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Barriers High School Teachers Encounter in Teaching Critical Thinking in Writing

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COLLEGE OF EDUCATION

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Abstract

In an urban high school in California, students are generally unskilled in critical writing. The problem has been associated with instructional barriers encountered by teachers. In this qualitative case study, English Language teachers provided their perceptions of such barriers and shared perspectives for solutions based in professional development. Grounded in the theories of Halpern, Saiz and Rivas, Weigle, and Harris and Graham, the conceptual framework emphasized instructional models that develop metacognition in writing, which can increase students' critical thinking. Selection criteria required participants who were English Language Arts teachers of writing critical thinking. Data from 4 participant interviews were coded, labeled, and collapsed into themes on the teachers' perceived barriers towards teaching critical thinking. Interview data were triangulated using field notes that revealed that limited teacher pedagogy, lack of student application, and an overall scarcity of school support prevented educators from teaching critical thinking in writing. The findings indicated a lack of an understanding from students, teachers, and administration of the instructional elements needed to develop successful critical thinking in writing. This study promotes positive social change by illuminating the instructional barriers by these 4 high school English Language Arts teachers. In addition, a professional development program, informed by the findings of this inquiry, will present teachers and administrators with strategies to increase critical thinking and writing. These coaching and mentoring strategies comprise a sustainable systemic program that will improve student critical thinking and writing.

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Dedication

This dissertation is dedicated to my three children, parents, and very patient husband. Without them, there would be no me. "The direction in which education starts a man will determine his future life." - PLATO, Greek Philosopher

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Section 1: The Problem

Local Problem

Understanding the barriers high school English Language Arts (ELA) teachers encounter when they teach critical thinking in writing is crucial in order to meet common core standards. Teacher pedagogy, student knowledge, and time constraints were some of the problems that ELA teachers encountered when teaching critical thinking in writing. The Common Core State Standards are nationwide standards engineered to prepare students for college and career by building a foundation in critical thinking that is relevant to the real world (Common Core State Standards Initiative, 2012a). In 2010, the Common Core State Standard for Mathematics and ELA were adopted in California. As California embarks on these new set of standards, it is faced with the challenge of ensuring that students are prepared to enter the 21st century with competitive skills in critical thinking and writing (Partnership for 21st Century Skills, 2011). The California Common Core Standards (CCSS) are designed not only to build an academic foundation, but to prepare students for their future in a changing economy (Common Core State Standards Initiative, 2012a). The shift from teaching low-performing tasks to high-order thinking requires a change in instruction, professional development, and preparedness for educators (Marin & Halpern, 2010). This shift is necessary due to the low performance in ELA among high school students, especially in writing and critical thinking.

The results of the California High School Exit Exam (CAHSEE), California English Language and Development Test (CELDT) and the California Standards Test (CST), indicated that there is a deficit of critical thinking in writing among high school

students (California Department of Education CAHSEE Test Results, 2011a; California Department of Education CST Test Results, 2012b; California Department of Education CELDT Test Results, 2011c). In July 2011, only 26% of the students passed the CAHSEE with a mean score of 336 (California Department of Education CAHSEE Test Results, 2011a). California High School Exit Exam data indicated the following average scores (a) word analysis score 51%, (b) writing strategies 44%, (c) written conventions 46%, and (d) the essay application 2.1 (California Department of Education CAHSEE Test Results, 2011a). Overall, students in California are performing below average in the area of writing and writing conventions.

Similar to the low performance on the CAHSEE, students performed at lower rates on the CST as they progressed through a K-12 public education system. A significant decline in performance was evident starting in fifth grade (California Department of Education CST Test Results, 2012b). In fifth grade, the number of students reaching proficiency in ELA was 60% (California Department of Education CST Test Results, 2012b). By the eighth grade, the average number of students reaching proficiency was 56% (California Department of Education CST Test Results, 2012b). In the ninth grade, proficiency in ELA dropped to 42% (California Department of Education CST Test Results, 2012b). In the 11th grade, ELA proficiency was on average 46% (California Department of Education CST Test Results, 2012b). In addition, the CELDT indicated low performance in writing among high school students. By the 12th grade, CELDT data indicated a wide count of students who were likely to graduate high school

as lifelong English learners (California Department of Education CELDT Test Results, 2011c).

Within Southern California, there are smaller districts that are performing at or below the county's averages. Students within these districts are performing below proficiency in all areas, especially in writing. For instance, in a medium sized district, only 31 out of 120 students who took the 2011 CAHSEE passed. CAHSEE 2011 data indicated the following average scores (a) word analysis 48%, (b) writing strategies was 43%, (c) written conventions 49%, and (d) 2.2 on essay applications (California Department of Education CAHSEE Test Results, 2011d). The CELDT data showed even lower language proficiency when compared to the county's averages (California Department of Education CELDT Test Results, 2011e): The data indicated that

- In Grade 5, 47% of students were language proficient
- In Grade 6, 42% of students were language proficient
- In Grade 7, 59% of students were language proficient
- In Grade 8, 50% of students were language proficient
- In Grade 9, 28% of students were language proficient
- In Grade 10, 32% of students were language proficient;
- In Grade 11, 46% of students were language proficient
- In Grade 12, 57% of students were language proficient.

The CELDT 2011 data depicted a low percentage of students who reached language proficiency. The deficit of growth in language proficiency may be caused by the absence of writing proficiency. Possible factors that may contribute to southern

California's low performance in writing are a lack of teacher pedagogical knowledge in critical thinking in writing, self-determination among teachers, and time constraints. Being an effective writer requires critical thinking. I investigated the perceptions of high school teachers and the barriers they encounter when incorporating critical thinking in writing. This may also remedy any possible deficit in critical thinking and writing instruction. This study may bring forth insight into why critical thinking in writing may be a difficult concept for teachers to teach.

Rationale

The data from local school districts within southern California indicated that students perform below average, and in instances, below U.S. averages in writing strategies, written conventions, and essay writing. There is a need to understand the barriers teachers encounter when teaching critical thinking in writing. A lack of self-determination among educators and insufficient time for planning are a possible barrier (Snyder & Snyder, 2008; Underwood, 2002). Teachers may not have the pedagogical knowledge of critical thinking (CT), and overall effective instructional practices. Harris and Zha (2013) discussed critical thinking to be a challenging and complex pedagogy for teachers to teach and validate within their instruction. Snyder and Snyder (2008) discussed how critical thinking relates to the instructional design and barriers teachers encounter. During instruction, teachers found it easier to measure critical thinking through a multiple-choice assessment rather than an open-ended analysis or written response (Snyder & Snyder, 2008). A multiple-choice assessment fails to measure critical thinking skills as well as writing. Teachers may not realize the

measurable impact this type of assessment has on student achievement and instructional practices (Stronge, Thomas, & Grant, 2011).

Teaching and assessing CT in writing is a task that few teachers decide to assess. Failing to assess a student's level of critical thinking through writing does not build metacognition and fails to identify gaps in instructional practices. Instruction then becomes less effective (Stronge et al., 2011). The goal of teaching should not be to become less effective, but to provide the opportunity for students to reach their maximum potential. Stronge et al. (2011) stated teachers have the capacity to create change and maximize student learning. Developing deep approaches to learning is important for students to master in order for metacognition, retention, and transfer of information to occur (Nelson Laird, Seifert, Pascarella, Mayhew,& Blaich, 2014). Improving the instructional capacity of teachers is an essential component in ensuring that CT in writing is understood and taught effectively and continuously.

Critical thinking in writing occurs through analyzing and evaluating arguments that build a student's meta-cognition (Swartz, 2008). Metacognition through direct instruction helps eliminate barriers (Ambami et al., 2008; Bensley, Crowe, Bernhardt, Buckner, & Allman, 2008; Marin & Halpern, 2011; Swartz, 2008). By teaching CT skills in writing, a student's thinking develops as they organize their thinking and begin to compose their writing (Hayes & Flower, 1981, p. 366). Not only is direct instruction necessary, but the modeling component helps build good writers through metacognition (Regan & Berkeley, 2012). Organized thinking is a distinct metacognitive process that may be missing from the instructional design and delivery among Southern Californian

teachers. An academic program must support and include cognitive styles, critical thinking approaches, and vast opportunities for students to engage in higher order thinking (Emir, 2013). Understanding this and other barriers teachers encounter, equips teachers with the necessary skills and pedagogy for teaching the CCSS.

Writing is a part of standard mastery within the CCSS and the Smarter Balance Assessments of 2014-2015. Smarter Balance Assessments align to the CCSS. The Smarter Balance Assessments measure a student's critical thinking ability to problem-solve through performance-based tasks using computer adaptive testing (Smarter Balance Assessment Consortium, 2012a). Within the test, students encounter both multiple-choice questions and performance tasks that require them to write and solve problems. High school students will write both argumentative and informational explanatory essays. In addition, the CCSS emphasize higher-order thinking. According to Porter, Hwang, McMaken and Yang, (2011), indicated that the intended common core curriculum is compared to state standards. Porter et al. (2011) indicated that there is an overall emphasis in higher-order thinking on the cognitive demand rather than on memorization and recall. Thus, the CCSS create a shift in assessments. The Smarter Balance Assessments assess knowledge-based tasks and critical thinking skills rather than memorization and recall.

This new emphasis on higher-order thinking impacts the way instruction is delivered and assessed in the Smarter Balanced Assessments (Beach, 2011; Porter et al., 2011). The Smarter Balance Assessments consist of students performing at a higher-order thinking capacity with an emphasis on writing, research, and analysis of real-world

problems (Smarter Balance Assessments Consortium, 2012b). Ku (2008) stated that in order for students to develop the ability to evaluate and develop sound reasoning; their knowledge needs to exceed textbook content. By 2014-2015, all schools in California will have taken the Smarter Balance Assessments. The results of the Smarter Balance Assessments will indicate if Southern Californian students have the fundamental CT and writing competence to compete in the 21st century.

The Smarter Balance Assessments and the new CCSS have made it more difficult for students achieve better results. There is a gap present between the performance of southern Californian students on the CST, CELDT, CAHSEE and the demands of critical thinking and writing (California Department of Education CAHSEE Test Results, 2011a; California Department of Education CST Test Results, 2012b; California Department of Education CELDT Test Results, 2011c). Furthermore, there is an absence of current research on critical thinking and writing (Hayes & Flower, 1981; Marin & Halpern, 2011; Stronge et al., 2011; Swartz, 2008). There is a need to further investigate critical thinning and writing and the interconnection between the two. Understanding the current barriers teachers encounter when teaching critical thinking in writing will assist Southern California educators align CCSS in classroom instruction and eliminate any possible barrier. To address the problem posed by assessment results, it is imperative to look into some of the barriers that ELA high school teachers encounter in their instruction of critical thinking in writing.

Definitions

The purpose of this section is to define terms that are related to critical thinking, writing, and instruction barriers. Each definition is supported by credible sources. The key terms are listed below:

California Critical Thinking Disposition Inventory: An assessment tool used to assess critical thinking disposition among individuals (Insight Assessments, 2013). The assessment examines attributes and critical thinking skills that influence problem solving and decision-making (Insight Assessments, 2013).

Common Core State Standards: Standards ranging from kindergarten to 12th grade (Common Core Standards Initiative, 2012b). They have been voluntarily adopted by states to ensure that students within the United States are prepared to enter college or enter a competitive workforce (Common Core Standards Initiative, 2012b).

Critical thinking: Gardner (1990) defined intelligence as the manifestation of an individual's knowledge domain in connection with the society that supports it and the values it promotes. Critical thinking can also be defined as a "reflective and reasonable thinking that is focused on deciding what to believe or do" (Ennis, 1985, p. 45). Critical thinking is also characterized as a type of thinking that ignites both inquiry and complexity when problem-solving (Lizarraga, Baquedano, & Villanueva, 2012).

Critical thinking disposition: Halpern (2003) stated that CT disposition is like an attitude an individual takes on. Individuals who are motivated make a greater attempt to work, self-monitor, aggregate data, and persevere in problem solving (Halpern, 2003).

Dialogic argument: A form of every day conversation (Kuhn & Crowell, 2011).

Disposition(s): According to the California Critical Thinking Disposition Inventory ([CCTDI], 2003), dispositions are thinking skills such as the ability towards, "truth-seeking or bias, toward open-mindedness or intolerance, toward anticipating possible consequences or being heedless of them, toward proceeding in a systematic or unsystematic way, toward being confident in the powers of reasoning or mistrustful of thinking, toward being inquisitive or resistant to learning, and toward mature and nuanced judgment or toward rigid simplistic thinking."

Halpern Critical Thinking Assessment Using Everyday Situations: An assessment tool designed to assess the five dimensions of critical thinking through multiple response formats (Halpern, 2003).

Metacognition: Metacognition is "thinking about thinking" (Ku & Ho, 2010). Metacognition can further be defined as the cognitive process where humans carry out tasks and cognitively identify specific strategies to perform the given task. This consists of two components: knowledge and regulation (Ku & Ho, 2010).

National Assessment of Adult Literacy (*NAAL):* An assessment that measures English literacy (National Center for Education Statistics, 2003; National Center for Education Statistics, 2006). It is given to individuals who are 16 years or older across the United States (National Center for Education Statistics, 2003).

Performance based assessments: "This is a type of instrument that shows potential for the measurement of complex constructs such as critical thinking" (Saxton, Belanger, & Becker, 2012, p. 253). Performance-based assessments will be part of the

Smarter Balance Assessments all students will take in spring 2015 (Smarter Balance Consortium, 2012b).

Program for International Student Assessment (PISA): A global assessment given to 15-year-olds (National Center for Education Statistics, n.d.). According to National Center for Education Statistics (n.d.), "PISA 2012 focuses on mathematics literacy and also assesses reading and science literacy. PISA 2012 also included computer-based assessments in mathematics literacy, reading literacy, and general problem solving, and an assessment of students' financial literacy" (National Center for Education Statistics, n.d.,para. 3).

Self-regulated strategy development (SRSD): SRSD is a construct used by educators to teach students self-regulated procedures and strategies that may assist them during the planning, revising, and thinking process of writing or when addressing a particular behavior (Graham & Harris, 2005).

Smarter Balance Assessments: These are assessments that are parallel to the Common Core State Standards (Smarter Balanced Assessment Consortium, 2012a). Students in grades 3-11 will take these assessments (Smarter Balanced Assessment Consortium, 2012b). They will have both a summative component and an optional interim component that will be done on a computer (Smarter Balanced Assessment Consortium, 2012a).

The American College Test (ACT): "A curriculum-and standards-based educational and career planning tool that assesses students' academic readiness for college" (The ACT, 2013, para. 1). The result of ACT provides high schools with a

comprehensive evaluation of a student readiness for college (ACT, 2006b). In addition, the ACT is calibrated to real world success which indicates a students' success in college and career (ACT, 2006b).

Watson-Glaser Critical Thinking Appraisal: The assessment is intended to measure critical thinking skills and abilities (West, 2008). It is a psychometric test that uses multiple question types to measure problem solving and decision making (West, 2008).

Significance

The Common Core State Standards Initiative (2012a) indicated that there is a decline in text complexity and in students' ability to read complex text independently. The National Assessment of Adult Literacy (NAAL) measured the literacy of people 16 years and older. According to the NAAL, the literacy level of adults in 2003 was lower than in 1992, and this means that there were 11 million non-literate people in the United States (National Center for Education Statistics, 2003). Common Core State Standards Initiative states, "Being able to read complex text independently and proficiently is essential for high achievement in college and workplace and important in numerous life tasks" (p. 3). In the process of writing, reading complex text, and understanding how to write to a task is a critical thinking skill students need. For instance, when students write an argument, they must, "think critically and a deeply, assess the validity of their own thinking, and anticipate counterclaims in opposition to their own assertions" (Common Core State Standards Initiative, 2012c, p. 24). Students must understand the complexity of the task and metacognitively plan on how to achieve the task.

The new dilemmas of teaching, assessing, and learning critical thinking skills are topics of debate in education across the United States (Bensley & Murtagh, 2012; Daniel et al., 2004). In the U.S., leaders have noticed that students enter college with lack of 21st century skills and writing abilities. Similarly, this dilemma is also common among newly hired employees. The Program for International Student Assessment (PISA) assessed the level of proficiency among15-year-olds in the area of reading literacy, math, science, and problem solving while embedding real-world context (International Activities Program, 2010). PISA measured three literacy components of the situation, the text, and the cognitive approach (National Center for Education Statistics, 2011). The results were categorized under subscales: access and retrieve (U.S. 19th rank), integrate and interpret (U.S. 16th rank), and reflect and evaluate (National Center for Education Statistics, 2011). Overall, the United States ranked 14 out of 33 countries. The United States must increase the level of critical thinking and writing among students.

While China, Korea, and Finland ranked as the top three countries in reading and science on the PISA, there are barriers that prevented the United States from ranking higher on the PISA (ACT, 2012a ;National Center for Education Statistics, 2011). According to the U.S. Department of Education (2010), "Four of every 10 new college students, including half of those at two-year institutions, take remedial courses, and many employers comment on the inadequate preparation of high school graduates" (p. 7). In California alone, the ACT (2012a) indicated that only 31% of students in California students are college and career ready. ACT (2012a) reports focused on performance, access, course selection, course rigor, college readiness, awareness, and articulation. The

ACT (2012) reported that the California education system needs to evaluate the rigor of courses, provide career and college guidance, ensure that students have the right courses, and provide equal access for all students.

By understanding the complexity of reading and writing, school districts in southern California may be able to prepare students to become ready for college and a career. One way to do so is to investigate the perception of high school teachers when teaching CT in writing. Saxton, Belanger, & Becker (2012) discussed the barriers high school teachers encounter when incorporating critical thinking education such as (a) a lack of teacher preparation to teach CT, (b) curriculum does not meet higher-order thinking skills, (c) a lack of instructional methods that promote CT, and (d) a lack of assessment to measure CT. Understanding the causes of these barriers would assist school districts in Southern California in addressing the problem. Understanding the barriers therefore may assist in establishing a CT in writing framework, increase the instructional capacity of teachers, and develop a CT measurement tools in writing. This, in turn, may provide students with the necessary CT skills needed to work in the global economy.

Working in the global economy will require students to not only master complex text, but to express themselves orally, in written form, and with new web/multimedia skills. Wenger and Owens (2012) studied the most desirable skills required by top companies and emphasized the importance of acquiring web/multimedia skills, text-based writing skills, posting to the web, and the ability to write for the web. In the workforce, the ability to write is a skill that results in a need to understand CT in writing and delivery

of instruction. By understanding CT in writing and improving instructional delivery, the chances of students staying in school and attaining postsecondary degrees and beginning a career path are more likely to occur. The National Center for Education Statistics (2012) claimed that "from 1990 through 2011, the percentage of youth ages 16–24 neither enrolled in school nor working remained between 11 and 16 percent annually" (p.1). With a large number of students' not finishing high school or working, it is imperative that schools and teachers must prepare students for the 21st century.

Guiding/Research Question

Critical thinking and writing, let alone writing, are difficult instructional topics for teachers. With the pressure of high-stakes accountability programs and standardized testing, the amount of time left for teaching students to develop their critical thinking disposition and skills in writing has become a barrier. There are many barriers that play a role in the problems teachers encounter when teaching critical thinking in writing. To understand the central problem behind the barriers ELA high school teachers encounter, the following central research question and sub questions allow for a deeper understanding of the research design and goals.

Central Research Question

1. What is the perception of the barriers high school teachers encounter or what barriers do high school teachers perceive when incorporating critical thinking in writing during ELA instruction among 15- to17-year-olds?

Subquestions

1. What type of support do teachers need to be better prepared to teach critical thinking in writing?
2. What specific critical thinking strategies do teachers try to include during writing? What instructional barriers do they face?
3. What are the possible school-based barriers teachers encounter during critical thinking in writing instruction?
4. What is the level of pedagogical knowledge of critical thinking and writing among the participants?

Review of the Literature

Developing writers begin with an understanding of the connection between writing and CT. The conceptual framework in this literature review brings forth research, concepts, and theories that explain the essential components of critical thinking, writing, and instructional barriers. The guiding research in this study is based on Halpern's 2011 and 1998 research on critical thinking and writing. Saiz and Rivas's (2011) research on critical thinking and problem solving, Weigle's (2002) research on assessing writing, and Harris and Graham's (2005) research on flexible metacognitive instructional models that view critical thinking in a variety of ways were instrumental in establishing a connection between critical thinking and writing. Halpern, Saiz and Rivas, Weigle, and Harris and Graham highlighted the teaching and understanding of critical thinking in writing and how the brain works to process knowledge into written form. Halpern et al's illustrated how metacognition helps transfer critical thinking across content areas. Saiz and Rivas

also investigated how real world problems help to increase the level of critical thinking and how cognitive processing leads to meta-knowledge. Graham and Harris brought forth a metacognitive instructional model that can assist struggling writers achieve success through metacognitive strategy development. Therefore, it is important for teachers to understand the interconnection of the research as a conceptual foundation for embedding critical thinking and writing.

The conceptual framework in this literature review is guided by research on critical thinking and writing. Impacting student learning requires educators to have effective classroom pedagogy in order to become competent instructors (Cantrell, Burns, & Callaway, 2007; Goldschmidt & Phelps, 2007; Marin & Halpern, 2011; Snyder & Snyder, 2009; Marzano, 2007). For instance, educators who have knowledge on how students gain rhetorical flexibility are able to assist students in applying their growing knowledge and skills into writing and thinking (Uccelli, Dobbs, & Scott, 2013). Uccelli, et al. (2013) stated:

> In fact, a skilled writer/speaker is one who can flexibly and competently select, from within an extensive linguistic repertoire, a combination of forms and functions to aptly present a stance—even a combination of stances—within a text to effectively convey meaning. (p. 56)

This linguistic demand of academic writing assists students in understanding the process of written composition. Educators who have knowledge and understanding of the linguistic demands of academic writing can assist students in planning, translating, and reviewing their work through metacognitive monitoring (Lv & Chen, 2010; Wei, Shang,

& Briody, 2012). This metacognitive process helps writers synergize their writing until they reach a level of satisfaction (Glaser & Brunstien, 2007; Lv & Chen, 2010). For this process to take place, educators need pedagogy, self-determination, and time to plan effective lessons, implement the lessons, and determine areas of student strengths and weakness in writing.

