to analyze. Discuss with students the choices the photographer makes while applying SOAPSTone as an analytic framework. (C1R963) (P3N)	0	0	1	1		2	0	0	0	0
48	A	3.7.9. Once this has been practiced, guide students in applying SOAPSTone at the textual level. (C1R966) (P3N)	0	0	1	1		2	0	0	0	0
49	D	3.8. IF students are writing an argumentative paper responding to arguments in opinion pieces, THEN do the following: (P3N) (41R)	0	0	1	1		2	0	0	0	0

50	A	3.8.1. Ask students to find and read opinion pieces with different takes on the same subject. (C1R871-872, 883) (P3N)	0	0	1	1	2	0	0	0	0
51	A	3.8.2. Assign students to write on that subject by taking a side using those sources to support their argument. (C1R388-392) (P3N)	0	0	1	1	2	0	0	0	0
52	A	3.8.3. Tell students to find articles that support counterclaims or counter arguments to the stand they have chosen. (C1R896-897) (P3N)	0	0	1	1	2	0	0	0	0
53	D	3.9. IF you want to assess student writers' knowledge of argumentation, THEN build a rubric with students using the following questions to stimulate discussion (see procedure 3.2.3): (31R) (3N)	0	0	1	1	2	0	0	0	0
54	A	3.9.1. While building the rubric, ask students, "What did we just learn about argumentative writing?" (31R)	0	0	1	1	2	0	0	0	0
55	A	3.9.2. Ask students, "What shall we expect in this paper?" (31R)	0	0	1	1	2	0	0	0	0

56	A	3.9.3. Ask students, “What should that look like?”(C1R693-696) (P3N)	0	0	1	1		2	0	0	0	0
57	D	3.10. IF students are reading articles as examples of rhetorical devices, THEN work with the class to identify and analyze the rhetorical device. (P3N)	0	0	1	1		2	0	0	0	0
58	A	3.10.1. Have students analyze how that rhetorical device contributes to or creates the author’s purpose. (C1R1001) (P3N)	0	0	1	1		2	0	0	0	0
59	A	3.10.2. Have students analyze how that rhetorical device helps connect the article to the audience. (C1R1001) (P3N)	0	0	1	1		2	0	0	0	0
60	A	3.10.3. Have students analyze how that rhetorical device connects readers to the pathos (emotional appeal), ethos (ethical appeal), or logos (logical appeal) of the article and its effect on the text. (C1R456, C2R) (P3N)	0	0	1	1		2	0	0	0	0

61	D	3.11. IF students are struggling with a particular writing skill (i.e., transitions, theme, narrative, etc.), THEN have students read articles that contain examples of this skill and analyze its use and effect in the text. (C1R456-458, C2R) (P3N)	0	0	1	1		2	0	0	0	0
62	A	3.12. Consider blogging (see procedure 12) for students to use as an additional writing exercise (P3N)	0	0	1	1		2	0	0	0	0
63	A	3.12.2. Instruct students to keep a notebook of themes and ideas they learn from reading various texts. (31R)(3N)	0	0	1	1		2	0	0	0	0
64	A	3.13. Teach students to discover their own needs within their writing by asking the following questions. (C1R488) (P3N)	0	0	1	1		2	0	0	0	0
65	A	3.13.1. Teach them to ask, “What are you learning from other writers?” (C1R494) (P3N)	0	0	1	1		2	0	0	0	0
66	A	3.13.2. Teach them to ask, “What do I notice that the writer does in the article (book, novel, etc.)?” (C1R469) (P3N)	0	0	1	1		2	0	0	0	0

67	A	3.13.3. Teach them to ask, "How does the writer accomplish this? (C1R469) (P3N)	0	0	1	1			2	0	0	0	0
68	A	3.13.4. Teach them to ask, "What can I take from this article? What can I learn from the author?" (C1R470) (P3N)	0	0	1	1			2	0	0	0	0
69	A	3.13.5. Teach them to ask, "What can you do in your writing? Did the writer conform to standard writing conventions, or did he/she break the rules? Does it work in the article?" (C1R496, C2R) (P3N)	0	0	1	1			2	0	0	0	0
70	A	3.13.6. Teach them to ask, "What did the writer craft in his/her article that surprised you?" (C1R496, C2R) (P3N)	0	0	1	1			2	0	0	0	0
71	A	3.13.7. Teach them to ask themselves, "What does the writer want you to know?" (4N)	0	0	0	1			1	0	0	0	0
		Procedure 4. Present topic as a problem. (A1R361-363)					18	4					
1	A	4.1. Tell students that an essay is a physical manifestation of a thought. (A1R26) Convey to students that writing an essay is a demonstration of a problem through writing and the solution	1	0	1	1			3	0	0	0	0

		comes from thinking. (A1R278-279, C1R143) (P1) (P3)											
2	A	4.2. Instruct students that they can learn to write better by what they read. (C1R498) (3PN)	0	0	1	1		2	0	0	0	0
3	A	4.3 Use Socratic Questioning (SQ) to lead students to ideas, thoughts, and values applicable to coming up with a answering a question or choosing a side in an argument. (A1R266-267) (P1)	1	0	0	1		2	0	0	0	0
4	A	4.4. Determine when to begin Socratic Questioning (SQ) and developing a question to address in an essay. Decide whether this brainstorm discussion comes before, during, or after the literature unit. (A1R282-299, A1R334-347) (P1)	1	0	0	1		2	0	0	0	0
5	D	4.5. IF you are teaching literature units in the beginning of the school year, THEN engage in SQ and brainstorming after completing a literature unit. (A1R284) (P1)	1	0	0	1		2	0	0	0	0

