DEVELOPING READING COMPREHENSION AND CRITICAL THINKING USING PRIMARY SOURCES

A Thesis

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in

Education

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by

Pamela Jean Hales

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by

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Graduate and Professional Studies in Education
Abstract

of

DEVELOPING READING COMPREHENSION AND CRITICAL THINKING USING PRIMARY SOURCES

by

Pamela Jean Hales

Statement of Problem

By fourth grade, most students in California are transitioning between learning to read and reading to learn. In fourth grade, more instruction and practice time is devoted to reading for information and less time on developing the skills required to read independently. For many reasons, students may not be able to meet the challenges of text in the fourth grade classroom. The increased reading of informational text in content areas in the upper elementary grades can cause student’s comprehension to slow or decline. This is what Jeanne Chall referred to as the fourth grade slump. Students in today’s classrooms still face these challenges. The goal of this research was to examine the outcomes and achievement of readers using informational text from primary sources and to develop critical thinking skills by using the tools a historian might use to examine documents and artifacts. The desire to keep proficient readers engaged through not just comprehending information, but also engaging with the materials and thinking critically while reading.
Sources of Data

The data for this study was gathered from the researcher’s fourth grade classroom. The school where the author teaches is located in Carmichael, California, a suburb east of Sacramento. The school is a public school with an accelerated program for gifted students and an overall focus on visual and performing arts. As students identified as gifted, the participants in this study are all qualified to receive an accelerated, and compacted curriculum in the areas of language arts and mathematics to meet their needs. The researcher used written assessments, computerized assessments, and anecdotal notes as evidence of student learning.

Conclusions Reached

The author concludes that more research is needed to understand the impact of the increased use of informational text on overall student understanding and achievement in reading. Proficient readers transfer their reading skills to informational and content area text to help comprehend complex material. Secondary source material which discussed the primary sources and artifacts supported student understanding of the subject matter.

_______________________, Committee Chair
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_______________________
Date
DEDICATION

The author would like to dedicate this effort to her parents, Shirley and Lawrence Burmester. Without their love, support, and belief in education would not have been pursued.
ACKNOWLEDGEMENTS

For their encouragement, and time, the author would like to acknowledge Dr. Porfirio Loeza, and Dr. Cid Gunston-Parks. The author is grateful to all the teachers, staff and students at Deterding Elementary School for their support. Lastly, great appreciation is given to the author’s family for their inspiration and love.
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Chapter 1

INTRODUCTION

The purpose of this work is to examine the outcomes of student reading achievement and the development of critical thinking by the incorporation of informational text into traditional reading programs. Traditionally, language arts programs at the elementary level teach reading strategies primarily through fictional stories with a narrative format (Duke, 2004) with limited inclusion of non-fictional pieces. This study will attempt to determine whether the inclusion of more informational text in a traditional reading program will improve the overall reading comprehension and critical thinking among a group of fourth grade students.

The ability to read a variety of text, from simple narrative to more complex content outside the domain of English Language Arts, demands the use of higher order thinking skills. Skills, which become increasingly critical as students continue through educational systems. Critical thinking is evident when students practice reading strategies and skills learned to dig deeper in analysis and content in fictional texts to a broad range of content, which includes informational texts. Students given cross-curricular textual materials will have the opportunity to think critically, question the author and text, create unique analogies, and global connections. Stretching across domains to build academic vocabulary and cross-curricular connections. Students can develop the ability to extract and understand concepts and themes in text that affect the human condition and appear
not only in literature, but in everyday life. The capacity to empathize and solve problems is product of thinking with a critical lens.

Students need the skills to think critically and solve problems throughout their education and careers. The desire to establish national standards in the United States comes in response to a decline in achievement and the preparedness students lack when entering higher education and careers. Educators in higher education recognize an overwhelming increase in the number of students entering their institutions unable to decipher and process complex text and information. As a result, high school graduates find themselves in remediation courses at universities. Further, this reality leads to lower graduation rates among college students and citizens lacking the skills needed to acquire and sustain employment.

One of the hallmarks of critical thinking is the capability to understand and synthesize information from more than one source. In language arts, this means reading with a purpose or goal and often from multiple texts on a topic and putting the information together. Students need to be resourceful gatherers, analyzers of data.

Current educational trends discuss the need for the development of 21st Century Skills. The Common Core State Standards (2010) were designed to prepare students for college and careers. The newly created standards are developed with the purpose of creating more rigor and depth across disciplines.
Statement of the Problem

I currently teach fourth grade students in a self-contained multiple-subject classroom. The groups of students I teach are proficient readers and read daily. They have positive attitudes towards reading and read both for enjoyment and information. Even though these students are good readers, it is not uncommon for students to read passively rather than actively. Both written and class discussions involve a heavy amount of simple summary and recall of details. To make the most effective use of instructional time, I incorporate reading and writing instruction and practice across disciplines. Students are exposed to a variety of reading material and text structures through this approach. For example, readers learn how to find a main idea and details in a science text, and discover which words are key to their understanding of the subject. Students enter fourth grade after spending their time in K–3 reading and listening to narrative stories. Reading informational texts can be more challenging than fictional reading for many readers and some students may lose interest when they encounter content specific language and complex text structures.

Primary Research Question and Secondary Questions

The author researched several studies regarding the dip or decline in reading achievement in upper elementary students. Other areas of research informing this study address the effect of limited exposure to informational text in primary grade classrooms. The recently adopted, Common Core State Standards for California (California Department of Education, 2013), have included an increased amount of reading and
analyzing informational texts. They also require students to be able to identify primary and secondary sources and synthesize information from these sources, develop and use critical thinking and collaboration. This study will answer the following question.

1. Will the inclusion of primary sources, in the form of historical documents, illustrations, and photographs, in a unit of study in the content area of California history and social studies develop and improve comprehension, and critical thinking of high achieving fourth graders?

2. Will the use of primary source materials increase engagement and motivation of fourth grade learners?

3. Will using the Socratic method for conducting pre and post reading discussions improve critical thinking among fourth graders?

4. Will implementing the gradual release model increase student ownership of their learning?

**Rationale**

Upper elementary students are often described as transitioning from learning to read to reading to learn. The amount of reading of informational text and the exposure to more difficult academic and domain language can lead to a dip or decline in reading comprehension. The need for more exposure to informational text in elementary classroom has been well researched and is supported by the Common Core State Standards.
Significance of the Problem

The State of California adopted the Common Core Standards in August of 2010. The implementation of the standards is to occur between 2013-2014. One major shift from the previous English Language Arts Standards will be the inclusion of non-fiction text across content domains. This study will seek to explore the effects of using fiction and non-fiction texts on reading achievement and critical thinking skills in fourth grade students.

The primary research question is “Will the use and instruction of informational text improve student comprehension, and overall reading achievement?” I anticipate that student reading strategies and comprehension will improve. The ability to understand and analyze through comparing fiction and non-fiction text requires students to think critically. I understand that achievement in reading can be affected by several factors. Some conditions that can affect student understanding are background knowledge, vocabulary, fluency, text complexity, the amount of time-spent reading daily, parent support, and motivation. How will the strategic instruction and inclusion of informational text in the Common Core Standards positively affect overall reading comprehension and achievement?