Effective classroom pedagogy, along with self-determination among teachers and time constraints, may be possible factors as to why teachers in Southern California encounter difficulty when teaching CT in writing. In order to understand this problem, it is necessary to investigate these barriers through a qualitative case study. The central phenomenon to explore in this proposed study is the perception of the barriers that high school teachers encounter when teaching CT in writing during ELA instruction.

The content of the literature review for this proposed study would be the conceptual framework that will discuss three critical areas: critical thinking, writing, and instructional barriers. The review of literature encompasses a wide range of research that is organized within subsections. The subsections are: Thinking about Thinking, Critical Thinking Instruction, Connecting Critical Thinking to Writing Composition, Measuring and Assessing Critical Thinking, Measuring and Assessing Writing, and Critical Thinking in Writing and Instructional Barriers. Each subsection builds upon the previous section by discussing essential theories, concepts, and methodologies related to critical thinking and writing.

The research strategies for identifying information were generated through Walden Library databases, government websites, professional educational websites, and

books. The educational databases used in this study were ERIC, Research Complete, and SAGE Publications. Multidisciplinary databases, such as Science Direct and ProQuest Central, Psychology databases such as, PsychINFO, PsycARTICLES, and PsycTEST, were helpful in providing additional research for this study. Key terms used to find sources included: *critical thinking, writing, instructional barriers, assessing critical thinking, assessing writing, case study, metacognition, and disposition*. The parameters of the search went beyond five years. The majority of foundational research on critical thinking and writing took place during the latter part of the 20th century. Many theorists and prominent researchers were cited to support current research. From the research collected, additional research of which led to government websites, professional educational websites, and books also proved to be useful.

In addition to the databases, government websites such as the California Department of Education, The National Center of Education Statistics, Common Core State Standards Initiative, and Ed-data were employed in this proposed study. Professional educational websites such as Insight Assessment, Critical Thinking Community, and Smarter Balance Assessment Consortium were also incorporated in this study.

Understanding critical thinking in writing encompasses a wide range of theories and concepts that are not present in one specific database or online resources. With this in mind, this literature review mobilized a wide-range of resources to establish a foundation of critical thinking, writing, and instructional barriers.

Thinking about Thinking

Critical thinking encompasses a range of definitions and instructional practices that have stemmed from disciplines in philosophy, psychology, and educational approaches (Lai, 2011a; Lewis & Smith, 1993). The emphasis on moral theory, self-examination, and what is known the Socratic seminar has paved the way for philosophers and psychologists in developing an understanding of CT (McPherran, 2010; Paul, Elder, & Bartell, 1997). Socrates believed that a person cannot rely on an authority for judgment but must find evidence and truths about logical situations and assumptions (Paul et al., 1997). This type of thinking begins with how humans use "cognitive skills or strategies that increase the probability of a desirable outcome-in the long run, critical thinkers will have more 'desirable' outcomes than 'noncritical' thinkers" (Halpern, 1998, p. 450). Overtime, desirable outcomes will lead to success in school, college, and career choices.

To think critically not only stems from a person's higher-order thinking ability, but it has a connection to cognitive processes and outside influences (Mango, 2010). Dewey (1902) stated that knowledge of information should not be the goal of education but it should be the process of self-realization. Dewey claimed that, "the only significant method is the method of the mind as it reaches out and assimilates" (p. 9). The decisions

made as the mind reaches out and assimilates stems from two systems of thinking: System 1 and System 2. Although the dual processing theory is questionable for some, it demonstrates how human thinking works. Dual process theory has characteristics of dividing "the mental processes underlying social judgments and behavior into two general categories depending on whether they operate automatically or in a controlled fashion" (Gawronski & Creighton, 2014, p. 1). System 1 thinking occurs automatically; it involves the mental shortcuts that help an individual to process answers automatically (Gawronski & Creighton, 2014; Sanfey & Chang, 2008). System 2 thinking is a slower conscious process an individual uses to monitor himself or herself to answer or solve a problem. Although these two systems are considered to be independent of each other, Keren and Schul (2009) stated that they require higher-order mental tasks that are interdependent of each other and cannot stand-alone.

When teachers teach a student a CT skill, the student will be able to develop shortcuts within the System 1 thinking. This may be applied more rigorously through System 2 self-monitoring and reflection. To develop this type of metacognitive process, the underlying principles of metacognition need to be understood. The cognitive process of metacognition consists of two processes: monitoring and control (Perfect & Schwartz, 2004). In this same source, metacognitive monitoring, "allows the individual to observe, reflect on, or experience his or her own cognitive process" (Perfect & Schwartz, 2004, p. 4). It is also the "conscious and non-conscious decisions that individuals make based on the output of the monitoring process" (Perfect & Schwartz, 2004, p. 4). When both systems work together, they build a meta-level operating system that helps in developing

higher-order thinking skills. Once the skills are developed, students can use these multiple metacognitive skills to address problems (Mango, 2010).

Metacognitive monitoring and control are necessary for daily decision-making, processing of information, and making judgments (Lai, 2011b; Mango, 2010). Teachers should model the process and allow students opportunities to observe a critical thinking skill in action, develop relevancy, and reflect on them (Mango, 2010; Martinez, n.d.; Swartz, 2008). In essence, for students to think critically, how to be aware of the underlying specific ways to think should be taught to them (Mango, 2010, p 152). This allows them to make decisions and apply the skill to real-world applications (Swartz, 2008). Developing metacognitive monitoring and control will allow the mind to assimilate and establish cognitive skills and dispositions. As the mind assimilates, mastering cognitive skills and dispositions may occur. Facione (2006) defined the core cognitive skills as evaluating, analyzing, interpreting, inferring, explaining, and self-regulating. Building cognitive skills allows individuals to see the scope of a given problem through sub-skills of categorization, decoding, judging, and distinguishing. When analyzing the process of identifying relationships among concepts, statements, descriptions, and reasoning, important information becomes the central focus (Facione, 2006). This means that evaluating consists of assessing the credibility of information by judging and interpreting information for validity. Inference is how people hypothesize information and draw conclusion. The process of inference is crucial to have when dealing with real-world situations. This is also connected to the skill of evaluating. Self-regulation is one of the most important CT skills to possess. Self-regulation is how a

person monitors his or her cognitive processes and activities resulting in human actions. The human ability to reason is what separates good critical thinkers from poor ones (Facione, 2006).

Likewise, the ability to reason effectively is a concept many theorists continue to investigate. Lipman (1998) defined CT as "thinking that both employs criteria and that can be assessed by appeal to criteria." (p. 39) Lipman also suggested that judgments people make are a thinking skill that relies on claims, opinions, and human reasoning. That is, to develop reasoning, philosophy should be taught in classrooms with an emphasis on the principles of logic (Lipman, 1984). Similar to Lipman's theory on critical thinking, Sternberg (1984) suggested that there are three categories intelligence can derive from: (a) meta-components, (b) performance components, and (c) knowledge acquisition. Sternberg (1984) further sought out methods to assess intelligence by determining if intelligence can be trained and by which program. Understanding how CT fosters intelligences and how they can be measured is still an area which psychologists, philosophers, and teachers are trying to better understand.

Researchers have suggested proposed guides for achieving higher-order thinking skills and dispositions. Halpern (1998) proposed a four part empirical guide for teaching and learning CT which states,

> (a) dispositional component to prepare learners for effortful cognitive work, (b) instruction in the skills of critical thinking, (c) training in the structural aspects of problems and arguments to promote trans-contextual transfer of critical thinking

> skills, and (d) a metacognitive component that includes checking for accuracy and monitoring progress toward the goal. (p. 449)

Halpern stated that with appropriate instruction, students will be able to transfer their CT skills to real-world situations. Appropriate CT instruction can occur by teaching the skill and having students recognize and apply it (Halpern, 1998). The goal is for transferable thinking of CT skills to occur in order for students to apply it to real-world situations.

Critical Thinking Instruction

Snyder and Snyder (2008) stated that students may have the capacity to think critically but may not know how to do so. In order for the transfer of CT skills to occur, competencies must be developed through social structures or institutions (Gardner, Kornhaber, & Krechevsky, 1990). The Alliance for Education Policy Brief (2009) stated that there is a growing trend of students who are not ready for careers or college. There is a need to foster the necessary support or development of CT skills among U.S. youth. Furthermore, among U.S. youth, there is a growth in dropout rates and a decrease in high school performance on the National Assessment of Educational Progress (Tucci, 2009). This is evident when examining districts in Southern California dropout rate: 35% of African Americans, 31% of Hispanic Americans, and 40% of English learners (Educational data, 2011).

Critical thinking must be considered a component of the educational system. It is defined as a multidimensional construct that requires skills, reasoning, and self-regulation (Bensley & Murtagh, 2012). It is also described as a process of acquiring knowledge

through reasoning skills, problem-solving, and decision-making (Saiz & Rivas, 2008). The Delphi Committee determined that there are six CT skills needed in instruction: interpretation, analysis, evaluation, inference, self-regulation and explanation (as cited in Abrami et al., 2008). Ennis (1985, 2011) claimed that CT is a higher-order thinking skill that is related to a person's ability of inference, problem-solving, and caring about others. Critical thinking has also been interpreted as psychological and pedagogical stages (Shakirova, 2007). To increase the level of CT, the following stages are considered to assist in the process: (a) awaken interest and knowledge, (b) critical reading and writing (c) incorporating reflection, and (d) generalizing and assessing information (Shakirova, 2007). The goal of CT instruction should be to prepare students "to deal effectively with social, scientific, and practical problems" (Shakirova, 2007, p. 42). Being able to self-regulate and infer are essential CT skills that students need during writing, especially in problem-solving tasks.

Self-regulation and inference are metacognitive strategies that increase the level of CT (Ku & Ho, 2010). Critical thinking is a high complex thinking process that can be divided into two components. The components of knowledge and regulation play roles in the process of developing CT through metacognition. Knowledge refers to the understanding of self in regards to thinking (Ku & How, 2010; Perfect & Schwartz, 2004). Regulation in the meta-cognitive realm refers to the strategies humans use throughout the thinking process such has planning, monitoring, comprehending, and evaluating (Ku & Ho, 2010). When the level of knowledge increases, students are able to regulate their thinking and select strategies to execute a task (Ku & Ho, 2010). Within the knowledge

and regulation component, metacognition can further be divided up into planning, monitoring, and evaluating (Ku & Ho, 2010). When all three categories are taught and fostered, students can apply them to a problem-solving task (Halpern, 1998).

Critical thinking applied in a problem-solving approach helps students face challenges in real-world situations when used in different domains (Saiz & Rivas, 2011). Saiz and Rivas (2011) discussed the effectiveness of Halpern's components of CT. The components included motivation, attitudes that transcend into skills that lead to reasoning, problem-solving, and decision-making. This increases meta-knowledge. This means that increasing such knowledge allows the transfer of what students are learning to problems in the real world. This provides an opportunity for a deepening of knowledge. In order to prepare students to enter a competitive global market, CT needs to be taught to all students, especially in writing. It can be done through imbedded instruction or explicit instruction of CT skills (Garcia & Hooper, 2011; Marin & Halpern, 2011). Essential questions to use while preparing students to solve real world situations are discussed as metacognitive monitoring in Halpern's research on CT. Halpern (1998) used the following guide questions,

- How much time and effort is this problem worth?
- What does the writer already know about this problem or argument?
- What is the goal or reason for engaging in extended and careful thought about this problem or argument?
- How difficult does the writer think it will be to solve this problem or reach a conclusion?

- How will the writer know when they have reached the goal?
- What critical thinking skills are likely to be useful in solving a problem or analyzing this argument?
- Does the writer move towards a solution? (p.454)

Using Halpern's (1998) questioning allows students to synthesize the mental development of assessing the structural components of an argument or problem. These questions become embedded into a daily routine of analysis. It then becomes crucial to teach students metacognitive monitoring. It can assist students in reaching effective solutions to real-world problems by helping them master and transfer CT skills in real-world situations. These questions will provide students with the scaffolding needed to determine how much time and effort a problem will take and the necessary critical thinking skill needed to solve the problem. Effective CT instruction then can be broken down by teaching CT skills or embedding them into content areas (Marin & Halpern, 2011). Bellanca, Fogary, and Pete (2012) stated that, if students are to become productive problem solvers, sound decision makers, and creative innovators as called for my by the many reports and educational experts, educators must include the explicit development of those complex skills as the action antecedent to the state content. (p. 3)

When CT skills are explicitly taught, the focus is on the skill, design of the lesson, and delivery. To teach a skill explicitly, teachers must understand that a skill must be "clearly and compactly defined so that a student has an unequivocal understanding of the term with nothing left to suggestion" (Bellance et al., 2012, p. 4). With repeated practice, students are able to transfer their knowledge into other content areas and

real-world experiences; this cognitive process helps develop encoding variability (Ku & Ho, 2010; Marin & Halpern, 2011). Abrami et al. (2008) stressed that there is a link between an increase of CT skills among students and how CT instruction is delivered. When CT skills are explicitly taught, there is a larger effect size in students mastering the skills (Ambami et al., 2008). Teaching CT skills explicitly in writing helps to develop CT dispositions and prepares students to solve problems analytically, make inferences, and become prepared to take the Smarter Balanced Assessments.

Developing CT dispositions in students is the goal of teaching CT explicitly. Facoine, Sanchez, Facoine, and Gainen (1995) stated that it is necessary for schools to foster the CT skills and dispositions. CT dispositions such as self-confidence, cognitive maturity, inquisitiveness, open-mindedness, systematicity, analyticity, and truth-seeking are determined as ideal CT dispositions (Facoine et al., 1995). A student, who has a high level of open-mindedness and inquisitiveness, will more likely interpret information and ask analytical questions (Facoine et al., 1995). A student who has cognitive maturity and self-confidence will be able to reach a higher level of inferring and provide judicious explanations (Facoine et al., 1995). In addition to these dispositions, Halpern (1998) stated that students who exhibit willingness are flexible, open-minded, and are aware of social realities (p. 452). When students exhibit these dispositions, they can begin to connect CT to writing.

Connecting Critical Thinking to Writing Composition

There is an urgency to prepare students, even those who drop out of high school, with the necessary CT skills in writing to build a foundation for real-world experiences.

Lipman (1998) posited that individuals need the opportunity to improve their CT skills (as cited in Demir, Bacanli, Tarhan, & Dombayci, 2011). By improving their CT skills, students become better prepared to enter the workforce. Hyslop (2008) stated that, "employers have reported that the most important skills employees need more of include technical skills, strong basic employability, and reading, writing, and communication skills" (p. 40). Although most educators understand the demands of 21st century employers and the importance of teaching CT and writing, the connection between the two needs to be strengthened. There is a need for researchers to conduct further research in writing that may result in effective pedagogical strategies and models for instruction (Uccelli et al., 2013).

With the new common core standards, there is an emphasis on argumentation, which will require teachers to teach CT skills. Saiz and Rivas (2011) asserted that, "argumentation if possibly the most common and natural form of human reasoning" (p. 38). In regards to the emphasis on reasoning through arguments and debates, the National Governor's Association Center for Best Practices and the Council of Chief State School Officers (2009) emphasized:

> The ability to frame and defend an argument is particularly important to students' readiness for college and careers. The goal of making an argument is to convince an audience of the rightness of the claims being made using logical reasoning and relevant evidence. In some cases, a student will make an argument to gain access to college or to a job, laying out their qualifications or experience. In college, a student might defend an interpretation of a work of literature or of history and, in

> the workplace, an employee might write to recommend a course of action. Students must frame the debate over a claim, presenting the evidence for the argument and acknowledging and addressing its limitations. This approach allows readers to test the veracity of the claims being made and the reasoning being offered in their defense. (Hillcocks, 2011, p. 17)

The process of developing and defining an argument in writing with claims and human reasoning is at the heart of secondary writing within the CCSS. Teaching students to develop CT and human reasoning in writing is best done through explicit direct instruction (Marin & Halpern, 2011). Explicit direct instruction is needed to teach metacognition and organizational markers that are predictors to essay writing success (Uccelli et al., 2013). The researchers also found that there is a link between organizational markers and a student's stance in the quality of writing. Students who had clear organization in their writing and are able to take a stance in a persuasive genre demonstrated a higher quality of writing (Uccelli et al., 2013). Demonstrating a higher quality of writing requires explicit instruction from teachers in the metacognitive process of writing, development of organizational markers, and strategic strategy development.

Critical thinking may be explicitly taught in writing (Marin & Halpern, 2011). Teaching CT skills first, and then embedding them into content explicitly, helps students achieve a higher level of CT (Ambami et al., 2008). Embedding CT explicitly into writing requires teachers to have an understanding of the cognitive process of writing. Writing is considered to be a cognitive process that increases the level of meta-knowledge. Saiz and Rivas (2011) claimed that "meta-knowledge allows us to

direct, organize, and plan our skills in a profitable way and it acts once skills have begun to function. The final goal must always be desirable knowledge of reality; greater wisdom" (pp. 35-36). Metaknowledge, also known as metacognition, is the process that individuals undergo when writing. Negretti (2012) used multiple definitions to describe the foundation of metacognition. Negretti utilized Zimmerman and Schunk's (2010) definition of metacognition as the ability individuals have in controlling their learning, behaviors, and goals. Writing is a form of transferring an individual's thinking into written form. This process of metacognition is the core of CT (Facione, 2007).

Regan and Berkeley (2012) stated, "When students clearly understand and accurately employ the steps of a cognitive strategy, students are better prepared for guided and independent practice" (p. 280). Kuhn and Crowell (2011) examined a multiyear intervention program that used argumentative reasoning skills. The multiyear intervention established argumentative reasoning skills and dialogic arguments to determine if CT can be developed through metacognitive skills (Kuhn & Crowell, 2011). Kuhn and Crowell also indicated that although writing and argumentative reasoning were a part of instruction, dialogic argumentation was able to develop due to the emphasis on "higher order thinking that is increasing importance in the contemporary world" (p. 551). This skill not only enhances writing but also develops expository skills, collaboration, and reflection (Kuhn & Crowell, 2011). To develop CT in writing, dialogic argumentation may be used to foster higher-order thinking skills. Dialogic strategies promote the reflecting process of metacognition by students providing a statement, description, explanation, and argument of thought (Daniel et al., 2004).

When students use the reflective process of metacognition, they analyze, take control of their thinking, and develop a connection between thought and written form (Daniel et al., 2004). If teachers understand metacognition functions and begin to explicitly teach strategies, the level of knowledge, argumentation, reasoning, comprehension, and higher-order thinking will increase in students (Ku & Ho, 2010). In addition, when students are able to reflect on their writing by using CT skills, they are more prepared to write analytically and complete writing tasks with a higher level of rigor (Quinlan, 2012). Writing is a form of problem-solving by metacognitive monitoring (Quinlan, 2012). Hudd, Saurdi, and Lopriore (2012) examined writing and CT as an emerging skill in sociology courses. Hudd et al.(2012) found that writing helps launch inquiry between reading and in the development of ideas. This back and forth paradigm develops original thought through an analytical process of creativity, writing, and CT.

Developing an analytical process where CT in writing is implemented will require teachers to understand the constructs of CT and the delivery of strategies that will promote the growth of metacognition. Bensley and Murtagh (2012) claimed that "Although someone may have CT skills and be disposed to use them, that person will be less likely to use the skills appropriately if unaware of when to use them or if lacking knowledge for how to deploy them in a particular situation" (p.6). Not knowing when to use the CT skills in writing may be a reason why students have difficulty writing and understanding the task at hand. To remedy this situation, there are multiple self-regulated strategies that can assist students, as well as teachers, in understanding when, why, and how to use metacognitive strategies in writing.

Developing CT skills in writing can be done through a self-regulated development model (SRSD). SRSD instructional models consist of metacognitive strategies that can assist students through the thinking process while writing (Santangelo, Harris & Graham, 2008). It is "a flexible instructional model that complies with that mandate by helping students explicitly learn the same kinds of planning, drafting, and revising strategies that are used by highly skilled writers" (Santangelo, Harris & Graham, 2008, p. 78). By incorporating SRSD, writing becomes simplified and organized, a defined course of action takes place, and metacognition is developed throughout the writing process (Santangelo et al., 2008). In order for the SRSD model to be implemented in a Southern California district, six specific stages must be applied: "Stage 1: Develop background knowledge, Stage 2: Discuss it, Stage 3: Model it, Stage 4: Memorize it, Stage 5: Support it, Stage 6: Independent Performance" (Santangelo et al., 2008, p. 82). These steps, when done continuously, can create a bridge for students to understand their own thinking process.

Harris, Graham, and Mason (2006) examined the effectiveness of SRSD in writing among low-income struggling students. Harris et al. incorporated SRSD, along with the theory of social learning that states that peer support helps the mental development and thinking of students. Although the study was geared towards lower elementary students, Harris et al. found that the quality of writing was better when compared to students who did not receive SRSD. These students demonstrated a degree of transfer within the writing genres. In addition, students who were a part of the SRSD

control group acquired a higher knowledge of writing which was correlated to their writing performance.

Implementing a metacognitive instructional model and explicitly delivering instruction can increase the level of CT in writing. Coker and Erwin (2011) examined the effects of SRSD in connection with collaborative reasoning (CR) to determine the quality and level of student writing and oral arguments. When grouped together, SRSD and collaborative reasoning can create positive results in a student's written and oral arguments. Students produced better writing through the use of strategy development when given opportunities to write and engage in planning. Both SRSD and CR meta-cognitive strategies helped students develop schema and improve their understanding of the writing process by using self-reflection independently and during peer support sessions (Coker & Erwin, 2011). Overall, by teaching students genre-specific strategies and self-regulatory methods, they acquire a higher level of thinking and knowledge of writing.