6	D	4.6. IF you are teaching literature units in the middle of the school year, THEN engage in SQ and brainstorming during the literature unit with less frontloading and scaffolding. (A1R282) (P1)	1	0	0	1	2	0	0	0	0
7	D	4.7. IF you are teaching literature units around springtime (2nd semester), THEN engage in SQ and brainstorming at the beginning of the literature unit. (A1R282) (P1)	1	0	0	1	2	0	0	0	0
8	D	4.8. IF you are teaching literature units around springtime (2nd semester), THEN engage in SQ and brainstorming at the beginning of the literature unit. (A1R282) (P1)	1	0	0	1	2	0	0	0	0
9	A	4.8.1. Engage in Socratic Questioning by asking students, “What values might be important in the culture within the literary text?” (A1R269) (P1)	1	0	0	1	2	0	0	0	0
10	A	4.8.2. Ask students, “How is this apparent to the student?” (A1R271) (P1	1	0	0	1	2	0	0	0	0

11	A	4.8.3. Ask students, “How is this defended?” (A1R272P1)	1	0	0	1	2	0	0	0	0
12	A	4.8.4. Ask students, “How do you find examples in the text?” (A1R272) (P1)	1	0	0	1	2	0	0	0	0
13	A	4.8.5. Ask students, “How do you find counterexamples?” (A1R274) (P1)	1	0	0	1	2	0	0	0	0
14	A	4.8.6. Ask students, “Why would this be a good writing technique?” (A1R274) (P1)	1	0	0	1	2	0	0	0	0
15	A	4.8.7. Ask students, “How does this strengthen your argument?” (A1R276) (P1)	1	0	0	1	2	0	0	0	0
16	A	4.9. Engage in this brainstorming discussion on text just read for about ½ half a class period. (A1R276) (P1)	1	0	0	1	2	0	0	0	0
17	A	4.10. Use SQ and brainstorming to come up with a central idea. (A1R620, D1R) A central idea is a short 2-3 sentence description of what the student author is trying to say. (P1)	1	0	0	1	2	0	0	0	0
18	A	4.10.1. Consider using the term central idea rather than thesis statement, especially for struggling writers. (A1R630, D1R) (P1)	1	0	0	1	2	0	0	0	0

19	A	4.11. Demonstrate to students that brainstorming and Socratic Questioning are ways of thinking that lead to a question that can be responded to through writing an expository piece. (A1R277) (P1) (C1R148) (P3)	1	0	1	1			3	0	0	0	0
20	A	4.12. Take ideas developed during brainstorming and get them down on paper. (C1R150-151) (P3N)	0	0	1	1			2	0	0	0	0
21	A	4.12.1. Instruct students to engage in Zero Drafting. Zero Drafting is a strategy of allowing students to write without thought of editing or limitations. Students are allowed to write anything-answer prompt, begin a novel, write a journal entry, write poetry-to stimulate ideas and encourage writing.	0	0	1	1			2	0	0	0	0
22	A	4.12.1.1. Model Zero Drafting with students and discuss your choices in your own writing. (C1R1084-1087) (P3N)	0	0	1	1			2	0	0	0	0
		5. Procedure 5. Introduce Prompt/ Prompt Analysis. (A1R, B1R)					15	0					

1	A	5.1. Demonstrate to students the questions and authentic thinking that led to the creation of prompts. (A1R420-449) (P1)	1	0	0	1			2	0	0	0	0
2	A	5.2. Discuss with students that writing prompts can be used to set up the structure of an essay. (B1R232) (P2N)	0	1	0	1			2	0	0	0	0
3	A	5.3. Discuss with class each prompt choice for the novel to be read. (B1R392) (P2N)	0	1	0	1			2	0	0	0	0
4	A	5.3.1. Show students that writing prompts can be broken down so that they can help in developing the paper to be written. (B1R)(P2N)	0	1	0	1			2	0	0	0	0
5	A	5.3.2. Analyze the writing prompt to see if it can show how the thesis should look. (B1R233) The thesis or central idea is the question from the prompt that students need to answer. (B1R1027) (P2N)	0	1	0	1			2	0	0	0	0
6	A	5.3.3. Analyze the writing prompt to see if it identifies the topics of the body paragraphs. (B1R234) These are the arguable thesis statements derived from the main thesis of the paper. (B1R1030) (P2N)	0	1	0	1			2	0	0	0	0

7	A	5.3.4. Analyze the writing prompt to see if it can identify what must be included in the conclusion. (B1R235) (P2N)	0	1	0	1		2	0	0	0	0
8	A	5.4. Have students begin color coding the writing prompt of their choice. (B1R1004) (P2N)	0	1	0	1		2	0	0	0	0
9	A	5.5. Use different colors for each of the following steps. (B1R1005) (P2N)	0	1	0	1		2	0	0	0	0
10	A	5.5.2. Have students highlight the verbs within prompt. (B1R1007) (P2N)	0	1	0	1		2	0	0	0	0
11	A	5.5.3. Have students highlight the writing task. (B1R1007) (P2N)	0	1	0	1		2	0	0	0	0
12	A	5.5.4. Have students highlight the textual situation presented in the prompt. Textual situations are often included by prompt writers to help the students think critically and provide focus about the prompt. (B1R1007, B2R) (P2N)	0	1	0	1		2	0	0	0	0
13	A	5.5.5. Determine together as a class if the prompt they have chosen sets up the scene to be discussed in the paper. (B1R1013) (P2N)	0	1	0	1		2	0	0	0	0