Methodology

The types of data that will be collected and analyzed for this study consist of pre and post assessments to illustrate the development of understanding. The pre and post-
test will consist of open-ended questions with written responses. The students’ before and after assessments will be compared for growth in comprehension, vocabulary, critical thinking and overall understanding. Additionally, data will include the researcher’s anecdotal and observational notes, and examples of student created products. Student grade reports and MAP testing data will also be analyzed.

A total of sixteen students participated in the study. The participants were randomly placed into two groups, eight were placed in a treatment group and eight were in the control group. The treatment group was given informational text from primary sources from the Library of Congress, and the National Archives. The control group was assigned from reading and activities the fourth grade social studies textbook (White, 2006). The subject matter for both groups included content from the California Standards for Social Studies for fourth grade. The materials and content cover Chinese immigration to California from 1850 to 1940.

**Limitations**

Several limitations are considered in this study. The length of time, two weeks, limits the ability to see long-term effects of reading informational material in conjunction with fictional stories. The participants in the study will be limited to those students in attendance during the spring 2013-2014, school year. Another limitation is the students’ right to opt out of the study. Daily student attendance during the study may vary.
Definitions

Academic language - vocabulary related to specific content areas, for example, mathematic terms.

Background knowledge - understanding of content learned or experienced prior to classroom instruction.

Common Core Standards - standards for K-12 education developed by the National Governors Board, currently adopted by 43 states.

Critical thinking - disciplined thinking that is clear, rational, and informed by evidence.

GATE - acronym for Gifted and Talented Education. Individuals identified by a norm referenced test to be cognitively high functioning and, or artistic.

Informational or non-fiction text - a genre of factual or procedural writing, some examples include, but are not limited to biographical, historical, scientific material, operational manuals, recipe, instructions.

Interdisciplinary reading instruction - teaching of reading strategies outside the area of language arts.

Metacognition – the awareness of one’s thought process.

Primary source – in history, or social studies, a first hand account or witness from a time period or event.
**Reading achievement**- the level of student understanding as demonstrated by a reader’s output on oral or written tasks.

**Secondary source** – in history, or social studies, an account of a time period or event written by an individual who was not present at the time of the event.

**Socratic method**- named after the classical Greek philosopher Socrates, is a form of inquiry and discussion between individuals, based on asking and answering questions to stimulate critical thinking and to illuminate ideas.

**Text structures**- the organization of ideas in a text, some examples are cause and effect, problem and solution, compare and contrast.

**Organization of the Thesis**

Chapter 1 of this thesis provides an overview of the study, the research question, methodology, and limitations of the study. The thesis question was developed to investigate the affect of using primary sources in the content area of history with proficient readers to deepen comprehension and stimulate critical thinking. Chapter 2 of the thesis will present the major themes in current research and explain the rationale for the study. The methodology for the study, and subject selection, is outlined in Chapter 3. Chapter 4 will review the findings from the treatment and control groups used in this study and Chapter 5 serves as a discussion of the findings, implications, limitations with the methodology, areas for future research and conclusions.
Chapter 2

LITERATURE REVIEW

Introduction

The purpose of this research is to develop a context and understanding behind the rationale for the Common Core State Standards (2010) for reading and how the implementation may affect student outcomes and achievements in the area of reading and language arts. The newly adopted CCSS for education ask for students to apply reading skills and critical thinking within the language arts, and across academic disciplines. The capability to interpret a variety text structures and make connections between content areas, for example reading and science, requires students to think critically and work rigorously. The practice of thinking critically while reading may lead to improvements in understanding content and text. Teaching through integrated units of study across curriculum using multi-media resources and text sets should increase opportunities to think deeply and make connections both personal and global. This is a shift from recent practice where students practice reading skills and strategies almost exclusively with narrative texts in the primary grades. Students above third grade are expected to have the tools needed to read to learn. These texts demand student resourcefulness and critical thinking.

Previous standards for reading instruction relied heavily on the reading of narrative or story content. Non-fiction content was often defined by the inclusion of biography and other factual reading. According to the English Language Arts standards, as presented in the A Look at Fourth Grade in California Public Schools and the
Common Core State Standards, fourth grade students should now be able to “integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably” (2011, p. 4.4). The ability to synthesize and analyze information from multiple texts bespeaks the types of critical thinking educators want to nurture in young students. Students are also asked to be able to distinguish between primary and secondary sources of information. Learning to discern between primary and secondary sources assists students when evaluating information for reliability.

This research will attempt to discover whether students are able to comprehend, think, and write critically when presented multiple texts types and print sources on a subject.

**Defining Informational Text**

The new emphasis placed on informational text has caused debate and discussion amongst educators about the definition of non-fiction texts. Informational text is not defined in the Common Core State Standards, yet educators must understand what is considered informational and what is not. Duke (2004) defines informational text as text written for the purpose to convey information about the natural and social world. In the classroom setting, we can think of informational text as the types of texts students might encounter outside the traditional language arts time. Texts used in content area reading, science, math, history, are the kinds of materials students will be exposed to. The text structure in non-fiction books may include pictures, captions, diagrams, charts, graphs, headings, sub-headings, academic vocabulary, all used to convey information about a subject.
Some non-fiction texts such as biography may be presented in a narrative style and structure. A narrative structure follows a predictable pattern of plot or story with characters, settings, events, and conflict and resolution.

**Historical Research on Reading**

A great portion of instructional time in primary elementary education, kindergarten to 3rd grade is devoted to learning to read and developing reading skills and strategies. “A prototypical text task for elementary students is to read a selection so that they can answer questions to it” (Pressley, 2002, p. 272). Alternative methods of reading comprehension instruction have shown to be more effective in developing capable independent readers and thinkers. One such model is what Pressley calls “Balanced comprehension instruction” (p. 272), which teaches students the strategies for reading diverse and comprehending diverse texts. In practice, traditional reading programs consisted of a basal reader or a collection of narrative stories. Skills and strategies involving how to read were taught along with a narrative story. Historically, educators have taught reading exclusively within the context of language arts with little consideration given to the application of reading in other content areas such as mathematics, science and history. Research on effective instructional practices in reading show the importance of practicing reading skills outside domain of language arts.

As students approach high school and college course work the ability to read and understand content in other areas of education, primarily expository text, becomes increasingly important. It is equally important for students to be able to process and think
critically about the material they have read. Reading strategies are developed in students over time.

Students need exposure to higher level thinking and questioning to develop as critical readers. Evidence of higher level thinking include the capability to make connections and analogies, acquire and utilize new vocabulary, recognize author stance and persuasion in written material. Current elementary instructional materials, or curriculum consist of basal readers and collections, which teach primarily from a narrative format, include a series of reading skills and comprehension strategies. In order to meet the guidelines established by the Common Core, these curriculum programs will need to increase the amount of informational text and activities that promote critical thinking.

In the past, students have gained a familiarity with narrative text structure and an understanding of how to read narrative text in the elementary grades. Much high school and college reading will demand strategies for reading and processing expository text. Before the adoption and implementation of CCSS, researchers were aware of the lack of exposure to informational text in the primary grades (Duke, 2000). This limited presence of informational text is believed to be cause of difficulty for students as they advance in school. Many high school graduates enter college needing remediation courses in order to meet the requirements of their course work.

In response to the limited presence of informational texts, educators have begun to include more non-fiction texts in their classroom libraries and reading programs. The good news for educators is the ability to maintain the anthologies and basal readers while
devoting time to reading in other content areas outside language arts. Teachers can use materials and texts from content areas such as science, math, history, and arts.