Another framework for modeling CT in writing is with the use of Bloom's (1956) taxonomy. Bloom is known for the development of a higher-order thinking taxonomy that targets classification of educational outcomes. Essentially, the goal of Bloom's taxonomy educational objectives was to develop "explicit formulations of the ways in which students are expected to be changed by the educative process. That is, the ways in which they will change in their thinking, their feelings, and their actions" (p. 26). Bloom's taxonomy is used by numerous researchers and has been adapted into many writing models. Jacobson and Lapp (2010) used a revised version of Bloom's taxonomy

to develop a framework for modeling writing and critical thinking. Within this framework, six of Bloom's cognitive process dimensions were incorporated: "(1) Remembering (recognizing and recalling), (2) Understanding (interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining), (3) Applying (executing, implementing), (4) Evaluating (checking, critiquing), (5) Creating (generating, planning, producing." (Jacobson & Lapp, 2010, p. 34).

The six dimensions can assist students to conceptualize and build cognitive structures that will support their writing (Jacobson & Lapp, 2010). By using Bloom's taxonomy or a revised version, students become actively engaged in writing which results in growth in writing proficiency (Jacobson & Lapp, 2010). The ability to write at a proficient level is necessary for students. Writing is an integral part of college success and career readiness. Whether instructors use Halpern's (1998) explicit instruction models, Graham and Mason's (2006) SRSD strategies, metacognitive models, or even Bloom's (1956) taxonomy, it is critical to establish a foundation in thinking critically and in writing. This foundation is the key to student success in real world situations.

Measuring and Assessing Critical Thinking

Measuring CT alone has been a challenge for philosophers, psychologists, and educators because the measurement of CT occurs during the end results of the thinking process (Ku & Ho, 2010). The dispute between the types of programs to develop, to the assessments used, and to the measurement scales continues to be a topic of debate (Burke & Williams, 2008; Saxton et al., 2012). It especially becomes problematic when assessing secondary students. There is a lack of effective and suitable CT assessments

that measure the ability and capacity to think critically among secondary students (Giancarlo, Blohm, & Urdan, 2004). The new CCSS performance-based assessments will require students to use CT skills to identify the task, structure, and purpose in writing. Performance-based assessments will help gauge the thought process of students, invoke CT thinking, and measure cognitive skills and dispositions (Saxton et al., 2012). These assessments will bring forth a wide range of thinking skills:

> Going beyond multiple choice to include performance tasks that allow students to demonstrate research, writing, and analytical skills. The assessments are designed to give teachers the feedback they need to inform instruction and the tools to improve teaching and learning. (Smarter Balanced Assessment Consortium, 2012)

Assessing students will no longer involve bubbling in the right answer but it will require cognitive thinking skills assessed through writing.

In order to understand the new assessments, teachers, and administrators must have knowledge of previous methods and research on assessing CT and writing. Teachers must have an understanding of the content they are going to teach (Goldschmidt & Phelps, 2007). The way teachers and districts define CT determines how it should be measured (Ku, 2009). According to Ennis (2001), the purpose of assessing CT may be different for everyone. It may be used for (a) diagnostic CT testing, (b) providing feedback on CT, (c) motivating students to use CT skills, (d) using assessment data to assess instructional delivery, (e) doing research, (f) determining entrance into CT specialized programs, and (g) accountability for schools. Having a purpose as to why CT testing should occur may help schools determine what and how they will assess CT.

Assessments in CT have been disputed by experts for their effectiveness, internal consistency, stability, and construct by multiple researchers. Tests such as The California Critical Thinking Test, the Watson-Glaser Critical Thinking Appraisal, and the Halpern Critical Thinking Assessment Using Everyday Situations have been used to measure CT (Butler et al., 2012; Insight Assessments, 2013; West, 2008). The California Critical Thinking Disposition Inventory measures seven CT dispositions of individuals: open-mindedness, truth-seeking, systematicity, self-confidence, analyticity, cognitive maturity, and inquisitiveness (Insight Assessments, 2013).

The Open-Mindedness Scale is used to measure the level of being aware of an individual's biases as well as being tolerant of the views of others (Facione et al., 1999; Insight Assessments, 2013). The Truth-Seeking Scale is used to examine the desire to seek knowledge in a given context (Facione et al., 1999; Insight Assessments, 2013). A Sytematicity Scale is used to investigate the level of organization, focus, and inquiry (Facione et al., 1999; Insight Assessments, 2013). The Self-Confidence Scale is used to measure how an individual trusts his or her own reasoning process (Facione et al., 1999; Insight Assessments, 2013). The Analyticity Scale is used to examine the level of reasoning and finding evidence to support a person's claims (Facione et al., 1999; Insight Assessments, 2013). The Cognitive Maturity Scale is used to investigate how a person makes decisions. The Inquisitiveness Scale is used to examine an individual's desire to learn and level of curiosity when a foundation may not be present (Facione et al., 1999; Insight Assessments, 2013). Measuring a student's CT disposition provides educators with a road map to understanding possible gaps in an individual's level of thinking (Sosu,

2012). It also allows the educator to identify problem-solving skills and develop interventions to nurture dispositions, especially among secondary students (Giancarlo et al., 2004).

The Watson-Glaser Critical Thinking Assessment (WGCTA) is a "discourse-logic-based assessment that measures the way one thinks and process information as well as inhibiting a pressure to be bias" (West, 2008, p. 930). Another assessment in measuring CT is the Halpern Critical Thinking Assessment Using Everyday Situations. This assessment has a multiple-choice format and an open-ended response section. It is used to examine a student's level of CT through real life situations (Butler et al., 2012). Within the assessment, participants are presented with five scenarios of CT categories: "(a) verbal reasoning skills, (b) argument analysis skills, (c) skills in thinking as hypothesis testing, (d) using likelihood and uncertainty, and (e) decision making and problem solving skills" (Butler et al., 2012, p. 113; Hogan, 2012). This CT assessment presents similar characteristics as the Common Core Smarter Balance Performance Assessments that were administered in 2014-2015 school year to all California students.

To prepare students for the Smarter Balance Assessments, districts and teachers should begin to establish guidelines for assessing CT skills in writing. Bensley and Murtagh (2012) provided guidelines for administering the learning outcomes assessment (LOA) that is used to improve CT instruction. The guidelines may be applicable to teachers who want to improve their instruction and desire to understand the development of CT among their students. The first guideline is to understand CT as a multidimensional

construct (Bensley & Murtagh, 2012; Lizarraga, Baquedano & Villanueva, 2012). CT involves both dispositions and skills that may not develop at the same time (Giancarlo et al., 2004; Lizarraga et al., 2012). A person who has the capacity to think critically may not know how or when to use it (Bensley & Murtagh, 2012; Lizarraga et al., 2012). Lizarraga et al. (2012) stated that, "A person is not a critical thinker about everything and at all times, but a person is a critical thinker about some things in some contexts" (p. 272). Understanding this guideline can assist teachers in establishing goals, objectives, and outcomes for CT testing. Goals such as theoretical reasoning, methodological proficiencies, and self-reflection can be incorporated into an assessment in order to determine the metacognitive development of students (Bensley & Murtagh, 2012). The third and fourth guidelines include aligning assessments with an instructional focus and developing a task-oriented approach to CT testing (Bensley & Murtagh, 2012; Butler et al., 2012; Smarter Balance Assessment Consortium, 2012). By doing so, teachers will be able to analyze and evaluate CT in writing.

Measuring and Assessing Writing

Evaluating student writing is used by many districts to determine the level of writing proficiency in regards to organization, conventions, structure, and content. Numerous Southern Californian districts have incorporated writing benchmarks four times a year to determine the level of proficiency and whether or not English learners are ready to be reclassified. A reclassified English Learner is a student who has, "sufficient English proficiency to be reclassified [labeled] as a fluent English speaker" (California Department of Education, Reclassification, 2013). Evaluating writing is not only a

crucial process for any district but it also demonstrates a student's CT ability through metacognitive analysis (Mogey, Cowan, Paterson, & Purcell, 2010; National Council of Teachers of English, 2013). The National Council of Teachers of English ([NCTE], 2013) stated that writing is the process of thinking that at times requires students to " solve problems, to identify issues, to construct questions, to reconsider something one had already figured out, to try out half-baked idea" (para. 13). The metacognitive process begins when students start to think about what they will write.

The relationship between metacognition and writing is evident through neural and linguistic processes that assist the development of writing (Crossely, Weston, McLain, Sullivan, & McNamara, 2011). A neural process is the way in which humans use their fingers, produce letters, and orthographic information (Crossely et al., 2011). This helps establish "a rapid and flexible word-recognition system that embodies knowledge of both the regularities and the irregularities of the English orthography" (Castles & Nation, n.d., p. 151). When students are able to develop word-recognition at an early age, they are then able to transfer those skills into spelling and writing (Castle & Nation, n.d). Linguistic processing is how words, sentences, grammar, and discussions are developed (Crossely et al., 2011; Yasuda, 2011).

Linguistic processing is increasingly important in teaching second language learners how to read and write and transfer their knowledge of L1 to L2 (Yasuda, 2011). Metacognition comes into play during the planning, translating, and revising process of writing (Crossely et al., 2011). When neural and linguistic processes are in place, it becomes easier to establish metacognive processes that help to develop writing and CT.

Zareia and Amiryousefi (2011) examined the linguistic processes of English language learners when writing. Zareia and Amiryousefi revealed that when students deal with cognitive processes that are too demanding, they revert to their native language for support. This linguistic process is not only present with English learners, but it can be seen among native speakers of English. When facing a cognitive demand, students revert to the known and begin to cognitively break down information and develop associations (Reynolds, 2005; Yasuda, 2011; Zareia & Amiryousefi, 2011). When developing writing assessments, it is critical for teachers to understand the linguistic process of their students as well as their level of CT.

Assessing writing is connected to a student's level of CT. De La Paz, Feretti, Wissinger, Yee, and MacArthur (2012) stated that "The ability to generate arguments that make thoughtful contributions to historical discourse requires evaluation and interpretation of multiple sources of information, often with conflicting perspectives, in essence reflecting one's capacity for critical thinking" (p. 413). De La Paz et al. (2012) investigated how teenagers write historical arguments and the predictors for quality essays. De La Paz et al. (2012) found that with the use of multiple higher-order thinking strategies, more experienced writers were able to compose an essay that was evidence-based with quotes and elaboration on the topic. Similar results are present in the study by Kadayifci, Atasoya, and Akkusa (2012) where chemistry students learned and applied argumentation skills that resulted in medium level score of argumentation and CT. As students progress through the educational system, experienced writers are able to increase their linguistic sophistication, number of words in a text, and essay

cohesiveness; these are predictors to high-quality essay writing (Crossley et al., 2011). When students produce high-quality essays, they begin to incorporate a variety of concrete words that produce a less ambiguous text. This makes it easier for a rater to infer the meaning of the text (Crossley et al., 2011).When students are able to write well, the task then becomes for the teacher to determine the level of writing proficiency.

Assessing writing proficiency can be done in numerous ways. The initial step is for educators to take the design of the instrument into consideration. Designing an instrument to measure writing must be developed with a purpose in mind (CCCC, 2009). Weigle (2002) discussed basic considerations when assessing writing. The design of the testing instrument is usually used to assess achievement, proficiency, or diagnosis (Weigle, 2002). Writing assessments are developed for teachers to make an inference on a student level of writing or decisions either on a particular student, class, or curriculum. Assessing writing to determine proficiency consists of making decision on admissions, or placement of program or job. Using a writing assessment as a diagnostic tool consists of determining a student's instructional need (Conference on College Conference Composition [CCCC], 2009; Weigle, 2002). This same source stipulated that assessing to determine achievement is the goal of instruction and is used for grading and promotion purposes. When developing a writing instrument, the teachers must determine the purpose of the assessment beforehand. This will help establish the construct of the assessment (Dutro, Selland, & Bien, 2013; Weigle, 2002). Establishing an assessment with a purpose in mind beforehand helps to capture a student's writing ability. Teachers are encouraged to avoid high-stakes testing that does not capture a student's genuine

writing ability, thus providing only incriminating data that does not justify the overall purpose of measuring writing (Dutro et al., 2013).

Developing a writing assessment, whether it is performance-based assessment or diagnostic, will require a construct that includes all of the factors needed to measure the assessment and the task at hand including language knowledge and strategic competence (Weigle, 2002). For an assessment to have language knowledge, it should incorporate grammatical, textual, functional, and sociolinguistic elements (Weigle, 2002). Strategic competence goes hand in hand with metacognition. It is a set of strategies that "link between one's language knowledge and the external situation" (Weigle, 2002, p. 42). Establishing strategic competence will require teachers to develop writing assessments that allow students to demonstrate their language knowledge as well as their content knowledge through a problem-solving task (Weigle, 2002). When students engage in problem-solving, they apply metacognitive strategies and higher-order thinking skills that will allow them to transform their knowledge into written form. Transforming knowledge into written form is essential in the 21st century and when dealing with real-world situations.

When dealing with 21st century skills, the best type of writing assessment is a performance-based assessment where students are given a real-world task. Weigle (2002) described performance assessments as "observation of behavior in the real world or simulation of real- life activity-i.e., a performance of the ability being assessed, and the evaluation of the performance by raters" (p. 46). This task-based assessment allows students to use language knowledge and strategic competence in a real-world scenario.

Rice (2011) claimed that, **"**Well-developed performance-based assessments require students to demonstrate their mastery of the higher-order thinking skills that they will need in the real world" (p. 3). It is similar to those proposed by the Smarter Balance Assessments (Rice, 2011, p. 3). Performance-based assessments will require students not only to use content knowledge but to use metacognitive strategies that will assist them in performing the given task.

To measure a performance-based assessment, districts and teachers develop tools to measure student written achievement. Teachers have used diagnostic assessments, achievement rubrics, and rating scales to measure writing. The most commonly used scales for measuring writing are the holistic and analytical scales. Holistic scales are "takes that the entire written response take into account to assign an overall score for the performance. That is, instead of scoring writing components individually, these components are integrated into one impressionistic score" (Becker, 2011, p. 116). Holistic scoring is considered to be a form of general impression marking that has both advantages and disadvantages. Focusing on the strengths of the writer, efficient scoring, and personal reaction to reading are advantages of using a holistic rubric (Becker, 2011; Weigle, 2002). On the other hand, not distinguishing between aspects of writing, detailed diagnostic information, or rater influence are disadvantages to using holistic scales.

Analytical scales consist of "individual traits, or components, of written expression" (Becker, 2011, p. 114). Analytical scales provide detailed information of student writing (Weigle, 2002). Knoch (2009) investigated whether analytical scales resulted in valid reliable rating of writing proficiency in a diagnostic assessment. Within

the study, two analytical scales were compared and Knoch found that analytical scales are "more valid and useful for diagnostic writing assessment purposes" (p. 300). The validity of the scale helps to determine strength and weakness as well as an increase in reliability (Becker, 2011; Knoch, 2009; Weigle, 2002). On the other hand, analytic scales have a few disadvantages because they take longer to score. Also, the reliability of the scale loses its effectiveness when all scores are combined to create a composite score (Weigle, 2002). By doing this, the detailed information within the analytic scale can no longer be used.

Determining how to develop a writing assessment that encompasses CT can be a daunting task, let alone developing a scale to measure it by. The process of scoring and training teachers on how to use the scale is the next step for successful delivery and scoring of a given assessment. Becker (2011) stated that, "If teachers do not receive adequate assessment training, it is difficult to expect them to make justified decisions about how to effectively assess their students' writing" (p. 127). To make training and the scoring process a success, Weigle (2002) recommended the following steps: (a) train teachers on the instrument and scale scores; (b) writing assessments should be scored by at least two raters. A third rater may be used to settle any disputes on scores; (c) group scoring would be the most effective setting (d) group leaders should monitor the progress of scoring; and (e) evaluate the raters on their effectiveness to scoring norms and guidelines (p. 129). Schools should maintain reliable raters versus unreliable raters. By following these recommendations, schools will be able to develop reliable raters in a conducive environment for testing and scoring.

Critical Thinking in Writing and Instructional Barriers

Teachers in Southern California need the opportunity to understand the barriers they face when teaching CT in writing. By understanding the instructional barriers they face during CT in writing instruction, the level of teacher efficacy will increase, in addition to the capacity of knowledge among students. Tschannen-Moran and Barr (2004) examined the relationship between teacher efficacy and student achievement in eighth grade mathematics, writing, and English assessments. Tschannen-Moran and Barr found that there was a relationship between what teachers perceived to be self-efficacy, their belief to succeed in teaching, and student achievement. When teachers feel competent in what they are teaching and have high self-efficacy, the results can be seen in the level of student performance. However, there are numerous barriers that prevent teachers from reaching a level of self-efficacy. Snyder and Synder (2008) discussed four barriers that prevent teachers from integrating critical thinking in education: "(1) lack of training, (2) lack of information, (3) preconceptions, and (4) time constraints" (pp. 92-93). These may be possible barriers Southern Californian teachers' encounter when teaching CT in writing.

Cantrell, Burns, and Callaway (2009) studied the perception of middle and high school teachers on literacy and they found that there is a relationship between instruction and a teacher's perception on preparedness and knowledge of content. Cantrell et al. discuss barriers of low- and high-implementing teachers when using new literacy strategies during instruction. Some barriers discussed in the study were the level of knowledge and experience the teacher had of the new strategy, classroom management,

and planning time. Cantrell et al. also highlight the significance of the gaps present between low- implementers and high-implementers. Low-implementer teachers encountered more barriers that prevented the implementation of the new literacy strategies. This comparison is a tool in understanding possible barriers that high and low-implementing teachers encounter within Southern California.

Low-implementing teachers as well as high-implementing teachers in Southern California may encounter some level of discomfort and anxiety when teaching CT in writing. Cantrell et al. (2009) examined the perception of middle and high school content teachers on literacy and professional development during the initial implementation phase. Teachers in this study indicated that discomfort and anxiety about teaching something new became a barrier that prevented them from effectively implementing literacy strategies. In addition, teachers had a level of skepticism and reluctance at the beginning of an implementation phase (Cantrell et al., 2009). Depending on the level of experience, some teachers were reluctant to try a new strategy or approach due to a fear of doing the strategy incorrectly, thus feeling a sense of failure (Cantrell et al., 2009). Feeling a sense of failure is not something teachers want to feel during instruction. Within Southern California, this may be a reason as to why many teachers fail to effectively implement district initiatives in CT in writing. The level of experience and knowledge may have an impact on their ability to teach (Murley, Keedy, & Welsh, 2008).

Underwood (2012) applied the theory of planned behavior in Japan to high school teachers to determine their beliefs of integrating grammar-and-communication-oriented teaching. The theory in itself is "designed to explain and predict human behavior and to

provide a framework for devising behavioral change interventions" (Underwood, 2012, p. 912). The theory included three components of human behavior: behavioral beliefs, normative beliefs, and control beliefs (Underwood, 2012). Time, training, and insufficient resources may be reasons that lead to negative attitudes and perceptions of new strategy implementation (Gatt, 2009; Snyder & Snyder, 2008; Sun, Penuel, Frank, Gallagher, & Young, 2013). These barriers may have an impact on teacher motivation.

Teachers may also encounter a lack of motivation or knowledge that may prevent them from meeting the needs of students. Self-determination, also known as motivation, is defined as "the extent to which an environment is autonomy supportive, controlling, or a motivating will influence the degree of the intrinsic motivation an individual feels toward a given activity" (Wagner & French, 2010, p. 153). These authors also used the Deci and Ryan self-determination theory to examine factors in the workplace that affect teacher motivation. Wagner and French found out that there is a correlation between the factors teachers encounter at the work place and their intrinsic motivation. Teachers who felt that they had supportive administrators, had professional development, and felt the environment was positive were more motivated than their counterparts (Wagner & French, 2010). Identifying what motivates teachers to work is crucial in embedding CT in writing successfully. Underwood (2012), states that a teacher's motivation and/or intention can impact the overall effectiveness of instruction

The effectiveness of instructional practices in core academic subjects was the focus of the mixed method case study conducted by Teague, Anfara, Wilson, Gaines, and Beavers (2012). Teague et al. measured instructional practices through the use of

questionnaires, interviews, and observations of middle school teachers. These researchers found that middle school teachers lack knowledge on instructional practices and do not effectively implement middle school philosophy. The lack of professional development and political climate was also evident among all middle school teachers in the study. Teague et al. also discussed the need to provide professional development that is relevant and goes beyond the initial certification. There was a disconnection between what middle school teachers believe to be effective practices and what actually were observed during the study.

Teaque et al. (2012) discussed the role administrators' play in the development and delivery of effective instruction. Administrators need to develop an atmosphere of shared leadership and a supportive environment where effective instructional practices are encouraged (Gatt, 2009; Sun et al., 2013; Teaque et al., 2012). Developing an atmosphere of shared leadership and support may help teachers' transition into next generation assessments. The Smarter Balance assessments are next generation assessments that will require students to respond in written form. Evaluating writing by using technology will better prepare students to take these assessments. Due to a limited amount of time to handwrite a response, students may find it easier to proceed in answering a performance task via typing. However, in the study by Mogey et al. (2010), only 16 out 204 participants preferred typing than the handwritten response. Out of the 16 students, the majority of those students were considered to be above average. Although there were some limitations present in this study, some possible barriers that prevented students from wanting to type an essay may be the lack of prior opportunity to type,

typing abilities, and typing speed (Mogey et al., 2010). These barriers can prevent the successful assessment of CT in writing and hinder the results from the Smarter Balance Assessments.