14	A	5.5.6. Have students highlight the parts that make an arguable thesis statement. These drive the formation of the body paragraphs. (B1R1029) (P2N)	0	1	0	1			2	0	0	0	0
15	A	5.5.7. Have students highlight within prompt what is going into the conclusion. (B1R1045) (P2N) Each prompt may or may not provide this information. (41R)(4N)	0	1	0	1			2	0	0	0	0
		6. Procedure 6. Provide Feedback from Diagnostic Papers. (A1R)					10	2					
1	A	6.1. Prepare to present to students examples from diagnostic writing piece that shows areas needing improvement (from step 2.6). (A1R247) (P1)	1	0	0	1			2	0	0	0	0
2	A	6.2. Show examples from diagnostic papers (see Procedure 2) of areas that need improvement. (A1R172, 243) (P1)	1	0	0	1			2	0	0	0	0
3	A	6.2.1. Provide suggestions and approaches on how students can fix these areas of concern. Tell students, “These are examples from your papers, and here are some ways you can fix them.	1	0	0	1			2	0	0	0	0

		(A1R243) (P1)										
4	A	6.2.1.1. Consider providing students an editing checklist and have them assess student work as a whole class assignment. (D1R)(4N	0	0	0	1	1	0	0	0	0
5	A	6.3. Use discussion to show students they can improve future writing pieces. (A1R344) (P1)	1	0	0	1	2	0	0	0	0
6	A	6.4. Let students know that they will begin writing their papers the next day and should keep these suggestions and approaches in mind as they write. (A1R231) (P1)	1	0	0	1	2	0	0	0	0
7	A	6.5. Remind students that a thesis statement is the main argument and has 3 parts. (A1R689)(P1)	1	0	0	1	2	0	0	0	0
8	A	6.5.1. Instruct students that their paper needs a clear designation of what it is the student writer is going to talk about. (A1R690)(P1)	1	0	0	1	2	0	0	0	0

9	A	6.5.2. Instruct students that their paper is making a clear judgment about something (A1R691)(P1)	1	0	0	1			2	0	0	0	0
10	A	6.5.3. Instruct students that their paper has chosen a side to support and that it needs to be meaningful in some way. (A1R691)(P1)	1	0	0	1			2	0	0	0	0
11	D	6.6. IF students are in AP class, THEN these three parts are given more direct emphasis. (A1R686) (P1)	1	0	0	1			2	0	0	0	0
12	D	6.7. IF students are in a CP class, THEN the instructor attempts to guide students towards this goal. (A1R687) (P1)	1	0	0	1			2	0	0	0	0
		7. Procedure 7. Construct Essay Outline (P2N, 41R)					5	0					
1	A	7.1. Students begin to outline their essay. (B1R362)(41R)	0	1	0	1			2	0	0	0	0
2	A	7.2. Consider allowing students to get together in groups of 3-4 who are working on the same prompt to work collaboratively. (B1R359-360) (P2N) They support one another as they find concrete details and literary features to address their prompt.	0	1	1	1			3	0	0	0	0

		(B1R363) (P2N) (C1R542)(P3)											
3	A	7.3. Have students take the results from prompt analysis and identify the body paragraphs. (B1R366) (P2N)	0	1	0	1			2	0	0	0	0
4	A	7.4. Have students find the concrete details they will use in each body paragraph and insert into outline. (B1R367, 406) (P2N)	0	1	0	1			2	0	0	0	0
5	A	7.5. Have students write into the outline what they are going to say about the concrete details (commentary). (B1R369) (P2N)	0	1	0	1			2	0	0	0	0
		8. Procedure 8. Provide Writing Instruction. (A1R, B1R, C1R, 41R)					49	2					
1	A	8.1. Introduce rhetorical features, style structures, or skills that you have decided to cover for this writing piece (see step 1.3.4). (C1R695)(P3N) critical analysis in essays	0	0	1	1			2	0	0	0	0

2	A	8.2. Remind students what is expected in each paper based on instruction given and the rubric used to assess. (B1R1056)(P2N) (C1R707)(P3)	0	1	1	1		3	0	0	0	0
3	A	8.2.1. Tell students that papers will be assessed according to their response to the prompt along with discussion of articles, novels, or other texts which have been notated in student notebooks (see step 1.10). (C1R693-694) (P3N)	0	0	1	1		2	0	0	0	0
4	A	8.3. Review prompts with students so they know those requirements that are needed for a good paper. (B1R, C1R707) (P2, P3)	0	1	1	1		3	0	0	0	0
5	A	8.4. Show students models of exemplary essays or mentor texts (see step 2.7). Discuss with students each exemplary essay and how the claims are addressed. (B1R425, C1R1209) (P2N) (P3)	0	1	1	1		3	0	0	0	0
6	A	8.4.2. Have students identify what the writer has done well and think about how they as writers begin to move towards that goal. (C1R1178)(P3N)	0	0	1	1		2	0	0	0	0

7	A	8.4.3. Have students begin writing everything they want to say to the topic being made within the assigned text. (C1R513) (P3N)	0	0	1	1		2	0	0	0	0
8	A	8.5. Ask students to look back and decide if they have said what they wanted to say. (C1R515) (P3N)	0	0	1	1		2	0	0	0	0
9	A	8.6. Begin to write body paragraphs. (P1) (P2) (P3) (4)	1	1	1	1		4	0	0	0	0
10	A	8.6.1. Pull class together for whole-group discussion on creating arguable topic sentences using the concrete details previously found. They are also referred to as thesis statements. (B1R521) (P2N)	0	1	0	1		2	0	0	0	0
11	A	8.6.2. Have discussion with the class about what the arguable topic sentences say and what the writer is going to say about them. (B1R416-417) (P2N)	0	1	0	1		2	0	0	0	0
12	A	8.6.3. Provide support to students by checking for a thesis statement. (A1R467, B1R1521)(P1, P2)	1	1	0	1		3	0	0	0	0