**The Role of Informational Text in Reading Programs**

In order to understand the new expectations for reading, as presented by the CCSS, we must understand the role of informational text in the standards. The standards include an increased amount of reading of informational texts. For educators, this means that reading instruction must take place outside of the time traditionally devoted to language arts. Educators include the practice of reading in the content areas such as science and history. In high school, teachers in the sciences, history, mathematics and arts will play a new role in teaching reading of non-narrative text and text structure.

**The Role of Informational Text in the Common Core State Standards**

According to the reading standards for informational text for fourth grade, as written in the *A Look at Fourth Grade in California Public Schools and the Common Core State Standards* (2011, p. 4.4), “Comprehension of grade-level informational text focuses on structure of informational text and using facts, details, and examples from the text to understand its content”. This means students need the strategies to understand both the content and structure of informational text. “The CCSS incorporate analytical skills and strategies not found in the 1997 California English Language Arts Standards” (California Department of Education, 2011, p.4.4).

The CCSS expands on the previous foundational standards for fourth grade. Students should read informational text with fluency and with purpose and understanding. Students use context to affirm or correct understanding of academic, or
specialized, content vocabulary that is a part of reading informative text. Content vocabulary consists of words infrequently used outside of the domain of the subject. These are the types of words that Beck, McKeown, and Kucan (2002) would call Tier III words. Examples of Tier III words are parallelogram, microorganism, and longitude. These words need to be taught explicitly to students. Continued achievement will depend upon the student’s ability to interpret and understand academic language.

It is the lack of inclusion of informational text in the primary grades that is believed to be responsible for what Chall, Jacobs, and Baldwin (1990) described as “the fourth grade slump.” Fourth grade is a period in a child’s learning where they are expected to shift from “learning to read” to “reading to learn.” A student’s continued success in school may hinge upon the student’s exposure to informational text, and academic language, as well as the ability to apply reading strategies in contexts other than of narrative structure.

**Reading Comprehension and Academic Achievement**

In the early years of a child’s education the focus of language arts instruction involves time spent on learning to read. Students develop phonemic awareness and an understanding of words, while at the same time learning about the structure of story, or narrative text. Research shows that exposure to text from a broad range of genres, filled with a variety of text structures, and vocabulary gives primary students an advantage later in their elementary and high school careers. Traditionally, exposure to a predominance of informational text begins in the fourth grade, where students are expected to read to learn about society and the world. Students with limited exposure to a variety of text, most
importantly, informational text become disadvantaged when faced with structure and vocabulary that is different from the narrative style they used to learn to read. This reality is what Chall referred to as “the fourth grade slump.”

This dip in achievement has been attributed to later remediation in high school and college. Universities are finding students entering higher education in need of remedial courses, and few of these students are exiting or graduating from college.
Chapter 3

METHODOLOGY

Overview

The research discussed in the previous chapter developed the background for the design of the study. Outlined in the review was the rationale for further study into the increased amount of informational text included in the Common Core State Standards for English Language Arts (National Governors Association, 2010). Previous reading standards emphasized comprehension skills primarily in the format of narrative text. The newly adopted CCSS asks for more reading and analysis of informational text from both primary and secondary sources. The standards also include more critical thinking. The ability to analyze information and documents will require that students think critically about text. Though students still need to comprehend and examine text on a literal level, a new layer is added with the CCSS, which asks readers to synthesize and analyze.

In this chapter, the methodology for the study is described. The researcher included primary and secondary sources to be used in the study. Documents, articles, narratives, pictures and photographs were retrieved from the National Archives and Library of Congress. The materials are high quality and create a clearer picture of the subject matter.

Language arts education in the primary elementary grades, kindergarten through third, has focused on the development of reading skills, the ability to decode, building vocabulary, and comprehension, the ability to understand what is read. Writing skills are
also taught within the language arts umbrella. Reading comprehension strategies have been studied and developed to help students become better at understanding what lies on the surface of the page and what lies beneath and between the lines of text. Many students learn a set of strategies to use when they attempt to tackle a difficult text. Students know they need to read and reread, ask questions, make predictions, use context clues to understand unfamiliar vocabulary, consult resources and experts, and put pieces of information together to form conclusions or draw inferences. Though many students may enjoy the pleasure of reading a good book they may not be able to transfer these skills and strategies when confronting a non-narrative or content area texts with structures that vary from the basic narrative style.

This action research study will examine the reading comprehension and critical thinking of a group of fourth grade students. The students in the intervention group will be given primary and secondary source non-fiction readings, historical artifacts and documents, and images to help develop their comprehension about the Chinese Immigration to California.

The students participating in this study come from a public school in Carmichael, California, a suburb just outside the City of Sacramento. The school’s focus is on providing visual and performing arts education for all students. The school employs a full-time art, vocal music and band teachers. The school is also home to a Rapid Learner program. This program is designed to accelerate students identified as high achievers and/or gifted. The participants in this study have all been identified as qualified for a specialized program to meet their learning needs.
Students were randomly selected by a number draw and placed into two groups. The students were not grouped by age or ability. All students in the class are identified as gifted and therefore, have the opportunity to participate in an accelerated academic program where they are exposed to reading and math content one grade level or more above fourth grade.

One group received text sets of primary and secondary sources, fiction and non-fiction along with maps and relevant artifacts. The other group was given only secondary source material from the grade level social studies book. Both groups will read an historical fiction novel about the building of the Transcontinental Railroad told from the perspective of Chinese workers. After the study, the second group will have an opportunity to read and study the materials used in the intervention.

The students were given a pre-assessment to determine prior knowledge and understanding of the subject of Chinese immigration to California. The assessment consisted of an open-ended writing prompt that asked, “What do you know about Chinese immigration to California?” The term immigration was defined as someone who travels to another country to live and work. The pre-assessment was evaluated on a scale of 0-3 in terms of thinking and background knowledge. Pre test will be compared to post tests for growth in understanding. Markers of learning are academic vocabulary, articulation of concepts connected to Chinese immigration. Students understanding of the Chinese immigrant experience should increase and understanding about the human condition should be evident in the themes.
Proficient readers utilize many strategies as they work towards understanding text, but may not be thinking critically about the information they read. Often proficient readers may read pages passively, rather than actively. Good readers use many strategies while reading. Students may use these comprehension skills concurrently while reading. Good readers note details, make predictions, use context, and infer. The practice of thinking critically about content deepens and adds another layer of understanding.

Students in the study will read text both narrative and informational about immigration of Chinese to California, more specifically during the 1800’s. They will read transcripts from immigration interrogations and historical documents, such as the Chinese Exclusion Act, poetry from Angel Island, posters and propaganda from an era, when many Chinese were arriving in California in search of the Golden Mountain and prosperity. In the intervention group, students will be asked to play the role of a history detective. They will need to decipher, interpret, and analyze materials with the goal of constructing a picture of the Chinese experience in the Golden State.

Data collection during the unit of study will include observations and anecdotal notes about student questioning, understandings, and misconceptions and misperceptions. Information about student discussions, and participation will be noted. Other data will include pre-and post written assessments evaluated for understanding and use of vocabulary related to the unit on Chinese immigrants.