Determining the effectiveness of instructional practices and assessments may be difficult for teachers to identify. In the study by Grosser and Lombard (2008), CT abilities were examined in first-year student teachers to determine traditional and individualist approaches to instruction. Grosser and Lombard found that teachers do not have the necessary knowledge CT abilities past 12th grade. A lack of knowledge and skills may also be factors as to why CT in writing may be a barrier to teachers within Southern California. In order to overcome these barriers, teachers should "become competent thinkers who can identify and solve problems and make decisions by using creative and critical thinking" (Grosser & Lombard, 2008, p. 1373). When teachers have the capacity to critically think and analyze problems, they will be able to teach students effectively.

Implications

It is pivotal to understand the barriers high school teachers' encounter when teaching CT in writing. As Southern California districts begin to implement CCSS, the necessity to develop a plan that incorporates CT in writing will better prepare students to become problem solvers. Snyder and Snyder, (2008) stressed that, "Simply put, students who are able to think critically are able to solve problems effectively" (p. 90). In the business world, a desired skill is not only to write effectively but to think critically and

solve problems efficiently (Snyder & Snyder, 2008). Students of the 21st century need critical thinking skills to succeed in college and career.

In the results of the study, possible barriers may be in instructional pedagogy, school climate, and other constraints that prevent teachers from teaching CT in writing productively. A professional development plan to train teachers in CT and writing may be developed to build instructional capacity. Steps to improve instructional capacity along with a timeline for implementation may be established. The plan might consist of goals, an implementation timeline, strategies, activities, professional development, and monitoring tools. Strategies and materials may be developed to support the implementation and success of the plan.

Summary

This literature review highlighted concepts, theories, and research that have impacted the development and implementation of CT and writing. Researchers have illustrated the urgency to address the barriers that high school teachers encounter when teaching CT in writing. The need for teachers to have the necessary instructional capacity to teach CT in writing was emphasized while instructing in an explicit method and embedding metacognitive strategies throughout the writing process. When teachers fail to have the necessary knowledge, time, and motivation to teach, they encounter barriers that may hinder the success of students. The following methodology section will further investigate the possible barriers ELA teachers encounter when teaching critical thinking in writing to 15 to 17 year olds. The methodology section will discuss the design of the

study, research participants, research site, data collection, analysis, and limitations of the proposed study.

Section 2: The Methodology

Introduction

The purpose of this qualitative case study was to determine the perceived barriers English Language Arts (ELA) teachers encounter when teaching critical thinking in writing. In Section 1, I described the conceptual framework for this proposed study and interconnected it with a wide range of literature on critical thinking, writing, and instructional barriers. The review of literature interconnected theories, concepts, and research that laid the foundation to further investigate possible barriers teachers encounter when teaching critical thinking in writing. It illustrated how critical thinking and writing remain to be necessary skills and concepts for students to master. Barriers such as teacher pedagogy may hinder instruction and affect student performance (Grosser & Lombard, 2008). It is also important to keep in mind that some high schools within Southern California have a low performance in writing and CT. The average word analysis on the CAHSEE was 48%, writing strategies was 43%, and written conventions was 49%; there was an average score of 2.2 on essay applications (California Department of Education CAHSEE Test Results, 2011d). With the low performance in writing and the substantial review of literature, it was evident that problems exist in teaching critical thinking in writing.

As Southern California districts approach the commencement of the Smarter Balance Assessments, the level of rigor and writing requirements needs to increase. The Smarter Balanced Assessments are performance-based tasks that will require students to

apply CT skills within the context of real-world problems (Smarter Balance Assessment Consortium, 2012). The performance tasks measure a student's problem-solving abilities through extended responses in combination with technology and research. With this in mind, the purpose of this study was to examine the barriers Southern Californian high school teachers may encounter when teaching CT in writing. In addition, the factors that contributed to low performance in writing and CT were uncovered.

Establishing an understanding of the phenomenon being studied was essential prior to beginning the data collection process. For the purpose of this study, the essential phenomenon being studied was the perception of the barriers high school ELA teachers encounter during CT in writing instruction with 15 to17 year old students. CT and writing are fundamental components that, when paired together, can have a lasting impact on student achievement (Grosser & Lombard, 2008; Ku, 2008; Snyder & Snyder, 2008). In order to have an impact on student achievement, a comprehensive understanding of the barriers ELA teachers encounter when teaching CT in writing was a prerequisite to acquiring a solution to the low performance in writing and CT in Southern California. To better understand this phenomenon, a qualitative case study took place.

A qualitative case study allowed the researcher to investigate, "how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences" (Merriam, 2009, p. 5). A qualitative researcher investigates the way people interact, their experiences, and how they construct meaning of the world around them (Merriam, 2009). To understand and construct meaning, qualitative researchers must become observers who have questioning stance to the phenomenon,

think inductively, and develop description of the phenomenon (Merriam, 2009). In a qualitative case study, the research design should include the following five components: "(1) case study's question; (2) its proposition, if any; (3) its unit(s) of analysis; (4) the logic linking the data to the proposition; and (5) the criteria for interpreting the findings" (Yin, 2014, p.29). These five components lay the foundation for any research design and allow the researcher to define each step of the process.

The initial component of designing a case study question requires the researcher to clarify the nature of the study. After designing the case study, the researcher proceeds to examining the scope of the study to better determine propositions that will lead to identifying potential research and evidence to support the study (Yin, 2014). The third component requires the researcher to define the case and bound the case (Yin, 2014). When defining a case, a researcher must examine the potential case study questions and propositions to better determine how participant information will be collected (Yin, 2014). This process leads to bounding a case. Bounding of a case ensures that the people identified to be in the case study are distinguished from outside individuals (Yin, 2014). After bounding a case, the researcher links data to propositions. This component covers the overall design of the study and requires the researcher to use analytic strategies for analyzing data (Yin, 2014). The final component of a case study establishes the criteria for interpreting the findings. This component ensures that a strategy is developed for identifying and explaining the research findings.

For this proposed case study, I carefully selected the research question that solidifies the purpose of this study. The unit of analysis was high school English

Language Arts (ELA) teachers who teach critical thinking in writing to 15 to 17 year old students. I particularly sought permission from the participants through informed consent and by formally communicating the nature of my study in order to attain their voluntary participation. The instrument used to collect data was a series of specific questions that helped determined the possible barriers ELA teachers' encounter when teaching CT in writing. I asked the questions using semistructured interviews. These provided me with the ability to ask open-ended questions in a conversational manner. These also allowed me to corroborate findings in answering the research question. I collected data by conducting one-on-one semistructured interviews and taking field notes. The semistructured interviews were short case study interviews that took an hour to conduct. Field notes occurred in conjunction with the interview. I evaluated the data through transcription of the interviews and organization of the field notes. I transcribed the interviews and notes, codes and themes were developed and analyzed for possible answers to the research question. I developed a comprehensive plan compiled from the results of the study. In order to provide an in-depth analysis of the research methodology used in this study, a discussion of the qualitative design of the case study and its justification, participants, data collection, and the data analysis process is provided in the following section.

Qualitative Design Description

The design and approach selected for this study was a qualitative case study. The intent of this study was to determine and understand the perception of the barriers ELA teachers encounter when teaching critical thinking in writing. A qualitative case study

was an appropriate approach that takes place when "a researcher provides an in-depth exploration of a bounded system (e.g., an activity, an event, a process, or an individual) based on extensive data collection" (Creswell, 2013, p. 617). Hancock and Algozzine (2011) discussed characteristics that define case studies. First, a case study is used to address an individual of a group, organization, or a phenomenon (Hancock & Algozzine, 2011). Second, the individual, organization, or phenomenon is bounded by location and time (Hancock & Algozzine, 2011). A bounded system is "a single entity, a unit around which there is a boundaries" (Merriam, 2009, p. 40). Qualitative case studies provide holistic accounts within a bounded system; it is necessary to establish a bounded system within a qualitative case study.

Xu (2013) established a bounded system by selecting four fourth- year undergraduate EFL teacher participants who demonstrated a positive outlook on EFL teaching. This bounded system allowed Xu the opportunity to examine the novice stage of teacher development by identifying influences and schemas built over time among a group of participants. Bounding a case helps, "determine the scope of one's data collection and, in particular, how one will distinguish data about the subject of the case study ('the phenomenon') from data external to the case (the 'context')" (Yin, 2012, p. 34). Bounding a case study provides the researcher with a more focused approach to answering a research question successfully.

Another example of a bounded system was in the study by Wolfensberger, Piniel, Canella, and Kyburz-Graber (2010). Wolfensberger et al. purposefully established a bounded system comprised of only in-service teachers. Wolfensberger et al.'s

assumptions were based on the idea that in-service teachers have a professional knowledge that can assist in understanding the reflective component of teaching when conducting classroom discussions on socio-scientific issues. In both examples, the researchers established bounded systems that assisted in answering the research question.

Hancock and Algozzine (2011) stated that case studies provide descriptions of a given phenomenon. Merriam (2009) stated, "Qualitative case studies share with other forms of qualitative research the search for meaning and understanding, the researcher as the primary instrument of data collection and analysis, an inductive strategy, and the end product being richly descriptive" (p.39). All of the data collected during this research process aided in the development of rich descriptions and build a deeper understanding of the phenomenon. By understanding the characteristics of a qualitative case study, it became easier for the researcher to determine the type of case study to use.

There are numerous types of qualitative case studies from which to choose. In this study, I used a qualitative case study to explore and understand the perceptions of the barriers high school teachers encounter when incorporating CT in writing during ELA instruction to 15 to 17 year old students. The qualitative case study included an explanatory design. In an explanatory case study design, the, "primary purpose is to determine how events occur and which ones may influence particular outcomes" (Hancock & Algozzine, 2011, p. 37). For this study, the explanatory case study design allowed me to identify and explain the possible barriers teachers encounter during CT in writing instruction. The case study consisted of, "an accurate description of the facts of a case, considerations of alternative explanations, and a conclusion based on credible

explanations that are congruent with the facts" (Harder, 2010, para. 1). An explanatory case study was the most suitable design for this intended research.

A qualitative case study allowed me to better understand the perceptions of teachers by developing a thick description of the research phenomenon. Thick descriptions are "complete literal description of the incident or entity being investigated" (Merriam, 2009, p. 43). Establishing a case study where interviews are conducted assisted the researcher in attaining information that cannot be directly observed or determined in a survey (Creswell, 2012). The qualitative case study selected for this study provided the necessary thick descriptions through the process of interviewing participants, coding the data, and analyzing the codes.

Expert Feedback

Expert feedback on interview questions was conducted prior to the approval of this research study. The intent of attaining expert feedback was to reveal any possible deficiencies present in the design of the interview questions (see Appendix D). The essential goal was to determine the validity of the interview questions, grammatical structure, and whether or not the questions provided the necessary data. For the purpose of attaining feedback on the interview questions, a single individual was selected. The participant, a 9th grade ELA expert teacher, agreed to provide feedback on the interview questions.

Based on the results of the review of the research questions, I made organizational and design changes to the majority of the interview questions. Changes made ranged from grammatical suggestions to rewording of entire questions (see

Appendix E). Ambiguous questions were reworded or removed from the study. For example, deficiencies in possible responses of question five and nine prompted me to remove each question. The expert reviewer stated that the data from these two questions lacked depth and contained ambiguity. Questions one, four, six, seven, and eight were reworded due to grammatical errors and validity concerns. The participant suggested changing the grammatical structure of the questions. Validity is, "based on test content, a response processes, internal structure, relations to other variables, and the consequences of testing" (Creswell, 2012, p. 630). I examined each question for validity to determine if it measured what it intended to measure in relation to the structure of each question, responses, and content of the data collected. This process provided me with valuable insight on the scope of each research question through the lens of the expert reviewer.

Participants

Description of Participants

The selected research site for this proposed study was a high school within a Southern California school district. The high school was selected based on state public data that indicate low performance in writing with the CAHSEE, CST, and CELDT. The intent of selecting the participants was to establish sample size of English Language Arts (ELA) teachers within a school district who voluntarily participated in the proposed study. The selected participants comprised of English Language Arts high school teachers who teach critical thinking in writing to 15 to 17 year old students.

Sampling was based on Creswell's (2012) description of purposeful sampling. Purposeful sampling was used for selecting "people or sites who can best help

researchers understand a phenomenon and to develop a detailed understanding" (p. 207). Purposeful sampling occurred when the researcher intentionally identifies individuals and locations to further understand the research question (Creswell, 2012). A specific site or individual provided rich descriptions of the phenomenon being studied. Under the umbrella of purposeful sampling, there are numerous types of sampling techniques. For the purpose of this study, I intentionally selected ELA high school teachers within a Southern California high school. By doing so, the collection of rich descriptions allowed me to establish themes and trends that helped identify barriers ELA teachers encountered when teaching CT in writing. I also incorporated a homogenous sampling technique. Homogenous sampling techniques allow the "researcher purposefully sample individuals or sites based on membership in a subgroup that has defining characteristics" (Creswell, 2012, p. 209). The defining characteristic of the subgroup in this study was ELA high school teachers who teach in a Southern California school district. This also became the bounded system for the case study. The selection of participants was small enough that it provided me with the ability to learn and understand the perceptions of each individual. The essential goal of this study was to understand the participants' perceptions of the barriers they encounter during CT in writing instruction.

Procedures

Before I began my research with the participants, I obtained permission to conduct research from a Southern California school district with a formal letter of cooperation (see Appendix B). That letter contained "the purpose of the study, the amount of time I will be at the site collecting data, the time required of participants and

how I will use the data or results" (Creswell, 2012, p. 147). When I received approval from the University Research Review (URR) board, I gained initial permission to conduct research from the three high schools, gained access and consent from participants, and I began collecting data.

Creswell (2012) recommended identifying the gatekeeper of a particular school. Creswell claimed a "gatekeeper is an individual who has official or unofficial role at the site, provides entrance to a site; helps researchers locate people, and assists in the identification of places to study" (p. 211). Possible gatekeepers for high schools in Southern California were the director of curriculum instruction, principal, curriculum specialist, assistant principals, or a community liaison. Establishing a relationship with a gatekeeper allowed me to gain the necessary access to the participants and insight to school. The gatekeeper received information that clearly explained the purpose of the study and research. Creswell suggested answering Bilken's (1998) questions for gatekeepers,

- Why was their site chosen for the study?
- What will be accomplished at the site during the research study (i.e., time and resources required by the participants and yourself)?
- How much time will the researcher spend at the site?
- What potential there is for the researcher's presence to be disruptive?
- How will the researcher use and report the results?
- What the individuals at the site will gain from the study? (p. 212)

Bilken's (1998) questions provided me with an outline that assisted the gatekeepers' understanding of the research study. By answering these questions beforehand, the researcher provided the gatekeeper with an overview of the purpose of the study and research. This information was also part of the participant's consent letter (see Appendix C). Once I received consent, a homogenous sampling technique took place from the pool of possible participants. A homogenous sampling technique allowed the researcher to select "individuals with only similar attributes" (Lodcio, 2010, p. 141). The similar attribute among ELA high school teachers was that they were teachers who taught CT in writing.

Once participants were selected, the next step was to provide them with an informed consent form (see Appendix C). An informed consent form was a statement that all participants must sign prior to the start of the study. This form was used to establish the necessary framework to ensure participants of their rights (see Appendix C). The form included the rights of the individual, voluntary participation, right to withdraw, purpose, procedures, right to ask questions, and the right to receive results, risks, benefits, and signature (Creswell, 2012, p. 149). By providing an informed consent form, participants understood their rights and purpose for the study. This became an essential component in establishing ethical protection of participants. For this study, informed consent forms were used.

Moreover, providing participants with the nature of the study prior to the start allowed them to make a decision as to whether to participate in the study or not. When participants and institutions understood the nature of the study, they became more

receptive and willing to partake without fear during the research process. It was the researcher's role to limit harm and eliminate possible fear a participant may encounter.

When conducting qualitative research, a researcher has the potential to influence a participant's behavior, causing emotional distress or a hurtful experience (Lodico, 2010). Steps were taken to avoid such distress by taking into consideration the actions and questions asked during the interview process. I established an interview protocol that outlined the "instructions for the process of the interview, the questions to be asked, and space to take notes of responses from the interviewee" (Creswell, 2012, p. 225). The interview protocol assisted me in establishing questions that do not cause harm to the participant while still investigating the research question (see Appendix F).

Further measures to ensure confidentiality among participants were taken within this study. Pseudo names were used to remove identifying information for each participant and institution. By doing so, participant information was kept confidential and limited the possibility of causing harm to participants. Likewise, I ensured confidentiality by maintaining all files in a secure location. They will be maintained for five years after publication (American Psychological Association, 2010). A secure location ensured that all documents are maintained private. If any information is to be made public, I plan to contact the participant and seek further approval to release information. Harm to any individual or institution being studied was avoided.

Data Collection

Data collection was an integral part of the research process. In this study, the data collection was qualitative in nature. Such data were from interviews and field notes. The

units of analysis for this study were ELA teachers who taught CT in writing to 15 to17 year old students. The purpose of the research questions was to investigate the perception of the barriers ELA teachers encounter when teaching CT in writing. By conducting interviews, the researcher was able to "obtain a special kind of information. The researcher wants to find out what is 'in and on someone else's mind" (Patton, 2002, p. 341). Creswell (2012) stated that researchers who use a qualitative research methodology know that the problem being investigated requires them to understand the perception of participants, assess the results, develop theories based on data, and gain detailed information about participants and the research site. Gaining detailed information was essential to understanding the phenomenon of this proposed study.

A qualitative researcher investigates the views of the individual in order to understand the phenomenon being studied. In regards to this study, I investigated the views of ELA teachers and interpreted the barriers they encountered when teaching CT in writing. The process of collecting data and attaining access occurred once permission has been granted from the University Research Review Board (URR). The interview process took place only once per participant. Most of the interviews lasted an hour each.

Analytic Strategies

When I collected the data from ELA teachers, I was able to establish trends and possible themes. This helped me understand the phenomenon and revealed barriers that prevented ELA teachers from teaching CT in writing successfully to 15 to17 year old students. Thick descriptions were established when I began to describe and interpret "social actions and assign purpose and intentionality to these actions, by way of

understanding and clear description of the context under which the social actions took place" (Ponterotto, 2006, p. 542). When a researcher uses thick descriptions, it leads to the development of interpretations and meaning of the data by capturing the thoughts and essence of the participants and phenomenon being studied (Ponterotto, 2006). Thick descriptions were developed by establishing an analytic strategy to support the creation of possible codes and themes in the data.

Yin (2014) discussed the need to develop an analytic strategy that helps the researcher understand possible patterns, themes, or interpretations that may emerge from a study. By establishing a variety of analytic strategies, I was able to develop thick descriptions. An analytic strategy included,

- Putting information into different arrays;
- Making a matrix of categories and placing the evidence within such categories, creating data displays-flowcharts and other graphics-for examining the data;
- Tabulating the frequency of different events; and
- Putting information in chronological order or using some other temporal scheme (Yin, 2014, p. 135)

In addition to the strategies mentioned above, Yin (2014) suggested juxtaposing data from multiple interviews to determine if possible trends occur. By examining multiple interviews, I was able to compare and contrast possible trends and patterns. Taking notes and memos such as field notes was incorporated into the data collection process. Taking

notes and memos allows the researcher to conceptualize the data by reviewing clues, hints, or suggestions.

Once the data from the interviews and the notes were collected, I examined the data from the ground up. Examining data from the ground up requires delving into the data and identifying possible patterns (Yin, 2014). This was an inductive analytical strategy that allowed me to make connections between multiple interviews. In addition to examining data from the ground up, I developed a case description for each interview. Developing a descriptive framework helped me to use the data collected from the ground up process to determine the case study's main conclusion and develop thick descriptions. A descriptive framework was not established until approval was provided from the URR and permission to collect data was granted.

Structure of the Interview

The interviews were conducted in a neutral location to eliminate any possible distractions. The interviews were conducted in person or through a telephone call. The interviews were semi-structured. These interviews provided the participants the opportunity to discuss their perception of the barriers they encounter when teaching critical thinking in writing. Sub-questions were used to elicit more information from the interviewee. The research question and sub-questions helped understand the variables that caused a lack of critical thinking in writing (see Appendix E). The questions assisted me in determining the possible causes and effect of certain critical thinking, writing, and instructional barriers. The interviews were conducted one-on-one by means of face-to-face communication or over the telephone. The interview lasted between 30-60 minutes.

The interviews were recorded used Dragon Software © 2013 Nuance Communications. Dragon Software is speech recognition software that allows a person to record and transcribe the information onto a computer. During the interview, I took notes using the interview protocol. The interviews occurred before prep period, during prep period, after school, or over the phone.

Role of the Researcher

The procedures for gaining access to participants occurred after URR approval. The role of the researcher was to gain access by asking permission to conduct research from local school districts. After initial access, I identified the gatekeepers and permission to conduct research on chosen high schools was requested. Participants were provided with consent letters. After consent was given to each participant, interviews were conducted. I did not allow my personal knowledge on critical thinking or writing interferes with this research study. I remained neutral and eliminated possible biases present during the data collection process. In addition, my role as an administrator did not interfere with the data collection and participant selection.

For this study, I collected qualitative data from interviews and field notes. I obtained consent, conducted the interview, audio taped the question and response, took notes, identified a suitable place for the interview, had a flexible plan, used probes, and used courtesy (Creswell, 2012). I was the sole collector of data during the data collection phase. As the sole collector of data, I ensured the participants that all data collected remained confidential. The raw data from the interviews were confidential and were stored in a secure filing system on a desktop computer. The computer file was password

protected. All handwritten documents were filed into a locked file cabinet located at the home office. All names on the files were de-identified to ensure confidentiality. The purpose of de-identifying files was to ensure that all information from participants is kept confidential and secure. Raw interview data is available upon request. Data analysis on possible codes and themes from the interview process is found in the appendices.