13	A	8.7. Remind students that each body paragraph should begin with a topic sentence, followed by concrete details that support the topic sentence, and a concluding sentence to wrap up what has just been said and point to the next paragraph in the essay. (A1R583, B1R462,C2R466)(P1) (P2) (P3)	1	1	1	1		4	0	0	0	0
14	A	8.7.1. Provide support by helping them find examples, support from text, or support from secondary sources (if applicable). (A1R469, 558-559) Students may know the term "support from text" as concrete details, or details that can be found directly within a text. (A1R583, B1R462) (P1) (P2)	1	1	0	1		3	0	0	0	0
15	A	8.7.2. Support students by helping them identify or narrow their central idea or argument. (A1R470) (P1)	1	0	0	1		2	0	0	0	0
16	A	8.7.3. Check how all the elements noted above are incorporated into the text. (A1R559-560) (P1)	1	0	0	1		2	0	0	0	0
17	A	8.7.4. Instruct students that they may choose the structure of	1	0	0	1		2	0	0	0	0

		their body paragraphs. (B1R466) (P2N)										
18	A	8.7.5. Tell students that they may deviate from this format as they see the need to add explanation or to set up a scene from the novel. (B1R467, B2R) (P2N)	0	1	0	1	2	0	1	0	0
19	A	8.7.6. Tell students to make their structure flow in a natural way that makes sense to them. (B1R456) (P2N)	0	1	0	1	2	0	0	0	0
20	A	8.7.7. Refrain from providing concrete guidelines in the amount of quotes or support needed by students in writing an argument. Tell them they have the responsibility to use enough textual support to your point. (A1R561-563, B1R1430) (P1) (P2)	1	1	0	1	3	0	0	0	0
21	A	8.7.8. Tell students to review thesis statements for rewriting or revision as they complete body paragraphs. (B1R2298)(P2N)	0	1	0	1	2	0	0	0	0
22	A	8.8. Begin to write conclusion. (B1R539)(P2N)	0	1	0	1	2	0	0	0	0

23	A	8.8.1. Tell students that their prompt will often tell them what type of conclusion to write. (B1R542) (P2N)	0	1	0	1		2	0	0	0	0
24	D	8.8.1.1. IF the prompt has a question that asks students to reflect or gives students a task to do within their writing, THEN this question, once restated, becomes the basis for the conclusion. (B1R1678-1682) (P2N)	0	1	0	1		2	0	0	0	0
25	D	8.8.1.2. IF the prompt does give a task to do or is the task is more open-ended, THEN the prompt has not indicated what the conclusion should be. This would then require a more formal conclusion which entails a restating of the introduction. (B1R1682-1684) The Common Core writing rubric can help guide instruction a more formal conclusion. (B1R1703-1704) (P2N)	0	1	0	1		2	0	0	0	0
26	A	8.8.2. Encourage students to avoid the phrase, “In conclusion.” (B1R547) (P2N)	0	1	0	1		2	0	0	0	0

27	A	8.8.3. Instruct students that a formal conclusion is the reverse of the introduction but is not an exact copy. The conclusion is a restatement of what is said in the essay, but with a more reflective look at the significance of the thesis. (B1R1700-1702) (P2N)	0	1	0	1	2	0	0	0	0
28	A	8.8.4. In writing a more formal conclusion, tell students to begin with a restatement of their thesis in a differently from what was written in the introduction. (B1R566, 1734) (P2N)	0	1	0	1	2	0	0	0	0
29	A	8.8.5. Tell students to restate the points or claims made in the body paragraphs. (B1R1734) (P2N)	0	1	0	1	2	0	0	0	0
30	A	8.8.5.1. Tell students that the last statement of the conclusion is a larger statement that is more universal and addresses the theme of the paper. (B1R567-568, 1734) (P2N)	0	1	0	1	2	0	0	0	0
31	A	8.9. Begin to write introductory paragraph as the last step in completing draft. (B1R1904)(P2N) (C1R537-538) (P2N, P3)	0	1	1	1	3	0	0	0	0

32	A	8.9.2. Tell students that an introductory paragraph may start with a broad general thematic statement sentence that has to do with the topic or theme at hand. (B1R550-551, 1896, B2R) This is common but not required. Students may choose to move their general thematic statement further into the paragraph. (B1R1898) (P2N) (C1R538)(P3)	0	1	1	1		3	0	0	0	0
33	A	8.9.3. Tell students that the first sentence could also be a theme statement. Theme statements do not mention the novel at all. They are universal statements that pertain to people. (B1R552-554) (P2N)	0	1	0	1		2	0	0	0	0
34	A	8.9.4. Tell students that the next sentence is narrowed down to the particular text, novel, or characters being discussed. (B1R554)(P2N)	0	1	0	1		2	0	0	0	0
35	A	8.9.5. Tell students that the next sentence is the thesis, or the main argument of the writing piece. (B1R557) (P2N)	0	1	0	1		2	0	0	0	0

36	A	8.9.6. Instruct students that in writing an introductory paragraph, the writing starts with a broad, universal statement which narrows to the thesis which is exactly what the paper is going to talk about. (B1R556-558) (P2N)	0	1	0	1		2	0	0	0	0
37	A	8.10. Provide additional instruction to class on revising and improving papers before engaging in Writers Workshop. (41R)(4N)	0	0	0	1		1	0	0	0	0
38	A	8.11. Instruct students on the use of linkages and transitions between sentences and paragraphs. (B1R1944)	0	1	0	1		2	0	0	0	0
39	A	8.11.1. Tell students that transition words are used to link sentences or ideas within paragraphs. (A1R) (B1R1961)	1	1	0	1		3	0	0	0	0
40	A	8.12. Tell students that linkages connect paragraphs to each other. Linkages occur when a writer takes a few words from the last sentence of a paragraph and uses those same words in the first sentence of the next paragraph. (B1R1944)	0	1	0	1		2	0	0	0	0