Students in the treatment group were given documents, photographs, pictures, narratives, and other relevant items pertaining to Chinese immigration to California.
Tools developed by the Library of Congress and the National Archives, will be used by students to analyze primary sources and artifacts.

The treatment group consists of nine fourth grade students. After parental and student consent, 17 students were chosen to participate in the study. All students are from the same class and the researcher is the teacher. Nine of the 17 fourth graders were randomly selected to receive materials, and instruction from primary and secondary source materials. Each lesson required students to think critically and probe the documents and materials for an understanding of the time in which many Chinese Americans arrived in California.

The control group includes eight fourth grade students. The students in the control group are in the same class as the treatment group and the researcher is their teacher. With the consent of parents and students, these students were randomly selected to participate in the study. The materials provided were from the fourth grade social studies consumable textbook for California (White, 2006).

Sample Population

The Research Subject Selection

Subjects for this research study were selected from a fourth grade Rapid Learner class in Carmichael, California. The researcher chose this population to study for ease of access. The students in the class have been identified as gifted and qualify for a special program to match their learning needs. Students qualify for gifted programs through standardized testing, such as the California Standardized Test (CST) or independently administered IQ tests. The students range in age from eight to ten years old. The school
offers a traditional educational track for Kindergarten through sixth grade program and an accelerated academic program for second to sixth grades.

The subjects were drawn from a program classroom, where language arts and mathematics are compacted and curriculum is taught at an accelerated pace. This classroom was chosen for the convenience of the researcher, who is also the primary teacher. Gender, race and socio-economic class were not selection factors for this study.

**Written Pre-Test Data Collection**

A written pre-test was administered by the researcher, who is also the full-time classroom teacher, to all participants prior to the unit of study to determine existing background and understanding on the subject of Chinese Immigration to California. Paper and pencils were distributed. Students were given 20 minutes to read, think, and write about the prompt. The teacher gave no background or instruction on the topic of the test. The term immigration was defined as the act of moving to another country to live. The pre-test asked the students to write about what they knew about Chinese Immigration to California. In order to compare and evaluate thinking and vocabulary development about the subject, this same written assessment is also used for the post-test.

**Materials**

The materials used in this study were gathered from high quality sources and relevant to Chinese immigration to California. Materials were selected based on their level of readability for fourth graders and relevance to the subject. The subject matter was selected because it satisfies one of the fourth grade standards for social studies, the Chinese immigrants who labored on the Transcontinental Railroad. “Students analyze the
hostilities toward the large Chinese labor force in California during the 1870s that led to the Chinese Exclusion Act of 1882” (California Department of Education, 2011, p. 4.35) and the Immigration Station at Angel Island.

The researcher accessed primary source documents, letters, narratives, interviews, pictures and photographs that detailed the time in California’s history when immigrants arrived from China to labor on the railroad and mine for gold. Sources for these documents were the Library of Congress, National Archives, California Museum, Angel Island Immigration Station, University of California, Berkley and University of California, Davis. Tools for interpretation of information, and analysis were developed for the Library of Congress. There is a wealth of information about this period of California History for teachers or researchers that want to add or change the materials used to the needs of their classroom.

Other materials included the novel *Dragon’s Gate*, by Laurence Yep (1993). This well researched novel took the author over 20 years to write. The narrative covers the immigration of Chinese to California, due to economic instability following the First and Second Opium Wars with Great Britain, and the building of the Transcontinental Railroad over the Sierra Nevada Mountain Range. The narrative is told from the perspective of a young Chinese boy who travels to the Golden Mountain in order to escape trouble back home. At the time of this study, no written primary sources from Chinese immigrants during the gold rush and construction of the railroad exist.
Transcripts of immigration interviews, photos of the Angel Island Immigration Station and poems translated from the walls of Station were also included to create an overall understanding of the Chinese immigrant experience.

The district adopted fourth grade history and social studies consumable textbook for California, published by (White, 2006) was utilized for the control group lessons. The researcher worked to structure lessons for the treatment group that would parallel as closely as possible the content covered in the textbook, so that both groups received exposure to the same material. The research also referenced the Common Core State Standards (2010) for lesson alignment with fourth grade history, social studies, reading and writing domains.

The subject of Chinese Immigration to California is a complex study, which asks students to consider two or more perspectives. Students through the readings must determine the reliability of the source and potential bias of the author.

**Treatment Lesson Procedures**

Students received eight 45-minute lessons over a period of two weeks. Since the researcher is also the classroom teacher, the students were pulled together and assigned primary documents, pictures and photographs to read and analyze. Both groups received background knowledge on Chinese railroad workers in California through the reading of the novel *Dragon’s Gate*. At the time of this study, written primary sources from Chinese living and working in California during this period of time have not been discovered.

The students in the treatment and control groups were assigned readings on the same topic, but from different sources. Both groups were given an essential question to
guide their reading. At the end of their reading, students were expected to respond to the essential question in writing, siting textual evidence, when needed.

**Instructional Model**

Inquiry-based learning is an instructional model frequently used in gifted education because the method allows for students to take ownership of their learning and create their own meaning. This approach to instruction is beneficial for gifted learners because it allows all learning styles access to the material and information.

The lesson design for the treatment group included time for independent and collaborative investigations. The researcher chose to create the lessons in this style to allow students the opportunity to create understanding both on their own, and also within the learning community of the treatment group. Gifted students need opportunities for deep, independent research, study, and product, as well as time to communicate and argue their thinking with others. In the learning community of the treatment group, the students will share their thinking and arrive at conclusions with the support of their peers.

For this study, the students became “History Detectives” using artifacts and primary sources to construct an understanding of the Chinese immigrant experience in California. The unit of study consisted of eight lessons taught over two weeks. Hirsch (2003) “reading comprehension and vocabulary are best served by spending extended time on reading and listening to texts on the same topic and discussing the facts and ideas around them” (p. 11). After reading and analyzing text and documents, the teacher would facilitate the student discussion of the material using the Socratic method to deepen thinking and questioning.
Lesson 1. The students were assigned a primary source document containing an account of the Chinese in California from the perspective of a resident of San Francisco. The assignment asked the students to read the document more than once and evaluate the contents using a tool designed and developed by the educational staff and the National Archives and Records Administration. In addition to completing the tool from the National Archives, the students were asked to create a list of unfamiliar vocabulary and confusing terms.

*Sample of the document tool used to gather the information needed to complete the lessons.*

1. Determine the type of document. The student is given multiple document choices to select.
2. Unique physical characteristics of the document. Multiple choices given.
3. Date(s) of document. If applicable, students would list a date or dates.
4. Is there an author or creator of the document and what is their position or title?
5. For what audience was the document written?
6. Document information
   a. List three things the author said that you think are important.
   b. Why do you think this document was written?
   c. What evidence in the document helps you know why it is written?

   Quote from the document.
d. List two things the document tells you about the life in the United States at the time it was written.

The students read the material independently. At the end of the 45 minutes, the teacher gathered the group again and led a discussion about the reading using the items from the analyzing tool. Using the Socratic method, the teacher facilitated the questioning and discussion among the group. The discussion was started with the question, “Tell me what you discovered about this writing.”

The control group read a lesson from the fourth grade History-Social Science Textbook for California, (White, 2006). The guiding question for the reading of the text was “How did the movement of people and ideas change in California?” This question focused student learning while they read the text independently and answer the questions in the textbook.