Data Analysis

In this study, a qualitative process of data analysis took place. Creswell (2012) suggested using a bottom-up approach to analyzing and collecting data. The initial step was for the researcher to collect and prepare the data. The data was extracted from interviews and field notes. The data were derived from the interview. After the transcription took place, NVivo © was used for data analysis (QSR International Pty Ltd, 2013). This program is computerized software that allows the user to code qualitative data and mixed method data through a series of tools that assists the researcher in identifying key points and patterns in research (QSR International Pty Ltd, 2013). With the use of this computerized program, the coding process took place. The coding process described by Creswell (2012) was employed. Creswell (2012) stated that the text data should be read, divided into segments, labeled segments into codes, reduced the number of code, and collapsed codes into themes (p. 244). This process helped me to analyze the data and develop thick descriptions from the interview and field notes.

At the conclusion of the data collection process, there were no discrepant cases present. I ensured the accuracy and credibility of the findings by member checking and triangulating data. Member checking occurs when the researcher asks participants to

review the accuracy of the data (Creswell, 2012; Lodico, Spaulding & Voegtle, 2010; Yin, 2014). With regard to interviews, the participants reviewed the transcripts for accuracy (see Appendix K). The review of transcripts helped establish the validity of the data collected. In addition to member checking, triangulation took place. Triangulation occurs when the researcher corroborated with a variety of evidence from different individuals, methods, and types of data (Creswell, 2012; Lodico, Spaulding & Voegtle, 2010). For this study, multiple data were analyzed from the participants' interviews and field notes. Both sets of data helped to ensure that the data collected was accurate and valid.

Case Information

There were a total of four participants in this case study. The four participants worked within the same district in three different high schools. Each high school has the same demographic composition. The participants did not have a personal relationship with one another, but they attended district-wide common core training. Each participant met the sample criteria and had similar characteristics. Table 1 demonstrates the characteristic of each case.

Table 1.

Case Characteristics of Participants

Case	Numbers of Years Teaching	Over 70% English Learner	Title 1 Funding	AVID ELA	AP Lit or Comp	SDAIE ELA	Regular ELA
1	24	X	X	X	X		X
2	5	X	X	X		X	X
3	14	X	X			X	X
4	10	X	X	X	X		X

Table 1 indicates that each participant had five or more years of experience teaching students, who, for the most part, teach to English learners and to students who receive Title 1 funding. Title 1 funding falls under the Elementary and Secondary Act for federal government funding that focuses on students who are disadvantaged. Title 1 provides school districts with monetary funding to help improve the academic achievement of disadvantaged youth. Furthermore, each participant reflected a wide range of English Language Arts courses. Each course was aligned to state standards and required specific instructional materials and strategies for instruction.

Case 1

The school in Case 1 bordered a neighboring district. Students attending this school qualify for Title 1 funding and were mostly English learners. The participant at this site had 24 years of teaching experiences. Ten of those years were dedicated to teaching mathematics, and the last fourteen years focused on instruction in English Language Arts. The participant attained a Bachelor of Arts in both Math and English Language Arts, a single subject credential in English Language Arts, a Master's in Education, and had recently completed an Administrative Credential.

Case 2

Similar to Case 1, the demographics of the second site were students who receive Title 1 funding and who are mostly English learners. The students attending this particular site need additional attention due to behavior. The participant in this case indicated that the majority of students at this particular site were students who transferred from other sites due to discipline. The students were thus sent to this particular site for

academic and behavioral support. The participant at this site had five years of teaching experience, attained a Bachelor of Arts in Education, a single subject credential in Literature, a combined Master's in Education and Administrative Credential, and she is in the process of attaining a Doctorate in Administration.

Case 3

The demographics in the second site are similar to Cases 1 and 2. This particular site had the largest student population and it is in the heart of the inner city. The participant in this case has 14 years of classroom teaching experience. The participant had a Bachelor of Arts and Master's in English and a single subject credential in English. She started her teaching profession at the same site where she is currently employed.

Case 4

Case 4 participant was from the same location as participant in Case 3. The participant in Case 4 had been teaching for ten years at the same school site. The participant attained a Bachelor of Arts and Master's in English, a single subject teaching credential, an administrative credential, and is currently debating whether to enter a doctoral program. In addition to teaching high school students, Participant 4 does freelance writing lessons for various consulting companies. This participant indicated that the freelancing consists of developing writing templates and easy to follow writing prompts.

Findings

The four cases produce abundant information concerning the barriers teachers encounter when teaching critical thinking in writing. The guiding research in this study focuses on the central research question, - What is the perception of the barriers high

school teachers encounter when incorporating CT in writing during ELA instruction among 15 to17 year-olds? After reviewing and coding the data into themes, a connection between teacher pedagogical knowledge and the instructional capacity of teachers as a barrier to teaching critical thinking in writing is present. To ensure that the guiding question is answered, there were eight sub-questions asked during the interview. Each sub-question targets possible barriers teachers encounter as well as the level of pedagogical knowledge including a discussion of instructional strategies in critical thinking, writing, and motivation of students. Out of the four interviews, only one of the participants allowed for an audio-taping of the interview (see Appendix G).

During the interview process, I used field notes and uploaded the field notes onto NVivo software © for coding. The three participants, who declined audiotaping, demonstrated a general distrust of recordings due to past experience of district administration which suggests political agitation within their district. The participants discussed a strong dislike with new district administration and with the generally new school-based administrative team.

Building a relationship with the gatekeeper allows the collection of data to occur efficiently. A gatekeeper is an individual at a school or district who has direct access to participants. The gatekeeper provided a list of two to three participants per high school who fit the characteristics stipulated in the methodology. The gatekeeper of the high schools has valuable information on the teachers who teach critical thinking in writing. Based on the information provided by the gatekeeper, I contacted the possible

participants by phone. A total of four participants consented to be part of the study. Therefore, four interviews took place.

The transcribed interviews were organized into codes; then, the codes were collapsed into themes. Creswell's (2012) and Yin's (2014) recommendations for coding interviews is part of the coding process. The coding process consists of reading each interview, identifying repetitive segments, making notes, identifying keyword and phrases, and collapsing similar codes into themes. Evidence of data accuracy is evident through the collection of field notes (see Appendix J), transcripts (see Appendix K), member checking, and triangulation. Themes and categories presented in Table 2 emerged from the interviews.

Table 2

Case Study Themes and Categories

Theme	**Category**
School Based Barriers	Time Lack of Technology Negative School Climate
Teacher knowledge of Critical Thinking	Depth of Knowledge Blooms Overall lack of knowledge of Critical Thinking and Writing
Students lack critical thinking abilities	Understanding Motivation Critical Thinking Low Performing Students
Limited critical thinking strategies	Depth of Knowledge Bloom Questioning Advancement Via Individual Determination Strategies Classroom Discussions Graphic Organizers
Basic writing strategies used during instruction	Prewriting and brainstorming Writing templates Writing Process
Support needed to build critical thinking in writing to students as well as teachers.	Critical thinking strategies application Translating Critical Thinking into Writing Examples of Critical Thinking with Writing

Each participant response was recorded and the frequency of responses led to categorizing trends and establishing themes (See Appendix G). Developing an analytic strategy assisted me in understanding possible patterns, themes, or interpretations that may emerge from this study (Yin, 2014). Data is presented in Figure 1.

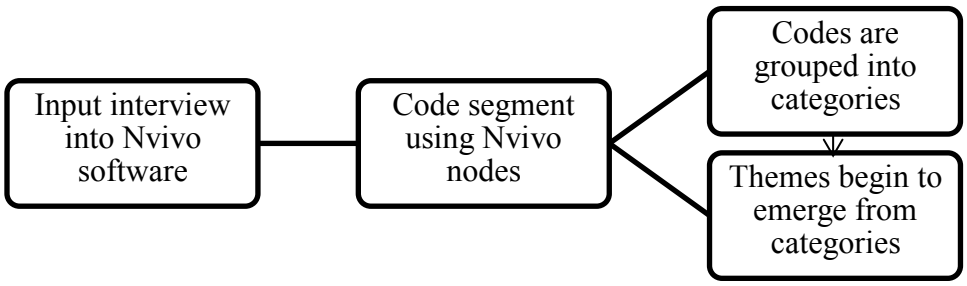

Figure 1. Analytic strategy

NVivo software breaks down information into a variety of nodes. Once each interview was uploaded into NVivo, I started to code the information. A node in NVivo software refers to the academic term of a code. As I highlighted and labeled each segment, NVivo counted the nodes. I grouped the nodes into a matrix of categories that helped to develop and identify themes. I was able to juxtapose the data from multiple interviews to determine if possible trends occurred. I compared each interview and determined that there were key themes present.

Themes

The first theme, school-based barriers, derived from asking interview questions five and one. Interview question five directly addressed the possible school-based barriers teachers encounter when teaching critical thinking in writing. Interview question one addressed the barriers teachers encounter when teaching critical thinking in writing. Time was the most frequent response indicated in connection with school-based barriers. Interviewees discussed that there is a lack of time in preparing lesson plans, delivering critical thinking instruction, scheduling of the bell and influencing instruction, and time to impact instruction. Second to the barrier of time, was the lack of technology as a recurring response. Interviewees discussed the lack of available computers, laptops, and

WiFi access to students throughout the school day. One interviewee indicated, "The lack of technology makes it difficult for me to present my lessons. Even though, I may know how to integrate technology into critical thinking I just do not have the resource at work" (Case 2, 2014).

In addition to technology, the overall negative school climate was indicated in each interview as a school-based barrier. Interviewees felt that student discipline, teacher morale, and work environment were indicators of the negative school climate. The National Association of Secondary School Principals ([NASSP], 2010) suggested that, "A school's climate contributes to the academic success of its students and predicts the degree to which they actively participate in learning, including how consistently they attend school, how attentive they are in class, how carefully they complete their class assignments, and how committed they are to staying in school and doing well there" (NASSP, 2010). School climate has a direct impact on a student's ability to critically think and apply their thinking into writing.

The second theme established was in reference to the level of teacher knowledge. Teacher knowledge was determined based on the interviewee responses. The California Standards for Teaching Profession (2009) highlights the importance for teachers to have a variety of strategies, "to introduce, explain, and restate subject matter concepts and processes so all students understand and help all students learn, practice, internalize, and apply subject-specific learning strategies and procedures" (Commission on Teaching Credentialing, 2009, p.6). It is important for teachers to ensure that all students

understand the content and are able to internalize their learning. In doing so, students become more prepared to think critically and apply their knowledge in writing.

There were three categories within the second theme that connected to the level of teacher pedagogy. The first category responses connected to Norman Webb's (1997) Depth of Knowledge (DOK). Norman Webb developed a process and criteria that helped educators identify the cognitive complexity within standards, curriculum and assessment (as cited in Michigan Department of Education, 2009). The criteria was divided into four levels; one was the lowest cognitively demanding descriptors and four was the highest. Participants referred to the four different levels of Webb's DOK wheel as a tool for developing lessons or higher order questioning. The reference to DOK was not one in which interviewees demonstrated a deep knowledge of application. They were referencing DOK as the newest terminology of the common core state standards. Interviewees did not provide explicit examples on how they integrated or implemented DOK questioning or task development into critical thinking or writing.

The second category of teacher knowledge was the reference to Bloom's Taxonomy. Bloom's taxonomy is the classification of learning objectives that has been used in education as a resource for building curriculum, lesson design, and as a tool to ensure students meet the highest level of learning objectives. In each interview, Bloom's taxonomy was referenced as part of their knowledge of critical thinking. The interviewees did not express deep knowledge of applying Bloom's taxonomy into questioning. Similar to Bloom's, participants discussed the use of Advancement Via Individual Determination (AVID) as a strategy to evoke critical thinking. AVID is

designed to accelerate learning by using a wide range of research-based strategies to build the critical thinking of students and prepare them for college and career readiness. Strategies such as philosophical chairs and Socratic seminar were discussed in reference to AVID. AVID's way of learning, peer tutoring, or other strategies were not mentioned. Overall, a deep explanation of theory or their understanding and application of DOK, Blooms, or AVID was missing from their responses. Participants were able to state the strategy but they did not elaborate on their responses.

The third theme that emerged from the interview data was the lack of knowledge among the students. Interviewees indicated that their students demonstrated a low level of understanding when it came to thinking critically. Interviewees discussed how students were not able to complete a complex task in high school without teacher assistance. In addition, lack of motivation was an indicator that demonstrated a student's lack of ability when attempting a critical thinking task in writing. Students do not have the self-motivation to complete a task. Interviewees emphasized that students entering their English language arts courses in high school were performing below basic level. One interviewee indicated that although she teaches advanced placement AP literature composition, students' lack a deeper understanding and application of critical thinking.

The fourth theme that was evident in the interview findings was the lack of critical thinking strategies. Similar to the theme of teacher pedagogical knowledge, Norman Webb's Depth of Knowledge, Bloom's taxonomy, graphic organizers, and AVID strategies were among the consistent categories discussed by the participants. The participants did not provide exact examples of strategies. In each interview, the

participants associated DOK to the common core state standards. One of the participants mentioned that she received a series of DOK trainings during the instructional year but she still needed to learn how to apply DOK to tasks. Graphic organizers were also discussed as a tool to help students build their thinking as well as Bloom's level of questioning. Bloom's level of questioning in two instances was referred to as a past practice.

The fifth theme that arose from the interview data was a basic understanding of writing strategies. Participants were asked to identify the effective writing strategy they incorporated during instruction and how they designed a lesson that embedded critical thinking in writing. The responses provided indicated that all participants shared a basic understanding of writing. All participants discussed how they used a linear five step writing process where students had the opportunity to brainstorm ideas, develop a draft, revise, edit, and publish their writing. Although this process is what they are familiar with, the process did not provide enough opportunities to complete published works of writing due to the demand of high school curriculum and the lack of student writing abilities. One participant discussed the relationship between the lack of student writing ability and her own teaching ability to delve into the writing process at its fullest extent. She discussed how students come to her class unprepared to write a quality high school paragraph let alone an essay or a report. The lack of knowledge among students prevents her from going any further into developing their thinking and writing thus, making her instructional focus one in which she builds foundation skills. In addition, all participants

indicated a wide use of graphic organizers ranging from Thinking Maps to teacher developed organizers to help students with writing.

The final theme identified was the type of support teachers need to teach critical thinking in writing. I asked participants to identify the support they need to teach students to develop their critical thinking in writing skills. Participants indicated the need to attain greater knowledge on how to apply critical thinking in writing strategies. Participants discussed that although they know the importance of developing critical thinking they did not see it translated successfully into writing. One participant indicated that her students had a difficult time demonstrating their thinking during writing, but they had the capacity to think critically orally. Finally, all participants discussed a need for more examples and professional development on critical thinking in writing.

Throughout the collection of the data and the development of the five themes, there were no discrepant case; thus, no further analysis took place. Erickson (n.d.) and Becker's (1958) analysis on authenticating research was used in the data analysis process (Creswell, 2012; Yin, 2014). Erickson referred to Becker's (1958) research criteria for authenticating information collected during the research process:

1. How credible was the informant?
2. Were statements made in response to the researcher's questions, or were they spontaneous?
3. How does the presence or absence of the researcher or the researcher's informant influence the actions and statements of other group members? (Erickson, n.d.).

Authenticating information occurred through member checking and by triangulation; thus, no flaws in logic and bias were present. Identifying if there were any flaws in logic assisted me in determining that there were no discrepant case present. Asking for feedback provided me with an unbiased analysis of the data. Furthermore, interviews were compared to each other to increase the authenticity of the data; resulting in no discrepant cases.

In addition to validating the accuracy of the findings, it was important to display the findings in a comprehensible layout. The findings were represented through a written report. The written report has text that "describes and analyzes the case" (Yin, 2014, p. 183). The report includes tables and charts that illustrate key data points. The report has a linear-analytic structure, which is a standard approach for reports (Yin, 2014). A linear-analytic structure begins with the problem, literature, and subtopics. "The subtopics then proceed to cover the methods used, the data collected, and the data analysis and findings, ending with the conclusions and their implications for the original issue or problem that had been studied" (Yin, 2014, p.188).The written report provides a comprehensible analysis of the case study data via an analytic structure.

Resources Needed

After I analyzed the data, it was evident that there was a need for professional development and resource alignment in the area of critical thinking and writing. The California Standards (2011) for the Teaching profession indicated that,

> Teachers are never "finished" as professional learners, no matter how extensive or excellent their formal education, preparation, and experience. If teachers'

> expertise, capabilities, and accomplishments are to be enriched overtime, they must be reflective and actively seek to strengthen and augment their professional knowledge, skills, and perspectives in support of student learning.(California Teacher Standards, 2009, p.6)

The California Teaching Standards provides educators with a framework to ensure that their practices are aligned to the student's best interest. The above excerpt discusses the need for teachers to be reflective and seek to strengthen and increase their capacity. Increasing the instructional capacity of teachers is crucial with the emergence of the CCSS. The CCSS requires educators to seek or revamp their instruction to ensure that students master the set of rigorous standards. Participants in this study were able to verbalize the name of a particular strategy, but did not provide explicit examples on how to apply the strategy. As an area for support, each participant indicated a desire to build his/her instructional knowledge on critical thinking and writing. Each participant discussed the need to receive specific examples and strategies that would help their students increase their level of thinking. This type of support is crucial in the transition to the Common Core State Standards.

Project Development

The proposed professional development plan and resource alignment may assist the participants and ELA teachers district-wide in ensuring students receive the necessary critical thinking in writing. Such plan and resource alignment consists of a specific focus on strategies and materials to ensure that all English Language Arts teachers begin to implement critical thinking in writing instruction to high school students. Based on their

responses, educators were knowledgeable with key terms associated with critical thinking and the new common core state standards but may not know the ‘how’ in applying the information. The ‘how’ is what the professional development plan needs to focus on.

Conclusion

This proposed study was designed to investigate the perceptions of the possible barriers ELA teachers encountered when teaching critical thinking in writing to 15-17 year old students. Among high school students, there was an increase of low performance in critical thinking and writing which makes it difficult to perform well on the Smarter Balance Assessments. The assessments require high schools students to apply critical thinking skills and writing within the context of real-world situations (Smarter Balance Assessment Consortium, 2012). For the purpose of this study, this qualitative case study was employed to understand the phenomenon.

Section 3: The Project

Introduction

The qualitative case study research conducted provided the necessary information on the level of teacher pedagogy, instructional, and school-based barriers connected to the lack of critical thinking in writing present among 15-17 year old students. Based on the data from the semistructured interviews and field notes, there was a documented need to develop a professional learning program that may assist teachers in increasing their level of pedagogical knowledge and the application of new knowledge into instruction. This type of learning focuses on specific content and learning that must be connected to the real world (Cole, 2012; Guskey & Kise, 2014; Killion, 2013). Establishing a connection to the real-world can help increase critical thinking in writing.

The professional learning program will be designed to ensure that English Language Arts teachers who teach 15-17 years olds are equipped with critical thinking and writing pedagogy, strategies, and collaborative planning time. The multi-tiered professional learning program will build the instructional capacity of teachers and administrators by developing a coaching support program, and a system for monitoring the implementation and innovation of critical thinking in writing (Figure 2).

Table 3., *Critical Thinking in Writing Three Tiered Program, outlines the essential goals of each tier.*

Tier	Goal	Participants	Number of Professional Development Hours
Tier 1: Direct Professional Development to ELA Teachers	Goal 1: Develop Teacher Knowledge: In depth research analysis on critical thinking and writing theories (30 hours) ▪ Bloom's Taxonomy ▪ Depth of Knowledge ▪ Metacognition and Writing Goal 2: Unpacking Instructional Strategies - provide professional development on instructional strategies for critical thinking in writing ▪ Direct and guided instruction on how to breakdown critical thinking processes: Such as the term, "to analyze." What does analyze mean, what background knowledge do students need to analyze, and instructional strategies to teach. Goal 3: Instructional units on critical thinking in writing (40 hours). Teachers will develop instructional units	All ELA Teachers administrators	30 hours
Tier II: Coaching support for designated teacher and administrator per site.	Goal 1: Coaching support Goal 2: Establish an instructional coaching schedule per site.	1 ELA teacher 1 Administrator	30 hours
Tier III: Monitoring support for administrator per site.	Goal 1: Each administrator will be trained alongside with teachers. They will receive specific training on monitoring of strategies and providing support and guidance to coaches and teachers.	Administrator	Ongoing

This proposed professional learning program will address the themes that were gathered and highlighted as barriers that ELA teachers encounter in the teaching of CT.

Tier 1 Goals

Tier 1 professional development will consist of three professional development goals. The initial goal is to ensure that all English Language Arts teachers increase their

instructional pedagogy by conducting a research analysis on critical thinking and writing theories that align to common core practices. Teachers will receive 30 hours of professional development integrating Bloom's taxonomy, depth of knowledge, and most importantly building meta-cognition within writing. The research and methodology surrounding these strategies and models for professional development are substantial (Halpern and Riggio, 2002; Herman & Webb, 2007; Hillcock, 2011; Munzenmaier & Rubin, 2013; Partnership for the 21st Century, 2011; Webb, 2007). I conducted semi-structured interviews that demonstrated a surface level knowledge of Bloom's taxonomy and depth of knowledge. There was a lack of deep application of theories and researched-based strategies in the participant responses. There is a need for teachers to understand fundamental research and theories for the application and implementation of critical thinking in writing (Halpern and Riggio, 2002; Herman & Webb, 2007; Hillcock, 2011; Munzenmaier & Rubin, 2013; Partnership for the 21st Century, 2011; Webb, 2007). A professional learning program that establishes structures will assist teachers in attaining an understanding of the desired outcome (Darling-Hammond, Wei, Andree, Richardson & Stelios, 2009; Emerling Bradley, & Gallimore, 2013; Fogarty & Pete, 2009). Structures can help assist teachers in identifying key strategies to implement.