41	A	8.13. Consider providing additional instruction in the use of SOAPSTone (see procedure 2) as a strategy for students to review their own writing. (C1R)(P3N)	0	0	1	1		2	0	0	0	0
42	A	8.13.1. Tell students that, as writers, they should consider SOAPSTone as criteria for their own writing. (C1R1004) (P3N)	0	0	1	1		2	0	0	0	0
43	A	8.13.2. Instruct students that the SOAPSTone criteria guide the decisions they make in an essay or text (C1R1005) (P3N) SOAPSTone can help guide writers in their efforts to convey meaning or improve writing voice. (C1R847-848)	0	0	1	1		2	0	0	0	0
44	A	8.13.3. Use writing devices (i.e. narrative, anecdote, etc.) to soften or illustrate a point when providing commentary in their writing. (C2R847) (P3N)	0	0	1	1		2	0	0	0	0
45	A	8.13.3.1. Use comparisons that help to define or describe. (C2R847) (P3N)	0	0	1	1		2	0	0	0	0
46	A	8.13.3.2. Concentrate on the flow and rhythm of the writing as it is read by the reader. (C2R847) (P3N)	0	0	1	1		2	0	0	0	0

47	A	8.13.4. Guide students in analyzing their writing to make their sentences less complex or obtuse. (C1R1538) Work with students to do the following: (P3N	0	0	1	1			2	0	0	0	0
48	A	8.13.5. Review verb usage by having students think about the ratio of passive verbs to active verbs without affecting meaning. (C2R)(P3N)	0	0	1	1			2	0	0	1	0
49	A	8.13.6. Have students check the ratio of descriptive nouns to abstract nouns. (C2R)(P3N)	0	0	1	1			2	0	0	0	0
50	A	8.13.7. Review the number and variety of words in each sentence. (C1R1548)(P3N)	0	0	1	1			2	0	0	0	0
51	A	8.13.8. Instruct students to consider the rhythm within the structure of their paragraph. Discuss with students if longer, passive sentences convey the same message as shorter, more direct sentences. (C1R1548) (P3N)	0	0	1	1			2	0	0	0	0
		Procedure 9. Conduct Writing Workshop (P1) (P2) (P3)					45	11					
1	A	9.1. Give students time to write. Give time based on assignment length (2-7 days). (A1R456,	1	1	1	1			4	0	0	0	0

		464-465, B1R1416, C1R)(P1, P2, P3)											
2	D	9.1.2. IF a student is in an AP class, THEN all papers completed during 2nd semester are timed in-class writing in preparation for the upcoming AP test. (A1R549-552, B1R, C1R, D1R) (P1, P2, P3)	1	1	1	1			4	0	0	0	0
3	A	9.2. Circulate during Writer's Workshop and provide oral feedback and individualized instruction as needed. (A1R468, B1R481, C1R316-317) (P1) (P2) (P3)	1	1	1	1			4	0	0	0	0
4	A	9.2.1. Gauge student understanding of expectations. Be prepared to provide additional instruction to correct misunderstandings or to provide more practice with a particular skill. (C1R713) (P3N)	0	0	1	1			2	0	0	0	0
5	D	9.2.2. IF misunderstandings or need for additional instruction limit their ability write a quality paper, THEN stop and address the additional topic before moving on in the writing process. (C1R714)(P3N)	0	0	1	1			2	0	0	0	0

6	D	9.3. IF misunderstandings or need for additional instruction do not limit the students' ability to write a quality paper, THEN cover this additional topic sometime during the draft writing. (C1R715)(P3N)	0	0	1	1	2	0	0	0	0
7	A	9.3.1. Check first body paragraphs during Writers Workshop. (A1R468) (P1)	1	0	0	1	2	0	0	0	0
8	D	9.4. IF students are comfortable with the direction of their drafts and have shown you they are capable writers (based on past assignments), THEN leave students alone to write. (A1R474) Spot-check writing as you circulate if possible. (A1R512, B1R1416, C1R585) (P1) (P3)	1	1	1	1	4	0	0	0	0
9	D	9.5. IF students lack confidence or have shown they need more support, THEN these students are required to bring every completed paragraph to you for review. (A1R476, 509) (P1) (C1R286-289)(P3)	1	0	1	1	3	0	0	0	0
10	A	9.6. Have students engage in peer review during writer's workshop. (A1R, B1R, C1R)	1	1	1	1	4	0	0	0	0

		(P1, P2, P3)									
11	A	9.6.1. Allow students during writing workshop to support one another or provide peer reflection during this part of assignment. You may follow an informal, semiformal, or formal peer review process. (A1R) (P1)	1	0	0	1	2	0	0	0	0
12	D	9.7. IF you want students to engage in some peer review of papers, THEN follow the semiformal peer review process in steps 9.7.1 to 9.7.4.2. (B1R2151)(P2N	0	1	0	1	2	0	0	0	0
13	A	9.7.1. Have students peer review each other's drafts. (A1R580) Students may be grouped together by the teacher or by student choice. (B1R2153)(P2N) (C1R238)(P3) This process will occur twice during each writing unit. (C1R241,325)(P3N)	0	1	1	1	3	0	0	0	0

14	A	9.7.2. Consider pairing up weak writers with strong writers who would be willing to work with another student in providing support. (B1R2156) This happens as you figure out the skills and personality characteristics of each student. (A1R541-542, B1R2156) (P1)(P2)	1	1	0	1		3	0	0	0	0
15	A	9.7.3. During peer review, have students review the following as peer editors. (P2N)	0	1	0	1		2	0	0	0	0
16	A	9.7.3.1. Have students determine if writer has answered the prompt; (B12)(P2N)	0	1	0	1		2	0	1	0	0
17	A	9.7.3.2. Have students determine if writer has written effective transitions between sentences within paragraphs; (B2R)(P2N)	0	1	0	1		2	0	1	0	0
18	A	9.7.3.3. Have students determine if writer has written effective transitions between paragraphs; (B2R)(P2N)	0	1	0	1		2	0	1	0	0
19	A	9.7.3.4. Have students determine if writer has written an effective conclusion that wraps up the paper;	0	1	0	1		2	0	1	0	0