The topic of study for both groups of students related to the increasing capability to move people, communication and goods between California and the rest of the country. This increased capacity is an effect of the improvements in technology, such as the Pony Express, telegraph, and ultimately, the Transcontinental Railroad.

**Lesson 2.** The second lesson was given during the 45-minute social studies block. The treatment group was given a drawing of Chinese miners working in the gold field (Fig.1) to study and analyze (Graves, 1902b). The students used a tool created by the National Archives to aid their study. The control group was assigned reading from the fourth grade social studies text on the Transcontinental Railroad.
Students in the treatment group were instructed to study the illustration, break the drawing into quadrants, categorize, and describe what was depicted in each quarter and determine how the work informed their understanding of the Chinese Experience in California.

*Sample of tool designed for analyzing visual images.*

Step 1. Observation.

a. Study the photograph (or picture) for 2 minutes. Form and overall impression of the photograph and then examine individual items. Next, divided the photo into quadrants and study each section to see what new details become visible.

b. Use the chart below to list people, objects, and activities in the photograph. Categories are people, objects, and activities.

Step 2. Inference. Based on what you have observed above, list three things you might infer from this photograph (or picture).

Step 3. Questions.

a. What questions does this photograph raise in your mind?

b. Where could you find answers to them?

A post-lesson small group discussion of the illustration will be facilitated by the teacher using the Socratic method. Emphasis is on the group creating an understanding of the illustration in context of California history.

The control group was assigned a reading from the fourth grade History-Social Science textbook to read independently. The guiding question was “How did the
discovery of gold affect California?” Students responded in writing to questions in the text.

**Lesson 3.** For the third lesson, students in the treatment group were given translations of four poems (fig.5) from barrack walls of Angel Island CSDP&R (1920b). The students were asked to read all the poems and choose one poem to analyze. This activity was completed independently. At the conclusion of the exercise, students shared in a small group the poem they chose to analyze and their interpretation of the poem.

**Lesson 4.** The fourth lesson required the treatment group to read and interpret transcripts from an immigration interview and analyze a photograph (Fig. 4) of a Chinese man being interviewed by immigration officers at Angel Island (Brooks, 1923) – The students were asked to read and analyze the interviews to construct a deeper understand of time and place. Students took on the role of either the Chinese immigrant or the immigration officer.

The control group was given an assigned reading from their history-social science text related to change in California’s economy and population as a result of the Gold Rush.

**Lesson 5.** Students were given a photograph (Fig. 3) of immigrants arriving at the Angel Island Immigration Station (CSDP&R, 1920a). They were asked analyze the content of the photograph using the tool from lesson 2. Students worked in groups of twos and threes to evaluate and discuss the content of the photograph. The lesson concluded with the students reporting their findings to the teacher and group.
The control group was assigned a reading from the history-social science textbook related to immigration to California. The guiding question was “How did different people coming to California affect our state?” Students focused on the question as they read the text and answered the questions in the chapter.

**Lesson 6.** The treatment group was assigned the task of analyzing an excerpt (Fig. 6) from the Chinese Exclusion Act of 1882 (National Archives, 1989). They were asked notice any identifiable features from the document. Examples of noticeable features are the handwriting style, distinctive marks or seals, formality of voice in the writing, and the quality of the paper. Students need to try to interpret the purpose and occasion of the writing, as well as the intended audience. The students used the tool created by the National Archives and used in lesson 1 of the unit.

The control group was given an assigned passage to read from the social studies textbook on immigration and the Chinese Exclusion Act of 1882. A small passage from the Congressional Act was included in this reading.

**Lesson 7.** The structure for this lesson was similar to the format of the preceding lessons. The group was pulled together and assigned to examine a poster (Fig 2) from the time after the Chinese Exclusion Act was signed (Graves, 1902b). The students collaborated in groups of two or three to discuss the format of the poster, the purpose and occasion, and intended audience.

During the collaborative time, groups were asked to take a side or position either in agreement with the content and attitude presented in the poster or the counter-position, or opposition to the poster. Students were then asked to argue for their point-of-view.
The control group was assigned reading from the textbook with the guiding question, “How have immigration and settlement helped California grow?”

**Lesson 8.** For the final lesson, the teacher-researcher pulled the treatment group together one last time. The nine students were split into one group of five and one group of four. The researcher provided both groups with copies of all the documents they studied over the past seven lessons. The task for the groups was to create a timeline of Chinese immigration using the knowledge and documents they studied.

The control group worked on a similar assignment. The students worked in groups of four to construct a timeline of Chinese immigration in California, based on the assigned materials and readings from their lessons.

To close the unit of study about California history, students from the treatment and control groups posted their timelines around the classroom and the students used a gallery walk to review the learning presented by each group.

**Qualitative Data Collection**

During and following each lesson, the researcher collected anecdotal notes from student discussion and questioning. After each lesson, students were given time to question and reflect on their learning. The teacher, acting as facilitator, moderated the discussion, clarified questions and thinking, and guided student understanding of the lesson.

The method of instruction was inquiry-based, which allows the students to create their own discoveries about the writings and artifacts they reviewed. The students were
given guiding questions and evaluation tools and organizers to help them research the primary sources.

Following a lesson, students in the treatment group would gather with the teacher and reflect on their findings. The teacher would facilitate questions and answers from the group.

**Post-test Data Collection**

The primary assessment of student learning was a written assessment asking students to tell about their understanding of the unit on Chinese immigration to California after the lessons. Students were given a paper, and pencil to write. Students were allowed to use text from the unit and notes, if needed.

Data on improvement in English Language Arts was collected from the spring 2014 MAP (Northwest Evaluation Association, 2014) test results (Table 2). The assessment provides an overall picture of each student as a reader. The test also evaluates the students reading ability in three goal areas, literature, informational text, and foundational skills and vocabulary.

**Analysis of Pre and Post Test Data Collection**

Prior to the instruction of the lessons, the students were given a written pre test to help the researcher determine what the group already knew about the topic of Chinese immigration to California. At the conclusion of the study, students were given a prompt similar to the one used for the pre test, which asked them to write what they now knew about the topic of study.
**Reading Comprehension and Critical Thinking.** The pre and post written assessments of both groups, treatment and control, were compared for growth in understanding of the content. Individual student pre and post-tests were analyzed side by side for learning. Evidence of student growth was demonstrated by the content of the writing and critical thinking. Growth in understanding was demonstrated by student inclusion of big ideas, events, and the use of key terms from the unit. Critical thinking was evaluated not by the ability to recall details, but in student connections to the content. Personal, textual, and, or global connections were considered evidence of critical thinking. Grammar and written conventions were not evaluated.

**Reading Ability.** The computerized MAP assessments from winter 2013 and spring 2014 were compared for growth in overall language arts performance, literature, informational text, and foundational skills and key vocabulary. Student achievement on the MAP test places the student’s reading ability into one of five categories, low, low average, average, high average, and high. The student’s score will determine the level of reading proficiency.

**Engagement and Motivation.** Observational notes by the researcher along with completed product will be the basis for evaluating student engagement and motivation throughout the eight lessons. During lessons and post lesson discussions, the researcher will make written anecdotal notes of student behaviors and discussion from the treatment group. The teacher will use completed product of the lessons, written responses from both the treatment and control groups to determine the level of engagement. Evidence of
engagement will be determined by the completion of assignments and quality of the written responses.