The second goal will focus on unpacking professional development strategies that can help English Language Arts teachers to disaggregate and understand how to teach a specific critical thinking skill. For instance, to understand how to analyze a problem or text, a teacher must understand the various ways the verb "to analyze" is interpreted by a student. Developing this understanding allows the teacher to identify the method and

structure needed to teach this particular critical thinking skill within a problem or text. The third goal targets the development of critical thinking in writing units. In order for teachers to apply new knowledge, instructional units will be incorporated into the professional development. Teachers can use these units to connect content with critical thinking and extend to writing. Effective professional learning models discuss the need for participants to adapt and connect learning to everyday instruction (Fogarty & Pete, 2009; Mindich & Lieberman, 2012). By teachers having the opportunity to build instructional units, they will apply new information in designing new modes of instruction.

Tier 2 Goals

The study conducted by Spelman and Rohlwig (2013) further discusses the connection between professional development and student learning. They highlight the need to provide coaching alongside professional development. Providing only professional development is not sufficient enough to sustain growth (Spelman & Rohlwig, 2013; Toll, 2005). Thus, developing a coaching model may ensure that teachers receive the necessary support in building their instructional pedagogy and develop a reflective teaching practice (Lenski, et. al, 2006; Toll, 2005; Trach, 2014). Building their instructional pedagogy and establishing a reflective practice may establish a foundation in integrating the new common core state standards as may be implied by testing results.

Instructional coaching may foster an opportunity to develop a relationship with colleagues that allows room from constructive feedback and critical friend discussions

(Cretroni, Miller & Waylett, 2013; Lenski, et. al, 2006). "The new standards call for a focus on student learning, time for teacher reflection, and the atmosphere of collaborative inquiry because teachers are called upon to teach in ways they did not experience themselves as students" (Heineke, 2013, p. 410). The report from the National Council on Staff Development (2009) discussed the need for teachers to develop their own critical thinking in order to teach students how to think critically (Darling-Hammond, Wei, Andree, Richardson & Stelios, 2009). By doing so, teachers build higher order thinking skills and content pedagogy (Darling-Hammond, Wei, Andree, Richardson & Stelios, 2009; Halpern & Riggio, 2002). Infusing critical thinking in writing instruction allows for a smoother transition into effective common core instruction.

Following the coaching sessions, a coaching schedule will help to ensure follow-up support for teachers is calendared. Slater and Simmons's (2001) research on peer coaching defined peer coaching and discussed how to implement peer coaching. Coaching models should include a timeline for implementation that provides training to teachers, orientation meetings, pre and post feedback sessions, analysis of data, and evaluation of peer evaluation program (Borko 2004; Slater & Simmons, 2001; Lenski, et. al, 2006; Lieberman & Pointer Mace 2008; Strahan, Geitner & Lodico, 2010). As part of the coaching model, peer and post conferences can assist teachers in establishing a reflective practice and help to increase instructional capacity. Analysis of student data may help to determine whether the critical thinking in writing strategies have an impact on student formative and summative assessments (Fogarty & Pete, 2010; Slater & Simmons, 2001). The data, alongside with coaching observations and feedback, may

help to determine next steps in professional development and coaching support. During this process, it is important to keep in mind that, "when teachers were actively engaged in the thinking, expressing their own ideas about next steps might indicate their level of ownership or buy-in" (Hieneke, 2013, p.421). During the coaching phase, coaches must build a relationship of trust (Fogarty & Pete, 2010; Hieneke, 2013; Slater & Simmons, 2001). Building a relationship with participants allows the coach to provide constructive feedback during the pre and post conference.

Tier 3 Goals

The third tier of the professional development program consists of providing support to administrators. The qualitative data I acquired from the interviews indicated that administrative support is not present. Participants indicated the lack of administrative support in the area of instruction, behavior, and technology. There is a need to establish specific training on monitoring the implementation of professional development strategies and in providing support to administrators and teachers. Tier 3 is designed to provide administrators with the necessary tools to establish a multi-tiered professional development for English Language Arts teachers within their school.

Teachers, who receive a multi-leveled support, have the highest level of impact on self-efficacy, instruction and implementation of new strategies (Fullan, Ford & Frank, 2015; Heineke, 2013; Wei, Darling-Hammond & Adamson, 2010). Administrators can monitor the implementation of critical thinking in writing strategies by identifying evidence of implementation such as teacher modeling of strategies, student engagement, higher order thinking among students, and production of student work in critical thinking

in writing. Administrators can be part of the Tier 1 and Tier 2 training. By being part of Tier 1 and Tier 2 training, administrators can build their critical thinking and content pedagogy alongside their teachers. Wei, Darling-Hammond, and Adamson's (2010) executive summary on professional development in the United States concluded that it is important for high-quality professional development to include a connection to school practices, content, and opportunities to sustain strong working relationships among colleagues. By incorporating administrators in each tier of the professional development program, they may understand critical thinking in writing strategies, develop effective practices for monitoring the strategies, and sustain strong working relationship with teachers and coaches.

In addition to participating in Tier 1 and Tier 2 professional development, administrators will receive specific training on developing a school-based observational tool focused on teaching critical thinking in writing. It is important to incorporate local decision-making that is centralized and focused to the needs of teachers and the school (Fogarty & Pete, 2010; Fullan, Ford &, Frank, 2015; Lenski, et al, 2006; Wei, Darling-Hammond & Adamson, 2010). Fogarty and Pete (2010) emphasized the need to enlist the assistance of teachers when sustaining professional development. Teachers have the capacity to create school improvement when given time, support, goals, and facilitation (Fogarty & Pete, 2010). Developing an observational protocol may help administrators and teachers develop goals, review observational feedback, and determine next steps. An

effective leader must build the capacity and create long lasting support systems for professional growth (Learning Forward, 2011). Professional growth is the key to student growth.

Second Review of Literature

Professional learning occurs when, "education professionals—teachers, administrators, and others—actively learn (through critical analysis of practice, reflection on their own teaching, collaboration with colleagues, and other interactive tasks) the knowledge and skills needed to improve teaching, leading, and student learning" (California Department of Education ELA/ ELD Framework, 2014). A professional learning program can be the navigational system that puts conditions and structures into place (Killion, 2013; Hadar & Brody, 2012). Conditions and structures can establish the capacity for not only teachers but for administrators to give and receive feedback (Burke, 2013; Goldring, Mavrogordato & Haynes, 2015). Furthermore, it is important to also take to consideration the overall transfer, implementation, and role of professional development takes within a classroom (Marrongelle, Sztajn & Smith, 2013). In the proposed multi-tiered professional learning program, the goal is to develop a program that provides teachers multiple tiers of long lasting instructional support in the area of critical thinking and writing. Along with teachers, administrators and site coaches will have extended opportunities to build their leadership and coaching capacity. In order to build a systematic professional learning program, a review of literature on professional development and instructional practices was conducted.

A professional learning program has the potential to address the barriers English Language Arts teachers encountered when teaching critical thinking in writing. The review of literature provides evidence that substantiates the need for a professional learning program that builds pedagogical knowledge over a period of time, provides job-embedded learning experiences, and multiple opportunities for collegial discussion and planning (California Department of Education, 2012; Darling-Hammond, Wei, Andree, Richardson & Orphanos, 2009; Fogarty & Pete, 2009; Marrongelle, Sztajn & Smith, 2013). It is evident from the data collected that ELA high school teachers are in need of increasing their pedagogical knowledge on critical thinking as well as developing strategies to teach high school students the necessary thinking skills. The problem may be addressed through a multi-tiered structured professional learning program that is designed to build the instructional capacity of teachers, provide coaching support, and establish a system for administrative monitoring and teacher feedback. Designing a professional learning program with multiple tiers of support requires careful planning and research on effective professional learning from site and district leaders.

Research conducted by the Southwest Regional Educational Laboratory (2007) reviewed over 1,300 studies on the impact of professional development and student achievement. Out of the 1,300 studies, only nine met the Institute of Education Statistics What Works Clearing House evidence standards. The Institute of Education Statistics is a branch of the U.S. Department of Education that uses a systematic research process to helps districts and educators make informed researched based decisions (Institute of Education Statistics, 2014). One of the major points in the Southwest Regional

Educational Laboratory (2007) was that the, "average of 49 hours in the nine studies can boost their students' achievement by about 21 percentile points" (p. 1). In addition, Wei, Darling-Hammond, and Adamson's (2010), discussed the need to have at least 50 hours of support for teachers to improve instructional pedagogy, to apply changes, and to become more effective. Providing teachers with over 49 hours of professional development can be an instructional and financial challenge for some districts, but it is needed in order to establish the correlation between professional development and student achievement (California Department of Education, 2014; Marrongelle, Sztajn & Smith, 2013; Southwest Regional Educational Laboratory, 2007; Wei, Darling-Hammond, & Adamson, 2010). Once hours are allocated for professional learning, sound research based theories and strategies should be the foundational focus.

A thorough, critical, interconnected analysis of professional development theory and research was used to support the content of the project. The Fogarty and Pete (2009) model of professional learning is incorporated into the proposed professional learning program as one of the foundational professional development models. Fogarty and Pete discussed the seven characteristics of effective professional development and the necessity for educational systems to integrate the steps into program development. The first characteristic explained the importance of developing a sustained professional learning program that occurs over a period of time and provides participants multiple opportunities to develop and increase their instructional capacity (Fogarty & Pete, 2009; California Department of Education, 2014). In the study by Brody and Hadar (2012), the researchers analyzed the trajectory of professional development within four stages; the

stages were anticipation and curiosity, withdrawal, awareness, and change. For change to occur, professional learning should not only entice curiosity, but build a teachers' instructional and motivational capacity (Brody & Hadar, 2011). In addition to enticing curiosity, a teachers' career stage should be taken into account (Angeline, 2014). Within a school, teachers' careers range from possible induction to competency building to career exit (Angeline, 2014). To address the needs of all teachers at different career stages, motivation autonomy, relatedness must be addressed (Angeline, 2014). When multiple opportunities are provided, teachers are more likely to engage in new learning.

The second characteristic Fogarty and Pete (2009) emphasized was to develop professional development programs that are job-embedded and allow participants the opportunity to receive additional support such as coaching (Fogarty & Pete, 2009). Peer coaching can have a positive impact to both the recipient and provider (Burke, 2013; Jao, 2013). Jao (2013) studied the effect of peer coaching as a method for generating professional growth. Jao highlighted that peer coaching is a valuable job-embedded practice that can develop trust, a deeper level of feedback, and increase collaboration (Jao, 2013). In conjunction, Burke's (2013) found that teachers who experienced peer coaching, observation, and feedback demonstrated a long term effect on professional development. For professional development to have a long lasting impact on student growth, opportunities for job-embedded practices such as coaching, observation, and feedback is needed. Research on practice-based professional development for self-regulated strategies accentuated the need to provide teachers with, "time and space for teacher learning, collaboration, and sharing both during and after initial professional

development" (Harris, et al., 2012, p. 105). Tier 2 of the professional learning program will focus on establishing a coaching model to support professional learning.

The third and fourth characteristics highlighted the necessity to incorporate collegial professional learning and opportunities for interaction (California Department of Education, 2014; Dufour, 2004; Emerling Bradley, & Gallimore, 2013; Fogarty & Pete, 2009; Marrongelle, Sztajn & Smith, 2013). Interactive professional development allows participants to share best practices and gain a deeper understanding of content pedagogy (Emerling et al., 2013; Hadar & Brady, 2012; Hill, Beisiegel, & Jacobs, 2013). Sharing of best practices can become the change agent within a professional learning program (Hadar & Brady, 2012). When teachers are provided the opportunity to discuss student learning and engage in discussion about teaching practices they breakaway from isolation and withdrawal and begin to develop their instructional awareness (Brady & Hadar, 2012; Burke, 2013). Professional learning then becomes an avenue not only for processing new information but of evolving and altering a teachers' way of thinking and adapting to change.

The fifth characteristic of Fogarty and Pete (2009) model emphasized the need to develop professional learning opportunities that meet and integrate the needs of the individual (Darling-Hammond, et al., 2009; Fogarty & Pete, 2009; Emerling, et al., 2013; Hill, Beisiegel, & Jacobs, 2013). It is important to keep in mind that educators prefer to have content specific training rather than a generalized training. The sixth and seventh characteristics emphasized how to incorporate practical professional development that is applicable as well as a results-oriented approach to learning (Darling-Hammond,

Emerling Bradley, & Gallimore, 2013; Fogarty & Pete, 2009; Marrongelle, Sztajn & Smith, 2013; Wei, Andree, Richardson & Stelios, 2009). Fogarty and Pete's (2009) characteristic of professional learning was incorporated in the proposed professional learning program.

Fogarty and Pete's (2009) research and the five principles of effective professional learning will be the foundation to the development of the proposed professional learning program. The three tiered goals of the professional learning program will focus on addressing the barriers English Language Arts teachers encountered when teaching critical thinking in writing. The first tier goal will build the foundational knowledge base of critical thinking that is aligned to common core writing practices and strategies (Halpern & Riggio, 2002; Herman & Webb, 2007; Hillcock, 2011; Munzenmaier & Rubin, 2013; Partnership for the 21st Century, 2011; Webb, 2007). Professional learning programs that provide the opportunity to grow foundational knowledge with multiple program components helps to ascertain a higher quality of teaching over time (Fixsen & Blasé, 2009; Fograty & Pete, 2009; Fullan, Ford, & Frank, 2015; Hill, Beisiegel, & Jacobs, 2013; Mindich & Lieberman, 2012). The second tier goal of the professional learning program will establish a system of support for teachers (Toll, 2005; Trach, 2014; Killion & Hirsh, 2013). By establishing a multi-tiered system of support for teachers, teachers will be able to view best practices from lead coaches, receive constructive feedback, and understand the application of professional learning strategies (Toll, 2005; Trach, 2014; Killion & Hirsh, 2013; Lenski, et. al, 2006; Lieberman, Pointer, & Mace, 2008; Slater & Simmons, 2001). The final goal will

establish a system for administrative support. One of the barriers discussed among participants, was the lack of administrative support. In order to create an effective professional learning program, teachers, coaches, and administrators will be part of the program (Fograty & Pete, 2009; Killion & Hirsh, 2013; Lenski, Graham, & Wold, 2006). Each piece of research collected provides a model for building a multi-tiered professional learning program that may have the capacity to impact the way teachers teach critical thinking in writing.

Tier 1Professional Learning

The first principal of establishing a long lasting professional learning program is to ensure it provides time for participants to practice, implement, and receive support (California Department of Education, 2014; Darling-Hammond, et al., 2009; Gulamhussein, 2013). Tier 1 of the professional learning program will consist of developing the pedagogy of English Language Arts teachers on scientifically based practices. Teachers will receive 30 hours of professional development on critical thinking with an emphasis on metacognition in writing as well as building tasks that are aligned to the new revised Bloom's Taxonomy and Webb's (2007) depth of knowledge (see Appendix A). These scientifically based strategies and practices have long been researched as effective strategies to develop and promote critical thinking (Halpern & Riggio, 2002; Herman & Webb, 2007; Hillcock, 2011; Munzenmaier & Rubin, 2013; Partnership for the 21st Century, 2011; Webb, 2007). Kisa and Correnti (2015), stated that it is important to develop professional development that targets reform-aligned strategies during the professional learning process. By incorporating research-based

strategies and theories such as metacognition in writing and Bloom's Taxonomy and Depth of Knowledge, teachers will be better equipped to teach critical thinking. This in turn will result in the possibility of creating social change among their students.

In order to create social change among students, teachers will need to build their knowledge on critical thinking and writing and how it is connected to the Common Core State Standards, Smarter Balance Assessment, and real world expectations (Appendix A). By building knowledge on job-embedded priorities such as the common core and writing, teachers may be able to connect new strategies into instruction (Amendum & Frizgerald, 2013; Burke, 2012; Fogarty & Pete, 2009). Kennedy (2016) discussed the need to ensure that professional development encompasses active learning methods and collective participation for teachers to transfer learned knowledge into classroom practice. By building on their knowledge of critical thinking and writing and how it is connected to the common core, teachers will be able to transfer the knowledge effectively.

Professional learning is a social process that requires teachers to build relationships not only with new knowledge but with colleagues (Burke, 2012; Patton, et. al, 2015; Stanley, et al., 2014).Throughout the professional learning process; teachers will need multiple opportunities for collegial conversation and sharing of ideas. It is important for teachers to develop a connection between new information through numerous opportunities to interact with the presenter and participants (Blank & de las Alas, 2009; Burke, 2013; Dufour, 2004; Emerling Bradley, & Gallimore, 2013; Forgary & Pete, 2009; Kennedy, 2016; Patton, et. al, 2015). Harris, et al., (2012) indicated that in order to develop a teachers skills and understanding there must be collective participation,

discussion on strengths and needs, multiple opportunities for active learning and feedback. By providing active learning opportunities for collegial interaction and feedback, the problem of enactment that many professional development programs face may be lowered.

Enacting professional learning in the classroom is a challenge districts and professional development providers' encounter. Enacting the transfer of learning is, "a phenomenon in which teachers can learn and espouse one idea, yet continue enacting a different idea, out of habit, without even noticing the contradictions" (Kennedy, 2016, p. 3). In order to prevent such behaviors, teachers need to be motivated to learn and immediately establish a connection between what is learned with current practices (Kennedy, 2016; Lowman, 2015; Patton, et al, 2015). Within the professional learning program, the content and the delivery of instructional pedagogy and knowledge is key in creating a motivating experience that will enact teachers to change instructional habits. The change may occur during active learning opportunities and collegial discussions, which may further result in a spillover effect of knowledge that may enact other teachers to change instructional habits (Sun, Pennuel, Frank, Gallagher, & Youngs, 2013). Enactment to change behavior and actions may lead to student growth.

In the study conducted by Sun, Pennuel, Frank, Gallagher, and Young (2013), the researchers stated that the spillover effect of professional development can have an impact among teachers who did not receive direct professional development. A spillover effect occurs when, "the effects of school-based professional development on instructional practices above and beyond the direct effects on teachers who participated in

the professional development" (Sun, et al, 2013, p. 345). The study concludes that collaboration among colleges, "almost equals the effect of direct participation" (Sun, et al, 2013, p. 362). With this in mind, the professional learning program will need to include time for teachers to collaborate not only during the program but across site based professional learning communities. Woodland and Mazur (2015), stated that establishing professional learning communities can assist leaders in developing job-embedded tiered systems of support. By embedding opportunities to discuss the newly acquired professional learning, there is a higher potential for a spillover effect to occur (Patton, et al, 2015; Sun, et al, 2013, p. 362). Once new knowledge is shared, site and district leaders can begin to focus on the support structures needed to prevent potential challenges teachers may encounter when teaching new strategies in the classroom.

As mentioned, Fogarty and Pete's (2009) second principle of professional development addresses the need for professional learning programs to support teachers with challenges they may encounter when teaching (Gulamhussein, 2013; Lenski, et. al, 2006; Truesdale, 2003). Teachers must become active participants when learning new approaches (Gulamhussein, 2013; Lenski, et. al, 2006; Truesdale, 2003). In the research from Patton, Parker, and Tannehill (2015), the researchers reviewed professional development research and observations of what constituted an effective professional development program. The findings illustrated that an effective professional development program must address the needs and interests of teachers (Patton, et. al., 2015, p. 29; Stanley, et. al., 2014). By addressing the needs and challenges teachers encounter when teaching, teachers will begin to develop ownership of learning and commitment to new

instructional strategies (Patton, et. al, 2015). For the proposed learning program, teachers will have to opportunity to develop ownership of learning by actively engaging and discussing learning that is relevant to their content and interest; resulting in changing the way teachers teach critical thinking in writing thus impacting metacognition among students.

Developing students to become critical thinkers can be taught across grade levels and curricula (Abrami, Bernard, Borokhovski, Waddington, Wade & Persson, 2015; Berg, et. al., 2014). It is important during the professional learning program for teachers to carefully understand how critical thinking can develop within planning and delivery of instruction (see Appendix A) (Partnerships for the 21st Century, 2011; Buck Institute, 2015). The data collected from the semi-structured interviews as well as the field notes indicated that teachers have a surface level knowledge of the concept but not the depth in classroom application (see Appendix A). Strategies such as posing critical thinking questions, opportunities to provide dialogue, relevance to real world problems, and metacognition have a direct impact on the level of critical thinking a student can develop (Abrami, et al., 2015). The central focus of learning these strategies is to ensure that teachers understand the need to improve the learning outcome of students (Patton, et. al, 2015). By focusing on increasing learning outcomes of students, teachers can begin to understand the type of evidence needed for each desired outcome and the necessary goals needed to increase student achievement (Kollener & Jacobs, 2015; Patton, et al, 2015). Kollener and Jacobs (2015), studied the impact of an adaptive model of professional development and the alignment of goals and objectives. The findings of the study

signified that the establishment of goals and objectives can lead to critical improvement when incremental gains are made throughout the process of implementing new strategies. For the proposed professional learning program, goal and evidence alignment will assist teachers in measuring the impact of the new instructional strategy or approach.

In order for teachers to increase the learning outcome of students through goals and evidence, they will need to delve deeper in understanding the role of instructional strategies and theories within the classroom (Hill, Beisiegel, & Jacobs, 2013; Kennedy, 2016; Patton, et al, 2015) Teachers will need to develop a deeper understanding of metacognition and how to assist students in developing self-regulation during writing instruction (Appendixes A). Understanding Webb's (2007) depth of knowledge matrix alongside Bloom's taxonomy will assist teachers in developing student tasks that provide opportunities to dialogue, solve problem, and self- regulate during writing (Harris, et al., 2012; Hill, Beisiegel, & Jacobs, 2013; Herman & Webb, 2007; Munzenmaier & Rubin, 2013). By developing a deeper understanding of research based strategies, teachers can begin to establish a link between critical thinking and writing.