		(B2R)(P2N)									
20	A	9.7.3.5. Have students determine if writer has written a paper that makes sense. (B2R)(P2N)	0	1	0	1	2	0	1	0	0
21	D	9.8. IF you feel students find value and increased editing skill from peer review, THEN provide a formal peer review process as outline in steps 9.8.1 to 9.8.11. (C1R646) (P3)	0	0	1	1	2	0	0	0	0
22	D	9.8.1. IF the class is a CP class, THEN provide peer editors with a checklist of what to look for in their colleague's papers. (C1R1518) (P3N)	0	0	1	1	2	0	0	0	0
23	D	9.8.2. IF the class is an AP class, THEN have peer editors use the following strategy to provide peer revision- Bless, Press, Address (C1R1517). (C1R635)	0	0	1	1	2	0	0	0	0
24	A	9.8.3. Instruct students do the following: (P3N)	0	0	1	1	2	0	0	0	0
25	A	9.8.3.1. Bless-talk about what is working in the paper. (C1R635)(P3N)	0	0	1	1	2	0	0	0	0

26	A	9.8.3.2. Press-press author to improve where there is need for improvement. (C1R635)(P3N)	0	0	1	1		2	0	0	0	0
27	A	9.8.3.3. Address-help address author's questions about their paper. (C1R635)(P3N)	0	0	1	1		2	0	0	0	0
28	A	9.8.4. Model the review strategy Bless, Press, and Address with class, showing what peer editors should be doing to writer's papers during revision process. (C1R1180-1182) (P3N)	0	0	1	1		2	0	0	0	0
29	A	9.8.5. Student writers have first draft reviewed by peers of their choice. (C1R318, 325) (P3N)	0	0	1	1		2	0	0	0	0
30	A	9.8.6. Ask students to bring copies of 1st draft for each member of peer group, if possible or practical. (C1R628-629) (P3N) (D1R)	0	0	1	1		2	0	0	0	0
31	A	9.8.7. Instruct students seeking peer support to bring questions that address issues within their own writing (paragraph or paper). (C1R630-631) (P3N)	0	0	1	1		2	0	0	0	0
32	A	9.8.8. Instruct peer editors to read paper. Editors may give revisions as they read or annotate and finish notes on paper itself. (C1R632-633)	0	0	1	1		2	0	0	0	0

		(P3N)										
33	A	9.8.8.1. As an alternative step, have one member of the peer editing group read paper while writer and remaining peer editors listen. (C2R)(P3N)	0	0	1	1	2	0	0	1	0
34	A	9.8.9. Instruct student authors to sit and listen to peer editors without comment. The writer does not speak at all except through their writing. (C1R641-643) (P3N)	0	0	1	1	2	0	0	0	0
35	A	9.8.10. Give students a copy of the rubric and have the students assess their colleagues' papers. (B1R2085-2086) The International Baccalaureate and Common Core rubrics are less vague than the Advanced Placement rubrics. (B1R2094) Consider using the Common Core Informative Rubric to assess expository pieces in a literature class. (B1R2131) (P2N)	0	1	0	1	2	0	0	0	0

36	A	9.9. As the teacher, use Peer Review time to provide feedback to individual students if they seek it or if you feel individual students need it based on past writing assignments. (A1R480-481, B1R1416, C1R667-670) (P1) (P2) (P3) You may also join peer editing groups as needed. (C1R316-317) (P3N)	0	0	1	1	2	0	0	0	0
37	A	9.10. Have students begin to write 2nd drafts based on review, comments, and suggestions from peers and from you as the teacher. (D1R)(4N)	0	0	0	1	1	0	0	0	0
38	A	9.10.1. Allow students to conference with you during writing of 2nd draft with questions about papers or ideas (C1R677)(P3N)	0	0	1	1	2	0	0	0	0
39	A	9.10.2. Work with students during individual conferences to address the following: (A1R, B1R, C1R, D1R)	1	1	1	1	4	0	0	0	0
40	A	9.10.2.1. Provide guidance in possible directions to improve argumentation. (A1R486) (P1)	1	0	0	1	2	0	0	0	0

41	A	9.10.2.2. Provide feedback in suggesting improvements to evidence. (A1R486) (P1)	1	0	0	1		2	0	0	0	0
42	A	9.10.2.3. Provide feedback in improving transition between sentences and paragraphs-connecting ideas that blend one thought into another (see step 9.12). (A1R882)(P1) (B1R535)(P2)	1	1	0	1		3	0	0	0	0
43	A	9.10.2.4. Provide customized feedback in suggesting improvements to analysis. (A1R487) (P1)	1	0	0	1		2	0	0	0	0
44	A	9.10.2.5. Provide feedback in helping students clarify what he/she is trying to say. (A1R487) (P1)	1	0	0	1		2	0	0	0	0
45	A	9.10.2.6. Provide customized feedback in developing a more sophisticated inclusion of quotations into students' texts. (A1R884)(P1)	1	0	0	1		2	0	0	0	0
46	A	9.10.2.7. Provide customized feedback in helping students take fewer words and incorporate them into own sentences rather than dropping a quote into drafts out of context. (A1R887) (P1)	1	0	0	1		2	0	0	0	0