**Summary**

The information presented in Chapter 3 gave a detailed account of the selection of subject pool, instructional practice and method, measures of learning, data collection, and lesson details for the treatment and control groups.

In Chapter 4, the results of the data collection will be compared, and a presentation of the findings will be discussed. The effects of the study on student reading comprehension and critical thinking are analyzed and discussed.
Chapter 4

RESULTS

Chapter 4 begins with a report of the positive effects of the instructional model as described in Chapter 3. The pre and post assessments are presented, analyzed and compared. Findings from data collected during the lessons will be used to answer the primary and secondary research questions will be discussed.

1. Will the inclusion of primary sources, in the form of historical documents, illustrations, and photographs, in a unit of study in the content area of California history and social studies develop and improve comprehension, and critical thinking of high achieving fourth graders?

2. Will the use of primary source materials increase engagement and motivation of fourth grade learners?

3. Will using the Socratic method for conducting pre and post reading discussions improve critical thinking among fourth graders?

4. Will implementing the gradual release model increase student ownership of their learning?

Engagement and motivation using model

The researcher noticed increased interest and participation in the treatment lessons when students were asked to take on the role of a “History Detective.” The students were assigned the task of reconstructing the Chinese experience based on primary source documents, photographs, and illustrations. The increased level of engagement was measured by the amount of participation during discussion in the form of question and
response as the students worked towards developing an understanding of the analyzed material. Student discussions, facilitated by the teacher, were conducted at the close of each session. This practice followed the gradual release model of learning.

The lessons were structured as student investigations relying on the learner to use inquiry and questioning when evaluating the materials from each lesson. The model of student led learning increased enthusiasm about the study and engagement in with the subject matter. Engagement was defined by student discussion and participation in debriefing sessions, and written output, as evidenced by completion of lesson tasks and tools.

The personal engagement and motivation built into the inquiry based lesson model enhanced the learning experience for the students. The students became directors of their own learning, which heightened the level of interest as they encountered personal discovery. The questions assigned were open-ended and allowed to the students investigate for their own purposes and create their own meaning. The tools for analysis designed by the National Archives supported the students in their independent or collaborative examination of the materials and readings.

Positive outcomes were noted by the researcher in both increased understanding of the subject matter and the engagement of the students. During post-lesson discussions, the researcher noted an increased interest in the topic as evidenced by the questions and reactions of students in the discussion groups. In their reports, students made connections between the treatment of Chinese immigrants and African-American slave. The group moved towards an overarching theme of injustice and recognized societal patterns.
Reflective conversations lead to more probing and inquiry from the treatment group and an eagerness for the next lesson.

**Comparison to control group**

The researcher recognizes student written and oral participation to be an indicator of learning engagement. By this measure, the control group could be considered less engaged because they did not benefit from partner work or group discussions.

Participants in the control group were assigned a passage of text to read. Assignments were at a fourth grade reading level and expected to be read, and completed independently. Each assignment involved reading a chapter in the fourth grade history and social studies consumable textbook White (2006). Though the textbook was created before the adoption of the CCSS in California, the textbook is imbedded with questions, which require the students to interact with the informational text. The students are asked strategic questions about structure of the text. One example of a question from the textbook is “How did some Chinese railroad workers stand up for their rights in 1867?” The question requires students to read the text and determine the main idea and detail. Another question asks students to put the information from the text in sequence, “Use dates to describe the immigration of different groups to California.”

The questions require students to understand the content and subject matter. Written activities are not purely factual in nature, instead the questions require students to return to the text and construct a response. For example, in one assignment from a lesson on immigration to California, readers are asked to summarize what they have learned from the reading the text, “Between 1850 and 1890, immigrants from all over the world
to California. Many of them faced great hardships and discrimination. Describe what life was like for immigrants in California in the mid- to late 1800s." In each chapter students answer a variety of questions created to engage students in understanding informational text and structure. The student writing was the only indicator of learning and engagement for the control group.

One of the secondary methods of research will make use of primary sources in examined student motivation and engagement with the subject and the lesson would increase with the treatment model and materials. The model for the control did not include the same level of interaction with the text. The engagement of the group was evaluated by the completion of the assignment and the amount of on task behavior observed by the teacher. The tasks required independent reading and writing with little support from the teacher. Though the tasks were not entirely engaging, most students in the treatment group were on task.

In comparison, the results from the written pre and post-test reveal a noteworthy increase in understanding and retention of information based on the verbosity of the writing and inclusion of key terms.

**Written pre-test responses from treatment group**

The written pre-test on the topic of Chinese Immigration to California, garnered responses from all students participating in the study. Student responses varied in length between one and three sentences. Out of the nine students in the treatment group, six stated that Chinese immigrated to California during the Gold Rush to mine for gold, earn money, or help construct the railroad. Three of the nine students stated they knew nothing
about the topic. Student grammar and written conventions were not evaluated for this study.

Examples of student responses from the treatment group

1. “The Chinese moved to California for Gold Rush to try to strike it rich and also for the transcontinental railroad building.”

2. “I know that Chinese people immigrated to California in the time of the gold rush. I also know many Chinese people worked on the railroads. I know Chinese people immigrated to California because they needed money.”

3. “I know that many Chinese came to America or “The land of the golden mountain” for gold.”


5. “It is not always fun. Most went to mine or work on the Continental Railroad.”

Written pre-test responses from control group

The responses from the written pre-test for students in the control group ranged in length from one to four sentences. In content, four out of eight students mentioned the Gold Rush as a motivator for immigration to California. Two out of eight wrote about the Chinese traveling by boat to California. One student wrote about escaping the Manchus in China and one discussed the desire of the Chinese to learn about the technology of the locomotive. Another student wrote that she had not learned anything about this topic.

Examples of student responses from the control group

a. “They took a boat across the Pacific Ocean to California.”

c. “The Chinese went to California/ Land of the Golden Mountain thinking it was a way to drive out the Manchus in a way.”

d. “What I already know about the Chinese immigration to California: people from China moved to California for the gold rush, mainly, a time when people from around the world paid a thousand dollars or more for a ship trip to the goldfields of California.”

e. “Chinese people tried new foods, wear new clothing, using new things, and seeing new sights. Some Chinese people cannot speak English.”

Comparison of responses from the written pre test

The immigration of Chinese to California to mine for gold is a key concept in the development of California. In the treatment group 67% of the students stated they understood the gold rush was the primary cause for Chinese immigration, while 50% of the control group recognized the gold rush as a cause for immigration. The difference in prior knowledge about the topic was narrow margin of 17% in understanding. The researcher notes this is not a major discrepancy in background knowledge or ability.

MAP assessment: Computer-assisted language arts assessment pre-study

A second form of data collection is from the Northwest Evaluation Association (2014). This non-for-profit educational services organization created an adaptive, computerized assessment called, Measures of Academic Progress, or MAP which
measures reading ability for grades 2-5 as aligned with Common Core 2010. The test is adaptive, meaning the questions are adjusted based on how well a student answers a question. The students were assessed in the winter of 2013. The researcher proctored this exam. The results of student performance in reading, is broken into three sub groupings, literature, informational text, and foundational skills and vocabulary.