Mehta and Al-Mahrooqui's (2015) stated that critical thinking skills are skills that can be taught effectively when students have the opportunity to internalize their thinking and are provided with relevant context to apply their thinking (Saiz & Rivas, 2011; Van den Bergh et al., 2014). It is important not only to encourage meta-cognition within the professional learning program but it is ideal to specifically teach students how to think about thinking within the context of real world experiences (Abrami, et al., 2015; Coker & Erwin, 2011; Mango, 2010; Mehta & Al-Mahrooqui, 2015; Saiz & Rivas, 2011). An

approach such as a think aloud can help students verbalize their thinking prior to writing and can be incorporated during discourse across content and grades (Halpern & Riggio, 2002; Hayes & Flower, 1980; Klafehn, Li, & Chiu, 2013). In order for teachers to develop a profound understanding on how a strategy such as think aloud can help increase metacognition within writing, the professional learning program will use metacognitive awareness strategies as a model for developing metacognition.

Metacognitive awareness strategies can help teachers understand how metacognition can impact learning and how different strategies can help spark thinking and develop habits of mind (Dweck, 2007; Negretti, 2012).The initial awareness occurs when a teacher similar to a student is learning about a strategy, theory, or instructional approach. This type of learning develops declarative awareness (see Appendix A). It is important that during this awareness stage, teachers have the opportunity to unpack new knowledge and understand how it relates to CCSS, critical thinking, and writing (Darling-Hammond, et al, 2013; Konrad, Keesey, Ressa, Alexeeff, Chan, & Peters, 2014). Teachers will also learn new ways to spark critical thinking by designing critical thinking questions, conducting think out loud, and aligning tasks to a real world context. After teachers learn how to develop critical thinking in writing, they will begin to develop their procedural awareness.

Procedural awareness transpires when an individual is learning how to apply a strategy to a given task (Fograty & Pete, 2009; Gulamhussein, 2013; Negretti, 2012). Procedural awareness through sustained professional learning occurs when teachers are provided with knowledge, develop a strong skill set, but most importantly are able to

transfer learning with application of a given strategy or task (Fogarty & Pete, 2009; Gulamhussein, 2013; Joyce & Showers, 2002; Mango, 2010; Martinez, n.d.; Swartz, 2008). By attainment, Joyce and Shower stated, "real and strong transfer- solid knowledge, good skills, consistent implementation. They also assume a new and fairly complex repertoire," (p.78). Teachers need to feel a sense of accomplishment and an opportunity for application in order to transfer knowledge into the classroom practice and ensure that a strong skill set is developed (Cantrell et al., 2009; Gulamhussein, 2013; Joyce & Showers, 2002; Negretti, 2012; Sun et al., 2013). If teachers require their students to transfer knowledge and think critically, a professional learning program should provide the same opportunity to participants. Practicing a new skill set, developing relevancy to the educator's content, and reflecting on it can allow for a deeper transfer of new knowledge (Mango, 2010; Swartz, 2008). During day three and four of the professional learning program, teachers will be able to apply their knowledge by developing tasks and units.

After teachers understand how to apply a strategy, they begin to understand the why it is necessary to apply a knowledge (Negretti, 2012). The third awareness, conditional, occurs when the teacher is finally working within a given task because they were able to develop their declarative and procedural awareness (Fogarty & Pete, 2009; Gulamhussein, 2013;Negretti, 2012). During the professional learning program, teachers are able to delve into tasks that increase their understanding of the three metacognitive levels of awareness. Increasing metacognitive awareness assists them in transferring knowledge in the classroom (Gulamhussein, 2013; Lenski, et al, 2006;Negretti, 2012;

Paige, Sizemore, & Neace, 2013). By doing so, teachers begin to address the challenges they may encounter in the classroom and begin to understand how to implement (Gulamhussein, 2013; Mindich & Lieberman, 2012; Truesdale, 2003). Transfer must occur in order for successful implementation to take place.

The transfer of new strategies can take place within instructional units that address the new instructional methodologies (Abrami, et al., 2015; Coker & Erwin, 2011; Dixon et al., 2014; Mango, 2010; Mehta & Al-Mahrooqui, 2015; Saiz & Rivas, 2011). Within the professional learning program, teachers will develop instructional units and tasks that emphasize critical thinking in writing through learned metacognitive strategies which may lead to an increase of cognitive rigor. The demand to increase the cognitive rigor within schools is a result from the new common core state standards and state accountability system (California Department of Education, 2015; Darling-Hammond, et al, 2013; DeLuca & Bellara, 2013; Marsh & Farrell, 2015; Paige, Sizemore, & Neace, 2013; Popham, 2011). Within the professional learning program, teachers will have the opportunity to design instructional units and tasks using depth of knowledge and the revised Bloom's Taxonomy. Bloom's Taxonomy helps teachers to understand critical thinking targets that are associated to education outcomes (Bloom, 1956; Jacobson & Lapp, 2010). Teachers will also relearn how to develop tasks that are aligned to remembering, understanding, applying, evaluating, and creating new knowledge (Jacobson & Lapp, 2010). In addition, teachers will develop a deeper alignment competency on how to develop tasks that demonstrate, "dimensions of depth/complexity of knowledge, range/breath of knowledge and a balance of representation" (Deluca &

Bellara, 2013, p. 360). By doing so, there is an increase of cognitive rigor and critical thinking as evidenced in writing. During this stage, it can be emphasized that, "learning for transfer takes place when that knowledge and skill are applied to novel contexts and application" (Paige, Sizemore, & Neace, 2013). The goal is for teachers to transfer what they learned into instructional units and establish student learning goals that are tied to evidence of student achievement.

Establishing learning goals will help teachers develop an understanding of pedagogy and evidence learning but most importantly it will assist them on how to plan and differentiate instruction within a task or instructional unit (Dixon, Yssel, McConnell, & Hardin, 2014). Dixon, Yssell, McConnell, and Hardin (2014) examined the connection between differentiation, teacher efficacy, and professional learning. The study stated that the ability of a teacher to differentiate instruction demonstrated not only a deeper understanding of pedagogy but an instructional process by which diverse learners can attain success (Dixon, et al., 2014). Thus, for the professional learning program teachers will develop an understanding of critical thinking strategies in writing and how to differentiate instruction. Teachers will learn how to differentiate by how,

> Teachers who differentiate their instruction respond to learner needs in the way content is presented (the content dimensions of differentiation), the way content is learned (the process dimension), and the ways students respond to the content (the product dimension) (Dixon, et al., 2014, 113)

By applying a new understanding of content and differentiation into unit designs, teachers will transfer their learning and become intellectuals as well as an instructional

technician (Dixon, et al., 2014; Gulamhussein, 2013; Darling-Hammond, et al, 2013). Furthermore, within each instructional unit, teachers will be able to meet the needs of diverse learners.

Tier 2 Coaching Support

In order to sustain a long-term professional learning program, coaching support will be embedded (Burke, 2012; Costa, Garmston & Anderson, 2002; Darling-Hammond, et al, 2013; Edwards, 2014; Jao, 2013; Joyce & Showers, 2002; Killion & Hirsh, 2013; Lenski, et al, 2006; Spelman & Rohlwig, 2013; Toll, 2005). Fogarty and Pete (2009) fifth principle of a sustaining an effective professional learning discusses the need to ensure that professional development addresses a specific discipline (Darling-Hammond, et al, 2013; Fogarty & Pete, 2009; Gulamhussein, 2013). In order to address a specific discipline, which is critical thinking in writing, the proposed program will use data analysis to guide the coaching model. Coaches and administrator will work towards understanding the coaching process through data and how their role can help to sustain growth and increase reflective thought (Burke, 2015; Costa & Garmston & Anderson, 2002; Edwards, 2014; Joyce & Showers, 2002; Killion & Hirsh, 2013; Spelman & Rohlwig, 2013; Toll, 2005). Opportunities for reflective-thought with data provide participants the necessary time to create metacognitive pathways.

The use of data throughout the coaching process is needed to understand next steps within a professional learning multi-tiered system. Coaches and administrators will have the opportunity to review multiple sets of data such as the California Standards Assessment results from Smarter Balance Consortium, California English Language

Development Test, and district local assessments in English. Additional data such as unobserved and observed data is important to include when determining whether professional development is cemented into classroom practice (Barrett, Butler, and Toma, 2013). Barrett, Butler, and Toma (2013) discussed the importance of including multiple sets of data when determining whether professional development has an impact on student achievement. In order to determine the longitudinal impact of professional development, quantitative, unobserved, and observed data must be included in the data analysis process of professional learning (Barrett, et al., 2013). During the data analysis process, coaches will need to understand how data can be used to change instruction and determine dimensions for student growth especially in the area of critical thinking (Babrick-Santoyo, 2012; Barrett, Butler, & Toma, 2013; Heriatge, Kim, Vendalinski & Herman, 2009; March & Farrell, 2015; Olah, Lawrence, & Riggan, 2010). As participants of the professional learning program submerge into the data analysis process, it will be important for them to focus on building capacity and the impact on student learning.

The goal in professional learning is not to evaluate but to build capacity among teachers in order to impact student learning (Heritage et al., 2009; March & Farrell, 2015; Olah et al., 2010). From the data, participants will understand where a potential gap in student mastery of critical thinking and writing is present and how to better design units of instruction. It is essential for coaches to understand that data alone cannot cause change (March & Farrell, 2015). Once coaches and administrators have an understanding of the data, they will precede into understanding the coaching process and how it can sustain growth among teachers.

The coaching process consists of providing participants with tools to develop cognitive coaching and strategies to build the instructional capacity of teachers. Cognitive coaching is a coaching model in which coaches are neutral, encourage self-directed learning, mediate thinking of the teacher and ultimately help the teacher develop their own internal resources for solving their instructional problems (Costa et al., 2002). Within the coaching model the coaches role will be "responsive, facilitating individual change and principal were 'directive, facilitating system-wide change" (Ippolito, 2010; Killion & Hirsh, 2013; Mangin & Dunsmore, 2015, p. 23). Teachers are equipped with the instructional pedagogy but most likely need the support in addressing instructional unit planning or dilemmas that may arise when teaching critical thinking in writing. The role of the coach is not to give the teacher the answers but to metacognitively walk them through a self-reflection process; it is a matter of tapping into their thinking (Costa et al., 2002; Edwards, 2014; Joyce & Showers, 2002; Merriam, Cafarella & Baumgartner, 2007; Stanley, Snell, & Edgar, 2014). Stanley, Snell and Edgar's (2014) discussed the unique role mentors have on the sustainability of professional learning. As a mentor or coach, a person not only walks participants through a self-reflection process but they themselves build confidence and increase their understanding of the content; thus, the role of coaching has a dual impact on sustainability (Stanely, et al., 2014). Coaches will learn how to pose questions that elicit self-reflection in order to increase the level of consciousness among teachers when teaching critical thinking in writing.

Costa and Garmston's (2014) cognitive coaching seminar series highlighted the need to pose questions that are invitational, engage cognitive thinking, and are purposeful

for the educator. Participants of tier II of the professional learning program will be able to practice developing questions that pose cognitive thinking and allow the coachee to self-reflect. It is important for coaches to develop communication skills with adult learners and ensure that a level trust and rapport is established (Costa et al., 2002; Edwards, 2014; Killion & Hirsh; Mangin, & Dunsmore, 2015). Coaches have to be equipped with strategies to help teachers change their practice and thinking (Patton, Parker, & Tannehill, 2015). By having a basis for effective communication, coaches develop stems for discussing change and in turn treat the teacher as an active learner. Similar to their students, teacher must come to an understanding that in order to grow professionally they must be active learners with self-reflection, meaning making, and inquiry (Patton, Parker, & Tannehill, 2015). Developing these metacognitive indicators of active learning will help to establish change strategies.

In addition to establishing cognitive communication questions, coaches need to be fully equipped with change strategies (Mangin & Dunsmore, 2015; Lenski, et al, 2006). Change strategies are strategies that can cause a change in instruction and student outcomes (Mangin & Dunsmore, 2015). Coaches need to feel comfortable to model, discuss, and plan instructional units around critical thinking in writing. Having a depth of knowledge around critical thinking in writing with an emphasis on meta-cognition allows coaches to follow-up with teachers. During Tier II, coaches will have the opportunity to practice strategies in small group and refine their skill set prior to coaching teachers (Costa et al., 2002; Edwards, 2014; Mangin & Dunsmore, 2015). Furthermore, coaches have the opportunity to develop goals that are aligned to the needs of their particular site.

By establishing goals, coaches can begin to establish a structure for observing, providing feedback, and increasing the reflective thinking among teachers.

Tier 3 Monitoring Support

Tier III is designed to develop the instructional capacity of administrators at each site. When designing a professional learning program, it is important to establish support systems for administrators that can impact teaching and leadership (Fogarty & Pete, 2009; Babrick-Santoyo, 2012; Khachatryan, 2015; Killion & Hirsh, 2013; Kollner & Jacobs, 2015). Coaches and administrators that focus on how to observe instruction and provide feedback facilitate the change process (Babrick-Santoyo, 2012; Van den Bergh, Ros, & Beijaard, 2014). The more time an administrator observes, coaches, and develops a teacher the more likely he or she can directly impact student growth (Grisson, Loeb, & Masters, 2013). For the professional learning program, the universal screening tool to begin impacting student growth will be an observational protocol.

A general observation protocol will be used to jumpstart the evaluation and feedback process (see Appendix H). An observational protocol can assist administrators with providing formative feedback and determining the instructional objective of a lesson (Babrick-Santoyo, 2012; City, Emore, Fiarman, & Teitel; 2010; Darling-Hammon, et al, 2013; Woodland & Mazur, 2015). Formative feedback occurs when, "information is communicated to the learner that is intended to modify his or her thinking or behavior for the purpose of improving learning, with a premise that it is delivered correctly" (Shute, 2008, p.154). Shute's (2008) discussed nine guidelines for providing feedback that can impact learning. The guidelines highlighted the need for administrators to provide

feedback on tasks by elaborating ways to heighten learning in workable chunks (Shute, 2008). Administrators should be clear, specific, simple, unbiased while focusing on a goal that increases teacher performance (Kelly & Dikkers, 2016; Shute, 2008). Data from the observation should be aligned with, "user perception and cognition around actionable items embedded in the feedback" (Kelley &Dikkers, 2016, p. 24). For the purpose of the proposed professional learning program, part of the training for administrators and counselors will be geared towards developing guidelines for communicating with teachers after using an observational protocol.

In the study by Khachatryan (2015), he examined the feedback administrators provided teachers. For feedback to have an impact on student performance, an administrator must orchestrate a careful balance between the central task and end product of student performance. Khachatryan called this, "process feedback". Process feedback, "directs a recipient's attention to the learning process because it outlines the particular details involved in the task performance, making clear how particular steps were performed" (Khachatryan, 2015, p.170). In the proposed professional learning program, administrators will develop the skill set to provide feedback that is clear and sequential in helping teachers understand how to remediate or accelerate learning. Administrators may need additional training on how to maneuver not only through providing feedback to teachers but also understanding the different subcultures within a school which may require different lines of communication (Lochmiller, 2016). Khachatryan (2015) and Shute (2008) guidelines and recommendation for observation feedback will be essential in ensuring that the proposed observational tool is not only a form but a guide for

developing open discussions around instruction and promoting an understanding a schools culture.

An observational protocol should address an instructional objective that centers around the language and content of the task at hand (California Department of Education, 2014). Establishing an instructional objective will help align goals and evidence of student outcomes in determining the overall effectiveness of the professional learning program (Koellner & Jacobs, 2015). The objectives will include the What and How students learn. In addition to the objective, administrators will identify the instructional task using the levels of Bloom's taxonomy and depth of knowledge. The final component of the observational protocol is for administrators to observe metacognition in a lesson. In order for administrators to use the observational protocol effectively, the tool needs to be calibrated. Group walkthroughs are set up for administrators to practice and calibrate results from an observational tool (Babrick-Santoyo, 2012; City, et. al, 2010). By calibrating results, administrators determine if what they observe is truly critical thinking and whether or not additional training and support is needed.

In the study by Grisson, Loeb, and Masters (2013), the researchers examined the impact a principals time on instruction has on student achievement and growth over time. The findings indicated that classroom walkthroughs can negatively impact student achievement when not directed towards professional development or coaching (Grisson, Loeb, & Masters, 2013). As part of the professional learning program, administrators will learn ways in which they can extend the use of the observational tool into professional development and coaching support. Time on coaching can lead to a positive impact on

student achievement (Grisson, Loeb, & Masters, 2013). Principals will learn how to identify potential needs in critical thinking by using observational data and use the tier two coaches as a way to provide hands on support as well as professional development.

Project Description

The purpose of the project was to establish a systematic professional learning program that builds the instructional capacity of English Language Arts teachers. A multi-tiered professional learning program may address the barriers English Language Arts Teaches encounter when teaching critical thinking in writing. A professional learning program can become the vehicle for creating change in instructional practice (Darling-Hammond, et al, 2013; Fogarty & Pete; 2009; Halpern and Riggio, 2002; Herman & Webb, 2007; Hillcock, 2011; Munzenmaier & Rubin, 2013; Partnership for the 21st Century, 2011; Van den Bergh, et al., 2014). The professional learning program will require additional resources, allocation of existing supports, and may possibly encounter potential barriers. Each tier within the program addresses a support system to ensure that the transfer of learning occurs among educators for social change to ignite among high school students through critical thinking in writing.

Resources Needed

The proposed professional development program requires numerous resources. Participants will need copies of research articles on the new revised Bloom's Taxonomy (Munzenmaier & Rubin, 2013), Depth of Knowledge (Herman & Webb, 2007; Webb, 2007;), Framework for the 21st century (Partnership for the 21st Century, 2011), Critical Thinking research (Halpern & Riggio, 2002), and research on developing meta-cognition

(Halpern & Riggio, 2002). The research can be used to present important theories and strategies that connect to critical thinking in writing. Participants need the unit planning template [Appendix H] and the books, *Teaching Argument Writing, Grades 6-12: Supporting Claims with Relevant Evidence and Clear Reasoning* by George Hillocks' Jr. Hillocks's (2011) book provides educators with content and reasoning strategies to use with students who need to develop their analytical thinking. The book is geared to develop a more argumentative standpoint using foundational critical thinking methods such as Aristotle's appeal of logos, ethos, and pathos. The book provides the starting point for teachers to integrate critical thinking and reasoning into writing. Presenters also need logistical supplies such as projector, laptop, large post-it presenter pads, drawing, and writing instruments.

Proposal for Implementation

The professional learning program may be extended over time. The initial training for tier one may occur prior to the start of the school year. By conducting the training prior to the start of an instructional school year, teachers will have the time and the opportunity to carefully design and establish instructional units. The second tier may also occur during the summer or at the start of the school year. The second tier of professional learning will require for coaches and administrators to become trained in the coaching process. The coaching process may take up to a few weeks to implement. Coaches will need the opportunity to model lessons, receive feedback, and adjust instruction (Cretroni, Miller, & Waylett, 2013; Fullan, Ford, & Frank, 2015; Slater & Simmons, 2001; Toll, 2005; Trach, 2014). The final tier of the professional learning program addresses the

support administrators need to monitor and provide constructive feedback (Babrick-Santoyo, 2012; City, Emore, Fiarman, & Teitel; 2010; Fullan, Ford, & Frank, 2015). The final tier is ongoing support for administrators to sustain implementation over time. Overall, the initial implementation of the professional learning program may take up to one year. It is recommended that when planning for a professional learning program, districts should develop a plan for sustainability overtime: Year 1) Initial Implementation, Year 2) Full Implementation, Year 3) Innovation, Year 4) Sustainability (California Department of Education, 2014; Darling-Hammond, et al, 2013; Fixen & Blasé, 2009; Fixen, et al, 2005; Fullan, Ford, & Frank, 2015). A multiyear implementation plan may assist schools in maintaining the proposed multi-year professional learning program.

Potential Barriers

Potential barriers may occur with funding. The district may choose to conduct training during the school year which requires substitutes or the district may choose to conduct the training in the summer with per diem pay for teachers. Substitutes cost $120 to $160 a day, depending on the district. In both instances, substantial money must be reserved for the professional learning program.

Another potential barrier may be the buy-in of all stakeholders to conduct an extensive professional development program. Ensuring all stakeholders are on board can be a challenge, but it can be accomplished by using data from this research and current literature on critical thinking and writing. Currently, districts across California have local control funding that can be applied to professional development on common core pedagogy and learning. One component of the common core state standards is the

emphasis on critical thinking and writing. The proposed professional development program may be funded using the local control funding.

Roles and Responsibilities

Currently, all teachers attended basic common core training via district led professional development. English Language Arts teacher have basic technology equipment such as projectors, laptops, and some smart boards. Each high school has a principal of curriculum and an assistant principal of curriculum. Both administrators monitor curriculum and conduct annual teacher evaluations. Furthermore, each site has a curriculum specialist, department leads, and classified personnel that work closely with the curriculum administrators. Curriculum specialists provide lesson demonstration and ensure teachers have the necessary supports and tools for instruction. Department leads guide the professional learning community within each department. For instance, on an early release day, department leads may hold professional learning communities to develop lessons, align resource, and review student data. Furthermore, there are numerous online programs that can assist educators in developing critical thinking in writing lessons. Currently, all California public school teachers have access to the Smarter Balance Digital Library. The Smarter Balance Digital library equips K-12 educators with common core resources that address reading, writing, listening, and speaking (Smarter Balance Assessment Consortium, 2015). Teachers can access the library to identify resources that may assist them in lesson design, student engagement, as well as a center to share their own lessons.

Project Evaluation Plan

The professional learning program is goal-based with a combination of summative and formative data. The overreaching goal is to ensure that English Language Arts teachers are fully trained in critical thinking in writing instructional pedagogy and approaches. The professional learning program is a three-tiered goal-driven program. Each tier has an accountability goal to ensure that all stakeholders receive the appropriate training and that all goals are met.