47	A	9.10.2.8. Writing summary rather than analysis. (C1R1190)(P3N)	0	0	1	1		2	0	0	0	0
48	A	9.11. Consider reviewing drafts as a whole class by assigning students to turn in drafts in their current form (1st or 2nd revision). (C1R) (P3)	0	0	1	1		2	0	0	0	0
49	A	9.11.1. Select 6 random papers and share with whole class. (C1R1177-1178) (P3N)	0	0	1	1		2	0	0	0	0
50	A	9.11.2. Discuss areas of concern that exhibit themselves during drafting and revision. (C1R1190-1191) (P3N)	0	0	1	1		2	0	0	0	0
51	D	9.12. IF your students are writing an argumentative paper, encourage students to revise their own drafts by reminding them of the modes of writing they have learned so far. (31R) (P3N)	0	0	1	1		2	0	0	0	0
52	A	9.13. Hold second round of peer revision to review second draft following any peer review model noted above. (C1R241, 325) (P3N)	0	0	1	1		2	0	0	0	0

53	A	9.14. At the conclusion of writers workshop, give students 3 additional days to type and polish papers before final due date. (A1R547-549, B1R582) (P1) (P2)	1	1	0	1			3	0	0	0	0
54	A	9.15. Remind students paper must be typed in MLA format. Review MLA format issues with citations. Provide help to students who need extra support. (A1R664, B1R1972) (P1)(P2)	1	1	0	1			3	0	0	0	0
55	D	9.16. IF possible, have students submit papers to an online grammar check program such as TurnItIn.com. (B1R594)(P2N)	0	1	0	1			2	0	0	0	0
56	A	9.17. Analyze completed papers with an online program to detect plagiarism. (D1R)(4N)	0	0	0	1			1	0	0	0	0
		Procedure 10. Assess papers. (A1R, B1R, C1R)					11	2					
1	A	10.1. Collect student papers for teacher evaluation. (A1R708, B1R, C1R, D1R)(P1, P2, P3)	1	1	1	1			4	0	0	0	0
2	A	10.2. Put off grading for a few days. (A1R709) (P1)	1	0	0	1			2	0	0	0	0

3	A	10.3. Remind yourself what areas of needed improvement and content based on instruction given will be evaluated during grading using the rubric provided or the rubric created with class in step 3.8. Provide very detailed and excessive feedback. (A1R714)(P1) (B1R583) (P2N)	1	1	0	1		3	0	0	0	0
4	A	10.4. Consider giving audio feedback to student writing at the if possible within your school's assessment software. (B1R2270) (P2N)	0	1	0	1		2	0	0	0	0
5	A	10.5. Base evaluation on whether student writers supported their thesis, their arguments make sense, and are justifiable. (A1R718-719, B1R, C1R) (P1, P2, P3)	1	1	1	1		4	0	0	0	0
6	A	10.5.1. Consider the personalities and approaches of students individually and as a class group. (A1R716) Ask yourself, "How did this particular class approach the text being analyzed?" (P1)	1	0	0	1		2	0	0	0	0
7	A	10.6. Consider the differences between classes in a particular	1	0	0	0		1	0	0	0	0

		year. (A1R714) (P1)											
8	A	10.7. Base evaluation on the age group of students. (A1R715) (P1)	1	0	0	0		1	0	0	0	0
9	A	10.8. Grade student work in a holistic way. (A1R743) Be prepared to accept arguments that might be wrong as long as they have support and are justifiable. (A1R741-742, B1R, C1R) (P1, P2, P3)	1	1	1	1		4	0	0	0	0
10	A	10.9. Consider the distance each writer has grown and moved towards an acceptable level of proficiency. (A1R728-729, A1R750, D1R) (P1)	1	0	0	1		2	0	0	0	0
11	A	10.10. Assess grammar. (A1R785)(P1)	1	0	0	1		2	0	0	0	0
12	D	10.10.1. IF the grammar and punctuation do not affect what the student wanted to say, THEN it is not reflected in the student's grade. (A1R785, B1R)(P1, P2)	1	1	0	1		3	0	0	0	0
13	D	10.10.2. IF grammar and punctuation makes a paper unclear, THEN it will be reflected in the student's grade. (A1R785-788) (P1)	1	0	0	1		2	0	0	0	0

		Procedure 11. Hand back papers and provide optional opportunities for further revision. (A1R, B1R, C1R, 41R)					12	2					
1	A	11.1. Return back graded work to students. (A1R813, B1R1478, C1R, D1R)(P1) (P2) (P3) (Pr)	1	1	1	1			4	0	0	0	0
2	D	11.1.1. IF students wrote an acceptable paper but are unhappy with their grades, THEN they have the opportunity to revise their paper. They must meet with you before they begin to revise. (A1R814-816, B1R, C1R) (P1, P2, P3)	1	1	1	1			4	0	0	0	0
3	D	11.1.2. IF students wrote a paper that does not meet proficiency based on the rubric, THEN mark the grade as ‘R’, meaning a revision is required. (A1R818) An ‘R’ means the paper has no point value. This will remain the case until a revision is turned in. (A1R819-825) (P1)	1	0	0	1			2	0	0	0	0

4	A	11.2. Consider allowing for multiple revisions as needed and as time requires. This is up to students and your schedule as a teacher. (A1R852) Experience, however, shows that students do not revise more than one time. (A1R849) (P1)	1	0	0	0		1	0	0	0	0
5	A	11.3. Offer to students who want to revise their graded paper the opportunity to meet with you to provide additional targeted practice to improve writing. (A1R, B1R, C1R288, C1R301-302) (P1, P2, P3)	1	1	1	1		4	0	0	0	0
6	A	11.4. During these conferences, look for the following common problem areas. (P1, P2, P3)	1	1	1	1		4	0	0	0	0
7	A	11.4.1. Look for problems in student writing such as problems with the argumentation and support: (A1R859, B1R)(P1, P2)	1	1	0	1		3	0	0	0	0
8	A	11.4.2. Look for problems in student writing such as papers having too few quotations or citations. (A1R859, B1R, C1R)(P1, P2, P3)	1	1	1	1		4	0	0	0	0