Table 1

*Pre-study MAP Scores Winter 2013*

<table>
<thead>
<tr>
<th>Research Subject</th>
<th>RIT (+/- Std Err)</th>
<th>Percentile (+/- Std Err)</th>
<th>Lexile Range</th>
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<th>B</th>
<th>C</th>
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<td>HiAvg</td>
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</table>

*Student assessed 35 days after the other students (Northwest Evaluation Association, 2014)*
The treatment and control groups are achieving in the high or high average categories in all three assessed areas of reading with the exception of one student scoring low average in the area of literature, and average in the areas of informational text, and foundational skills and vocabulary.

**Results of Pre-study MAP Assessment: Treatment Group**

Of the treatment group 78% of the students scored high in the area of informational text 11% scored high average and 11% scored low average. In literature, 67% earned fell in the high range, 22% in the high average, and 11% in the low average range. In foundational skills and vocabulary 78% scored high, 11% earned high average, and 11% average.

**Results of Pre-study MAP Assessment: Control Group**

The control group results show 50% of students achieving a high score in literature, and 50% scoring high average. In informational text, 75% of the control group students scored high, one student earned a high average score, and one earned a score of average. In the area of foundational skills and vocabulary students, 88% of the students scored high, and 12% of students scored average.

**Comparison of pre-study MAP test results**

With 89% of students achieving at a high average to high level in the treatment group and 88% of the control group earning high and high average, the researcher’s goal was to increase exposure to informational text and develop skills understanding text, and text structure, and for critical thinking. The chosen design for the treatment group involved using primary source documents, illustrations, and photographs exclusively and
no access to the secondary source material. The control group was assigned material to read and evaluate from the history and social studies text.

The data from the MAP tests show the students from the treatment and control group achieving at a high level with a difference of only 1%. The researcher determined from the data that the groups were evenly matched in reading ability. The researcher included data reflecting student ability in literature and foundational skills and vocabulary in order to present a more precise portrait of these two groups of fourth grade readers.

The materials selected for this unit tied into the study of California history. The area of history and social studies was used because it allowed the researcher to examine reading practice among proficient readers with informational texts and primary sources.

Post-study written results from treatment group

Student response to the open-ended question about their understanding of Chinese immigration to California increased. Six out of nine students wrote three or more sentences about the topic. Content covered in the responses included Gold Rush, Transcontinental Railroad, Angel Island, Chinese Exclusion Act, discrimination and unequal pay.

Examples of student responses from the treatment group

1. “I think the Chinese moved to California because they probably disagreed with their government. They also probably did it because they wanted to get gold and get rich.”
2. “I know that many Chinese immigrants were workers on the Transcontinental Railroad. I know they were kept in harsh conditions and were not allowed to leave. Also, they had to pay for their own food and were paid less money than westerners. The harsh conditions caused the Chinese to strike.”

3. “The Chinese came to America, which they called the Land of the Golden Mountain, if they came they would work in a mine, they’d be stuck in America because of the Chinese Exclusion Act, which meant no Chinese could leave or come to America.”

4. “The Americans were bound to get money, more money than the Chinese. They were building the Transcontinental Railroad and they went on strike.”

5. “Most Chinese came here to mine gold. When they came some decided to work on the Transcontinental Railroad. They were underpaid and overworked.”

**Post-study written results from the control group**

The control group responses on the post-test increased in content among all eight students. Student wrote between three or more sentences to communicate their understanding of the unit, post-study. Key terms included Gold Rush, strike, Chinese Exclusion Act, and Transcontinental Railroad.

**Examples of student responses from the control group**

a. “Chinese immigrants had problems finding jobs. They didn’t get treated fairly, because they got more work hours, but less pay. They were building the Transcontinental Railroad, but no equal pay or work hours, so they went on
strike.”

b. “The Americans were discriminating against the Chinese immigrants by giving them low pay, the rare food, and had to work longer. The Americans pushed them hard because Eastern and Western sides were having a race to the middle of the U.S.A. and whoever got first won money.”

c. “The Chinese went to the U.S.A. to get rich and go home. I think the Congress passed the Chinese Exclusion Act in fear of the Chinese taking over their country. The Congress was discriminating against the Chinese. They left the Chinese on Angle Island for a long time. I think that the Congress was being unfair.”

d. “After Congress made the Chinese Exclusion Act, Chinese people went on strike, because some Chinese didn’t like the law. Americans hated Chinese moving in and taking farmland.”

f. “Many Chinese immigrants moved to California because of the gold rush, which tempted them with money that was not as easy to get as the Chinese expected. (Although, what they expected was streets paved with gold!) and they also were forced to do things they sometimes did not want to do, got paid less, and longer hours then other races. It wasn’t fair.”

Comparison of post written assessments

Overall, students in both groups increased the written product in their post assessment when compared to pre-test. The author concludes that both models produced improve in student understanding about the subject. Evidence of key terms and
understanding of Chinese immigration were present in the writing of both groups. The evidence shows positive outcomes from both groups. Student’s growth in understanding of the topic grew over the eight lessons regardless of the model or materials used for instruction.

The researcher asserted an improvement in student understanding and critical thinking through the use of primary sources and informational text. The findings from the written assessment show growth in comprehension in both groups. In conclusion, the researcher finds that reading text was the main factor influencing the positive outcomes in both groups. The treatment group read and analyzed only primary sources, while the control group read from a secondary source. The history and social studies book used for the control group is an example of informational text, which supported the students in their learning.

**MAP assessment: Computer-assisted language arts assessment post-study**

The second form of data collection was the MAP: reading assessment for grades 2-5. This computer-adaptive test was created by the Northwest Evaluation Association (2014) to evaluate students in three areas of reading, literature, and informational text, foundational skills. The students are assessed three times in one school year to evaluate student growth and assist educators in planning instruction. Ideally, students should show consistent growth in achievement as they progress through the school year.
Table 2

*Post-study MAP Scores Spring 2014*

<table>
<thead>
<tr>
<th>Research Subject</th>
<th>RIT (+/- Std Err)</th>
<th>Percentile (+/- Std Err)</th>
<th>Lexile Range</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>205-208-211</td>
<td>42-54-62</td>
<td>645-795L</td>
<td>Avg</td>
<td>Avg</td>
<td>Avg</td>
</tr>
<tr>
<td>2</td>
<td>231-234-237</td>
<td>96-97-98</td>
<td>1113-1263L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>209-212-215</td>
<td>55-65-72</td>
<td>717-867L</td>
<td>HiAvg</td>
<td>Avg</td>
<td>HiAvg</td>
</tr>
<tr>
<td>4</td>
<td>217-220-223</td>
<td>77-83-88</td>
<td>861-1011L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>5</td>
<td>213-216-219</td>
<td>67-75-83</td>
<td>789-939L</td>
<td>HiAvg</td>
<td>HiAvg</td>
<td>HiAvg</td>
</tr>
<tr>
<td>6</td>
<td>212-215-218</td>
<td>65-72-79</td>
<td>771-921L</td>
<td>HiAvg</td>
<td>HiAvg</td>
<td>HiAvg</td>
</tr>
<tr>
<td>7</td>
<td>237-240-244</td>
<td>98-99-99</td>
<td>1221-1371L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>8</td>
<td>232-235-238</td>
<td>96-98-99</td>
<td>1131-1281L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>9</td>
<td>227-230-233</td>
<td>93-95-97</td>
<td>1041-1191L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a)</td>
<td>219-222-225</td>
<td>79-86-90</td>
<td>897-1047L</td>
<td>High</td>
<td>High</td>
<td>HiAvg</td>
</tr>
<tr>
<td>(b)</td>
<td>222-225-228</td>
<td>86-90-93</td>
<td>951-1101L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>(c)</td>
<td>227-230-233</td>
<td>93-95-97</td>
<td>1041-1191L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>(d)</td>
<td>214-217-220</td>
<td>67-77-83</td>
<td>807-957L</td>
<td>High</td>
<td>High</td>
<td>HiAvg</td>
</tr>
<tr>
<td>(e)</td>
<td>215-218-222</td>
<td>72-79-86</td>
<td>825-975L</td>
<td>High</td>
<td>HiAvg</td>
<td>High</td>
</tr>
<tr>
<td>(f)</td>
<td>222-225-228</td>
<td>86-90-93</td>
<td>951-1101L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>(g)</td>
<td>218-221-224</td>
<td>79-85-89</td>
<td>879-1029L</td>
<td>High</td>
<td>Avg</td>
<td>High</td>
</tr>
<tr>
<td>(h)</td>
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<td>95-97-98</td>
<td>1095-1245L</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