In addition to the goal-based targets, summative and formative data will be included in the evaluation of the professional learning program. Summative data can be collected from district benchmarks and baseline data from California Assessment of Student Performance and Progress (CAASPP). In the new ELA/Literacy and ELD Frameworks (2014), summative assessments are discussed as assessments of learning that, "evaluate educational programs and measure multi-year progress" (California Department of Education, 2014, p. 6). District assessments and CAASPP baseline data give stakeholders insight as to whether student level of thinking increases in the area of critical thinking and writing. Stakeholders within the district state that "making a difference means improving performance on standardized tests. In the current fiscal climate, leaders want to know that their investments are based not only on firm grounds theoretically, but also that instructional coaching works" (Eisenberg & Medrich, 2013, p. 48). Summative assessments provide the necessary evaluation data district leaders need to determine the effectiveness of the professional learning program. Formative assessments

are included into the professional learning program as well. Formative assessment refers to,

> assessment for learning—comprising key practices of the formative assessment process—occurs during instruction (or while learning is happening) and assists students' immediate learning needs. As it is intertwined and inseparable from teachers' pedagogical practice, formative assessment is of the highest priority. It is especially important in assessing and guiding students forward in developing the broad range of language and literacy skills and their application. (California Department of Education, 2014, p. 7).

Formative assessments are hard to monitor from an administrative standpoint but are needed for immediate feedback on student learning (Cornelius, 2013; Moss & Brookhart, 2009; Moss, Brookhart, & Long, 2014). Formative assessments require six essential elements for full implementation (Moss & Brookhart, 2009; Moss, Brookhart, & Long, 2014). The six elements address learning targets, feedback, goal setting, self-assessment, strategic questioning, and student engagement (Moss, Brookhart & Long, 2014; Moss & Brookhart, 2009). Part of the training model includes different modes of conducting formative assessments during instruction using chapter 8 from the 2014 ELA/Literacy and ELD framework released from the California Department of Education as well as additional researchers on formative assessment. Administrators and coaches will be able to conduct observational walkthroughs where the focus may be on delivery of informal assessments. Such examples of formative assessments may include checking for understanding during a lesson or small group instruction.

Project Implication

Overview

The implication of this project is to create social change by fostering a deep level of knowledge and application of critical thinking in writing across all English Language Arts classrooms. As high school students embark into a competitive global market, they need the necessary skills, relevance, and autonomy to succeed (Lemley, Schumacher, & Vesey, 2014; Partnerships for the 21st Century, 2014;Voogt & Roblin, 2012). The framework for the 21st century highlights the appropriate instruction and curriculum that needs to occur to prepare our students for the 21st century,

- Teaches 21st century skills discretely in the context of core subjects and 21st century interdisciplinary themes
- Focuses on providing opportunities for applying 21st century skills across content areas and for a competency-based approach to learning
- Enables innovative learning methods that integrate the use of supportive technologies, inquiry- and problem-based approaches and higher order thinking skills
- Encourages the integration of community resources beyond school walls (Partnership for 21st Century Skills, 2014).

The Partnership for the 21st Century framework established a framework for 21st century outcomes and educational support systems. For instance, in the area of innovation and self-direction, a 21st century learner must be able to reflect critically and be able to synthesize their thinking in order to gain expertise (Partnership for the 21st Century,

2014). The standards for curriculum and instruction in the 21st century require teachers to develop competency for learning (National Research Council 2012; Partnership for the 21st century, 2014; Voogt & Roblin, 2012). In order to develop competency, schools and districts must establish an operational definition of 21st century skills that create a pedagogical continuum (Voogt & Roblin, 2012). Competency such as critical thinking in writing helps establish foundation for students to acquire the necessary skills to tackle real-world problems. Students can carry these skills across content areas and into the workforce. Furthermore, teachers and schools become equipped with pedagogy and instructional strategies to change education.

Conclusion

The project was designed to develop instruction, teacher pedagogy, and student performance. Although the intention of the project was to improve critical thinking in writing instruction, some English Language Arts teachers may be upset over the amount of professional development required. The program requires over 100 hours of professional development to equip teachers with critical thinking in writing pedagogy, instructional practices, and opportunity for planning. Fifty hours of more of sustained professional development can directly impact student achievement (OCED, 1998, 2005, 2009; Wei, Darling-Hammond, & Adamson, 2009). "It takes sustained investment of time into teacher training to change instruction and improve classroom outcomes" (Demonte, 2013, p.1). The amount of professional development shifts in district-wide professional development as well as instruction. "It may be informal or formal, but it must include application, analysis, reflection, coaching, refinement, and evaluation of

effectiveness to produce results for educators and students" (Killion, 2013, p.1). Future research may help to determine whether the amount of professional development is sufficient enough to develop critical thinking in writing instruction among English Language Arts teachers.

Section 4: Reflections and Conclusions

Introduction

Critical thinking is an essential skill that many researchers and educators strive to teach. Critical thinking through writing is an even more challenging task for educators to model and teach (Cantrell, Burns, & Callaway, 2009; Murley, Keedy, & Welsh, 2008; Snyder & Synder, 2008). Based on the need to identify the barriers educators face when teaching critical thinking in writing, this case study was conducted to determine a variety of barriers that prevent English Language Arts teachers from teaching critical thinking in writing. The overreaching barrier was the lack of teacher pedagogical knowledge and strategies needed to instruct students in developing their critical thinking in writing. In order to develop pedagogical knowledge, a professional learning project will help to ensure that teachers receive a substantial amount of training, coaching, and administrative support. The proposed professional learning program addresses crucial components of effective design by using research to guide the implementation structure, monitoring, and sustainability (Killion, 2013; OCED, 1998, 2005, 2009; National Research Council, 2012; Wei, Darling-Hammond, & Adamson, 2009). In the proposed professional learning program, the three-tiered program may help develop the instructional capacity of English Language Arts teachers, coaches, and administrators. Each tier is designed to support the subsequent tier and ensure accountability for all stakeholders. After teachers, coaches, and administrators experience the professional learning program, they may be able to implement the strategies with fidelity and support.

This section focuses on the reflection of the research process, strengths and limitations, recommendations, and the overall importance of the work as defined in the purpose of identifying the barriers English Language Arts teachers encounter when teaching critical thinking in writing. An analysis of the project and leadership and an analysis of self as a scholar, practitioner, and project developer are discussed in the concluding section of this study. This section also contains my overall reflection as a researcher and educator.

Project Strengths and Limitations

The purpose of the project was to establish a systematic professional learning program that builds the instructional capacity of English Language Arts teachers via professional development and coaching support on critical thinking in writing pedagogy and strategies. The strength of the project derives from establishing a multi-tiered approach through extended support to ELA teachers, coaches, and administrators. Goals were embedded in each tier which focused on establishing pedagogy, exemplar models of instruction, and systems of support. The three-tiered professional learning program will follow the guiding document from the California Department of Education on the ELA/literacy and ELD framework and a wide range of research (see Appendix A). The framework and research collected provide educators and administrators with the foundation and guidance needed to develop and sustain professional development across content and align professional learning to the Common Core State Standards. Critical thinking research and strategies such as Bloom's Taxonomy, Depth of Knowledge, and writing strategies to promote argument writing will be part of first tier professional

learning module (Halpern & Riggio, 2002; Hess, 2009; Herman & Webb, 2007; Hillcock, 2011; Munzenmaier & Rubin, 2013; Jacobson & Lapp, 2010; Partnership for the 21st Century, 2011; Webb, 2007). The research and strategies in the first tier of the professional learning program will help to establish the foundation for developing critical thinking in writing.

The second tier of the professional learning program is designed to provide English Language Arts teacher with coaching support (Borko 2004; Hieneke, 2013; Lieberman, & Pointer Mace 2008; Slater & Simmons, 2001; Strahan, Geitner, & Lodico, 2010). In order to sustain professional learning and provide constructive feedback to teachers, a coaching model will help create a system in which participants will be coached by lead educators (Centroni, et al., 2013; Fullan, Ford, & Frank, 2015; Slater & Simmons, 2001; Toll, 2005; Trach, 2014;). The strength of Tier 2 is fundamental to the sustainability of the coaching model. In order to create change, teachers need to understand how to create critical thinking in writing opportunities for their students. Coaching will provide teachers with the exemplar and model for change (Centroni, et al., 2013; Fullan, Ford, & Frank, 2015). The third tier is designed to equip administrators in developing their pedagogical knowledge, support system, and a method for monitoring professional learning (Fogarty & Pete, 2010; Heineke, 2013; Wei, Darling-Hammond & Adamson, 2010). In order for sustained professional learning practices to take place, a system for monitoring and support in addition to goals must be established.

Within the professional learning program, goals were established to ensure that each professional learning tier met its target. In addition, part of the evaluation process

includes an analysis of the goals and review of summative and formative student data. Summative data will be used to determine whether the new critical thinking in writing strategies improve student achievement results overtime. Summative data is needed for district leaders to make adjustment to the monitoring and implementation of the strategies (Eisenberg & Medrich, 2013; Fullan, Hord, & Frank, 2015). Formative data will be used to make adjustments to instruction and determine student support. Both types of data alongside observations and coaching will help to sustain student growth in the area of critical thinking in writing.

Some of the limitations present within the project may be the available resources for a district to establish and sustain a multi-tiered professional learning program. If implemented, the professional learning program will require district to allocate funds to pay for presenters, teachers, materials, substitutes and allot time to develop the structures. Depending on the available resources and funding, district may choose to either hire consultants or train from within. Districts will need to develop an ongoing implementation support that deepens an educators understanding and addresses the gap of critical thinking in writing.

Recommendations for Alternate Approaches

The professional learning program has strengths and limitations that may be addressed differently based on the work from this study. The data collected during the semi-structured interview is a small sample of a larger population (Creswell, 2012; Lodico, et al., 2010; Yin, 2014). Recommendations to increase the sample size are needed to determine the instructional barriers all English Language Arts teachers

encounter when teaching critical thinking in writing (Creswell, 2012; Lodico, et al., 2010; Yin, 2014). A larger sample size may allow for a more generalized perspective of possible barriers that all English Language Arts teachers encounter when teaching critical thinking in writing.

Another recommendation is to add an observation of instruction as part of the collection of qualitative data. An effective observational protocol tool can help establish instructional norms and provide constructive feedback (Fullan, Ford ,& Frank, 2015; Marzano, Carbaugh, Rutherford, & Toth, 2014). An observation of instruction will help future researchers triangulate the data from semi-structured interview results with observed instructional practices (Creswell, 2012; Lodico, et al, 2010; Yin, 2014). The analysis of data will help to solidify more concrete steps to remediate possible deficits in critical thinking in writing instruction. District and site leaders will able to use the triangulate data to grasp a deeper level of understanding of the barriers all English Language Arts teachers encounter when teaching critical thinking in writing.

An alternate definition to the problem may be that the culture within the district prevents teachers from developing efficacy and a desire to teach critical thinking in writing. Reponses from participants indicated a negative view of both site and district level administration. A possible solution to this problem may be to establish a site and district level cultural building program in which participants begin to reflect and find solution to improve the culture. The program can consist of building relationships with teachers, foster a safe and trustful environment, and ensure that high expectations are

constructed. By establishing a positive culture, teachers will be open to new instructional approaches without the fear of failure.

Scholarship, Project Development, and Leadership and Change

Leadership and Change

Understanding the instructional barriers English Language Arts teacher encounter when teaching critical thinking in writing is a step towards creating change in instruction. Many educators and administrators may feel "that change like death and taxes should be postponed as possible and no change would be preferred" (Bruhn, 2004, p. 132). In an era of new standards and state assessment, change is eminent. District leaders, as well as school site leaders, need to continuously conduct informal research to determine next steps for instruction especially when developing critical thinking in writing. The project discussed is an effective design which may assist teachers and school leaders in gaining the necessary critical thinking in writing pedagogy, strategies, and unit planning skills. To ensure the project is disseminated effectively, district leaders, administrators, and coaches need to continuously provide feedback and collect data on the implementation of professional development strategies and student achievement. "Effective leaders view data as a means not only to pinpoint problems but to understand their nature and causes" (Wallace Foundation, 2011). While collecting data and determining the best solution to instructional barriers, I realized that district leaders and school site leaders need to become instructional leaders. District leaders who are knowledgeable and involved in leading instructional decision have a greater impact on student achievement (Finkel, 2012; Maxwell, 2014; Southwest Educational Development Laboratory, 2000). Part of

the design of the instructional learning program focused on developing the instructional pedagogy of principals and coaches thus developing a system where principals can provide constructive feedback on critical thinking in writing instruction.

Analysis of Self as a Scholar

Critical thinking has always been a passion of mine. Such passion started when I was as a teacher; I began to develop lesson and classroom activities that forced my students to think above and beyond the state standard. At the time, I did not realize that I was infusing critical thinking into my instruction. My assumption was that all teachers were encouraging their students to go above and beyond the state standards. Unfortunately, my overzealous assumption came to a crashing halt when I progressed through my educational career as a school-based curriculum specialist, district level curriculum specialist, administrator of curriculum, and now coordinator of curriculum and instruction.

As I entered each step of my career, I began to see the need to understand why teachers were not equipping their students with the necessary higher order thinking skills needed to function in college or in a workforce. Not only was critical thinking lacking, but writing across grade levels was not present. Students entering high school lacked the thinking and writing skills needed to pass state assessments such as the CAHSEE or CELDT. Prior to the start of conducting research, I began to collect resources, research articles, and books on critical thinking, writing, and metacognition. I wanted to understand the relationship between all three and what was needed to prepare students to become thinkers. I received IRB approval, number 07-03-14-0268233, and collected data

and I was able to understand that the problem lies with the pedagogical knowledge of teachers and instructional strategies used. In order to change the current problem, a professional learning program must be developed to equip not only teachers, but administrators, with the necessary knowledge to develop critical thinking in writing. The program designed can equip stakeholders with the necessary tools needed to establish a pathway for instructional change.

Analysis of Self as a Practitioner

My mission in education is to equip students with the necessary knowledge and to ensure that critical thinking is part of their daily decision making process. The decisions humans make affect the pathway to their futures. Through the process of completing the literature review, conducting research, and developing a project, I learned the importance of always staying on top of current trends and research in education. As I collected research for my literature review, I came across several research articles that I immediately put into practice. I realized that in order to become an educational leader, I must always understand the most current research and practices across all content areas. By conducting the semi-structured interviews, I realized that leaders discuss and demand instructional initiatives with teachers without checking for understanding among teachers. As teachers, we continuously make sure that students understand the content of the text that we teach them. This same practices need to be established among leaders and teachers. Leaders must continuously check for understanding among their teachers to make sure they understand their instructional strategies. Asking a few questions and

conducting observations can help school leaders to determine if a teacher needs additional support or coaching.

Analysis of Self as a Project Developer

Being a project developer is challenging and exhilarating at the same time. Before developing a project, the researcher must identify the need. In this current research, there was a need to develop the instructional pedagogy of teachers in the area of critical thinking in writing. Once the need was identified, the researcher must then brainstorm possible solutions for addressing the need. Depending on the resources made available, the need can be addressed in a short period of time or throughout a few months or year. It is critical for a project developer to review and analyze possible reasons as to why there is a need and the support systems that must be established. One error that can happen is that it is easy to correct a need without thinking of the long-term impact. Understanding the long term impact and goals helps a researcher develop a solid project.

Furthermore, a product developer must also delve into rich literature and research on the specific need. Delving into research can help identify already developed and researched ideas or products that can assist in achieving the desired outcome. As a coordinator of curriculum, I used my experience with this doctoral project study to aid my process of developing projects within my current district. I learned how to develop surveys and conduct my own research in order to establish next steps for district and school-based problems. The process of developing a district wide product has made me a careful researcher and observer of instruction. Being able to observe teachers in action

and understand their instructional pedagogy helped me find solutions to instructional gaps by researching effective strategies.

Reflection of the Importance of Work

The process of conducting a review of literature at the onset of this study and within the development of the project has granted me the opportunity to build my pedagogical knowledge on a wider range of research and theories. The knowledge that I acquired has facilitated my own growth not only as a scholar but also as a curriculum leader within my district. I used the research and theories to build programs, provide mentoring support to administrators and teachers, and expedited the implementation of common core instructional practices.

The process of collecting data to address the problem was an experience that I now use with teachers and administrators within my district. Interviewing teachers provided me the opportunity to stop, listen, and understand their perspective in education. Many times, administrators and district leaders fail to listen to teachers. The failure to listen and understand their perspective can be the reason why many initiatives and programs fail after the initial implementation launch. Teachers hold the key in ensuring students receives the necessary knowledge and skills to succeed in the real world. My experience as a researcher has allowed me to build relationship with teachers by understanding their perspective and devising a plan for support. Building the relationships is at the core of implementation.

My experience as a project developer is one that I employ everyday within my work. As a curriculum leader within my district, I am in charge of developing

professional development programs, models for instruction, and support systems for teachers and administrators. Being able to connect problems to solutions is part of the reason as to why I enjoy coordinating curriculum and establishing systems of support for all stakeholders. By becoming a researcher and project developer, I have learned to continuously research and identify best practices while aligning resources and bringing all stakeholders together for a common mission.

Implications, Applications, and Directions for Future Research

As a researcher, I was set out to investigate the barriers English Language Arts teachers encounter when teaching critical thinking in writing to 15-17 year old students. Barriers were identified and a professional learning program was created to address the problem. Substantial research and professional development models were used to establish a multi-tiered professional learning program that may address the needs of the teacher, coaches, and administrators. The professional learning program has the potential to create change at the individual teacher, organization level, and policy level.

The professional learning program has the potential to impact social change among educators and school organizations. Social change may occur when teachers begin to understand the indicators of critical thinking in writing. By building the pedagogical knowledge and practice of teachers, teachers will be equipped to prepare students for college and career. The ability to think critically and within the context of writing is a desirable skill not only in college but in the workforce; it allows students to develop habits of mind (Negretti, 2012). Students need the necessary tools to think on demand and be able to communicate their thinking whether by writing or oral communication

(Abrami, et al., 2015; Coker & Erwin, 2011; Mango, 2010; Mehta & Al-Mahrooqui, 2015; Saiz & Rivas, 2011). By teaching students how to thinking critically in writing, teachers will not only impact the individual student but the entire school organization. For instance, if the English Language Arts departments participate in the multi-tiered professional learning program, there is a high potential for developing critical thinking in writing instruction. By teaching students how to think critically in writing, students may be able to transfer the desired strategy or skill across other content areas. A potential impact on student performance may occur as well an increase in graduation rate, state assessments, and college entrance. The multi-tiered professional learning program may have the potential to impact not only the individual teacher or student but an entire organization.

In order to impact the individual teacher, student, and organization, teacher methodology at the school and university level may need to be further examined. For instance, at the school level, teaching methodology needs to be observed to further understand the barriers teachers encounter when teaching critical thinking in writing. Classroom observation may provide district and site leaders with a deeper understand to the barriers teachers are encountering when teaching critical thinking in writing. In addition, teaching methodology can also be addressed within teaching induction programs at the university level. The Common Core State Standards shift the way in which teachers teach and require a higher level of content and concept knowledge among K-12 educators. Universities and teacher induction programs may need to revise and

align traditional programs to meet the new demands on instruction brought forth by the common core.

Finally, the proposed professional learning program may have the potential to impact policy and society. The Every Student Succeeds Act ESSA of 2015 allows states and school district to develop accountability plans that have a direct link between student learning and professional learning of teachers. States are currently in the process of developing the accountability formula and workbooks for district to implement by 2017-2018 school year. Many districts may have in place No Child Left Behind 2002 policies that need to be redesigned to meet the upcoming requirements of ESSA. For a district who may be interested in establishing the proposed professional learning program, a deep examination of policies surrounding student achievement, professional development, and the teacher contractual memorandum may create social change. For instance, student achievement board policies and administrative regulations may need to reestablish district wide learning expectations by which critical thinking and rigor will be measured. Making adjustments will allow districts to have a direct impact on student achievement and the establishment of high expectations. Secondly, within a teacher contract districts will have to determine whether the length of the work day, structure and dates for professional development, and teacher expectations are aligned to the professional learning program. By examining policies within a school district and aligning them to the outcome of student learning and professional learning, district may be able to reduce the possible barriers in implementation and sustainability.

The barriers identified in this doctoral study provide opportunities for future research. For instance, one of the barriers not addressed in the professional learning program is the barrier of a negative school culture. Future research is needed to understand how school culture can impact teacher efficacy and instruction. In schools where there is a high level of distrust and animosity among staff, the urgency to address school culture outweighs the need to increase teacher pedagogy. Another recurring barrier that may need additional research is the concept of time. All participants discussed the lack of time when trying to provide students with opportunities to develop critical thinking in writing. Future research on class scheduling, school-wide master scheduling, and lesson design might assist teachers in understanding how to prioritize instruction within an instructional period.

Conclusion

After I concluded the case study research on critical thinking in writing, I collected data to determine the possible barriers teachers encounter when teaching critical thinking in writing to 15 to 17 year olds. In order to ensure whether critical thinking in writing occurred, the project highlighted research from a variety of sources including the new California ELA/Literacy and ELD Framework (2014). Using the data collected through the semi-structured interviews and available research, I designed a project to address the needs of educators and improved student critical thinking in writing capabilities.

Section one highlighted the rationale, research questions, and literature review. The literature review examined key research on critical thinking, writing, instructional

barriers, and pedagogy on professional development. Section two discussed the methodology, data collection procedures, and results of the semi structured interviews and field notes. Based on the results of the data collected, Section three discussed the proposed project to increase critical thinking in writing among 15 to 17 year old students.

The project was designed to establish a professional learning program where educators, coaches, and administrators received specialized professional development on critical thinking and writing. Coaches and administrators were the support system for teachers who undergo the extensive professional development. Coaches and administrators provided instructional support such as lesson demonstration and constructive feedback on the delivery of professional learning strategies. The ongoing support is designed for multiple years. The ELA/Literacy and ELD Framework discussed the importance of establishing professional learning programs that are designed to sustain growth over time.

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