9	A	11.4.3. Look for problems in student writing such as writers not doing a good job connecting quotations to the argument. (A1R861) (P1)	1	0	0	1			2	0	0	0	0
10	A	11.4.4. Ask students to be ready to discuss where they struggled with their writing. (C1R254)(3PN)	0	0	1	1			2	0	0	0	0
11	A	11.5. IF time allows, consider returning papers to students for a reflective revision. (C1R254-256) (3PN)	0	0	1	1			2	0	0	0	0
12	A	11.5.1. Ask students to reflect on the top 5 things they need to work on as targeted practice to improve paper. (C1R263) (3PN)	0	0	1	1			2	0	0	0	0
13	A	11.5.2. Assign students to submit multiple versions of an improved writing area of concern. (C1R265-266) (3PN)	0	0	1	1			2	0	0	0	0
14	A	11.6. Tell students to resubmit reflective revisions and revised paper for a revised final grade. (A1R, B1R, C1R301, C1R306-308, D1R) (P1, P2, P3)	1	1	1	1			4	0	0	0	0
		Procedure 12. Publish student writing. (3PN, D1R)					12	0					

1	A	12.1. Encourage students to share their writing through blogging and submissions of writing pieces to various publishers. (C1R, D1R)	0	0	1	1			2	0	0	0	0
2	A	12.2. Have students consider the sense of audience when publishing writing. (C1R746) Model for students how and why writing pieces might be published. (C1R1338) (3PN)	0	0	1	1			2	0	0	0	0
3	A	12.3. Tell students that this is where they decide whether to use all the feedback from peer review and conferencing or not. Establish with students that this is their paper and they have the final choice of what is included when they decide to publish. (C1R1266-1276) (3PN)	0	0	1	1			2	0	0	0	0
4	A	12.4. Assign students to blog regularly. Have students make connections between articles and texts, and between what they are learning in class and something experienced outside the classroom. (C1R374)	0	0	1	1			2	0	0	0	0
5	A	12.4.1. Encourage students to write a blog post and share post on Twitter. (C1R757-759)	0	0	1	1			2	0	0	0	0

		(3PN)										
6	A	12.5. Instruct students on tagging blogs to help writing to be found on Internet. (C1R767) (3PN) Internet tags help search engines find Blogs or other writings more easily based on search parameters.	0	0	1	1	2	0	0	0	0
7	A	12.5.1. Instruct students to find main ideas and key points from their text and turn them into tags. (C1R770) (3PN)	0	0	1	1	2	0	0	0	0
8	A	12.6. Encourage students to participate in Network Reading. Network Reading is where writers find an audience or cohorts of people on line (i.e., Twitter, WordPress) who might be interested in their writing topics. Fellow writers read, respond, and share one another's articles on their blogs. (C1R771)(3PN)	0	0	1	1	2	0	0	0	0
9	A	12.7. Encourage students to read and comment on the blogs of other writers. Encourage them to join into the conversation of writing pieces and share with each other	0	0	1	1	2	0	0	0	0

		through individual blogs. (C1R774-778) (3PN)											
10	A	12.7.1. Monitor this Internet activity through your participation in Blogging and making connections with other authors including your students. (C1R, D1R) (P3N)	0	0	1	1			2	0	0	0	0
11	A	12.8. Encourage students to publish by offering extra credit for getting any writing piece published anywhere outside the classroom. This can include Blogs, newspapers, or magazines (C1R1292)(3PN) (D1R)	0	0	1	1			2	0	0	0	0
12	A	12.9. Require students to establish a twitter account and to set up a personal blog. (C1R1293) (3PN)	0	0	1	1			2	0	0	0	0
	333	Total Action and Decision Steps	**128**	**150**	**147**	**330**	281	52		0	6	2	0
	281	Action Steps	100	132	123	278				0	6	2	0
	52	Decision Steps	28	18	24	52				0	0	0	0
		Total Action and Decision Steps	**38.44%**	**45.05%**	**44.14%**	**99.10 %**							

		Action Steps	35.59%	46.98%	43.77%	98.93 %		
		Decision Steps	53.85%	34.62%	46.15%	100.00 %		
		Action and Decision Steps Omitted	**205**	**183**	**186**	**3**	144	77
		Action Steps Omitted	181	149	158	3	123	75
		Decision Steps Omitted	24	34	28	0	22	30
		Action and Decision Steps Omitted	**61.56%**	**54.95%**	**55.86%**	**0.90%**		
		Action Steps Omitted	64.41%	53.02%	56.23%	1.07%		
		Decision Steps Omitted	46.15%	65.38%	53.85%	0.00%		
		Total Mean/Average	Captured	Omitted				
		Total Action and Decision Steps	56.68%	43.32%				
		Action Steps	56.32%	43.68%				
		Decision Steps	58.65%	41.35%				
		Complete Alignment (Total Action and Decision Steps)	31	9.31%				
		High Alignment (Total Action and Decision Steps)	38	11.41%				
		Partial Alignment (Total Action and Decision Steps)	253	75.98%				
		Slight Alignment (Total Action and Decision Steps)	11	3.30%				

			333		
		Complete Alignment (Action Steps)	26	83.87%	
		Complete Alignment (Decision Steps)	5	16.13%	
		High Alignment (Action Steps)	30	78.95%	
		High Alignment (Decision Steps)	8	21.05%	
		Partial Alignment (Action Steps)	214	84.58%	
		Partial Alignment (Decision Steps)	39	15.42%	
		Slight Alignment (Action Steps)	11	100.00 %	
		Slight Alignment (Decision Steps)	0	0.00%	