(Northwest Evaluation Association, 2014)

The post-study assessment shows the range in achievement narrowing among students in both the treatment and control groups than the pre-study assessment. The analysis of the assessment will be discussed in Chapter 4.

**Results of Post-study MAP Assessment: Treatment Group**

On the post-test 66% of the students in the treatment group scored high, 22% earned high average, and 11% scored average in the performance area of literature. In the
area of informational text, 55% scored high, 22% earned high average, and 22% scored average. The students scores for foundational skills and vocabulary were 55% high, 33% high average, and 11% average. Overall students scored in a range considered proficient among their grade level peers.

The student with the earning a low average score in the area of literature, and average in both informational text and foundational skills and vocabulary improved on the post test. The student increased proficiency from low average to high in the area of literature and from average to high average in the areas of informational text and foundational skills and vocabulary. The improvement in performance shows a positive response to the unit of study for this student.

In the goal performance area of informational text, three students scores declined. One student score changed from high average to average, another from high to high average, and a third changed in score from high to average. The decline shows a negative response to the study.

**Results of Post-study MAP Assessment: Control Group**

The post-study results for the control group show 100% of students earning a high score in the area of literature. In informational text, 75% of students earned a high score, 12% earned high average, and 12% scored average. Foundational skills and vocabulary scores were 75% high, and 25% high average.

**Analysis of Pre- and Post Test Data**

*Analysis of written assessment Pre and Post Study*
The evaluation of learning consisted of a pre and post written assignment. The format of the written assessment was an open-ended prompt, “Write what you know about Chinese immigration to California?” The researcher chose to use an open-ended prompt to engage students in telling as much as they know, as opposed to limiting student response with questions requiring summarizing or retell of information, or responses that rely heavily on memorization of facts and details.

The written response for both the treatment and control groups developed in length between the pre and post assessments. In contrast, students in both groups shared limited content in response to the pre-test, when compared with the post-test. Student responses from both groups included key terms from the study of Chinese immigration in the post-test. Key terms and ideas from the study included, Gold Rush, Transcontinental Railroad, Chinese Exclusion Act, Angel Island Immigration Station, discrimination, workers’ strike, workers’ pay and hours, and interrogation. The author used these key terms and ideas to evaluate the affect of the study on student understanding of the topic and the content pertaining to the study.

Analysis of MAP assessment Pre and Post Study

The second source of data collection was the MAP (Northwest Evaluation Association, 2014) assessment, a computer-adaptive test for language arts, grades 2-5. This is the first year the researcher’s school has assessed student learning using this tool. The adaptive test is given three times a year, fall, winter, and spring. The range of student achievement in the study population was from low average to high on both winter and spring (pre and post) tests. With students achieving at proficient or high levels of reading
competency in the treatment group, the researcher focused on providing increased exposure to informational text, and organizers and tools to assist students when evaluating and analyzing of documents, illustrations, and photographs.

**Findings for the treatment group**

Of the treatment group 78% of the students scored high in the area of informational text 11% scored high average and 11% scored low average. Post-test results for the sub category of informational text, 55% scored high, 22% earned high average, and 22% scored average. The findings show a significant drop of 23% in achievement with informational text.

The drop in informational text could be related to factors outside the control of the research study. To adjust for this decline, the researcher recommends reading a combination of primary and secondary (textbook) materials when this unit is taught.

**Findings for the control group**

The MAP (Northwest Evaluation Association, 2014) scores for pre and post study students in the control group remained unchanged. In informational text, 75% of the control group students scored high, one student earned a high average score, and one earned a score of average on both tests. Improvements were made in the goal area of literature with 100% of the students achieving a high score. Of the eight students in the control group, 50% earned high average on the pre-test increased their score to high on the post-test. In foundational skills and vocabulary, two students showed decline from high to high average, while one student improved from average to high.
Conclusion

The outcomes in this study illustrate an improvement in student engagement and motivation among participants in the treatment group. The students in the group benefited from self-directed learning, collaboration, studying, and analyzing primary source documents relevant to the topic of Chinese immigration. More opportunities for inquiry learning using primary sources in history will enhance overall student learning.

When written and computerized data was compared for this study, the control group showed stronger growth in overall reading comprehension as evidenced by the post-study MAP data. Students in the treatment group did not perform as strongly on the concluding MAP test. The researcher concludes that students benefit positively from information presented by secondary sources. In fact, the secondary source acts as a support to the learner’s understanding of the primary source material.

The fact that several students experienced a decline in achievement on the final MAP tests presents an area for future analysis. Other factors for decline should be considered, such as student and testing errors. The researcher did not have access to detailed student assessments and could not perform an error analysis. An alternate assessment of reading comprehension may balance the findings and rule out discrepancies.

Summary

Chapter 4 presented the outcomes of the study and analyzed the findings. Overall students maintained proficient reading levels with some gains and some declines amongst
both groups of students. In Chapter 5, the researcher will discuss the implications of the findings, report limitations of the study, and identify areas for future research.
Chapter 5

SIGNIFICANCE

Chapter 5 will discuss the implications of the results of student performance and data, limitations of the study, and areas for future research. Chapter 4 provided analysis of the findings from the unit of study on Chinese immigration for fourth grade students.

Discussion of findings

The findings are inconsistent with the expected outcomes, which predicted significant student growth in the language arts and informational text among the treatment group. Data showing positive growth in overall reading, reading of informational text among students in the control group was unexpected. The students in the treatment group reported results contrary to the outcomes presented in the model. The researcher finds the treatment group may have benefited by receiving a combination of the primary source materials and the extra support provided in the secondary source. Adding the secondary source to the assignments would increase student exposure to the academic language and structure of the history textbook.

The results of the second research question regarding student engagement and motivation show positive response to the inquiry-based lesson design and materials. The researcher observed focused learners, engrossed in the task of reading and analysis of primary source materials. The reflective closing discussions had high participation rate among students in the treatment group. In contrast, the control group students were on task during lessons, but did not benefit from group discussions. One reason for this
finding may be that the learners in the control group are intrinsically motivated, and disciplined students.

The third research question involves the use of Socratic discussions to deepen student learning and critical thinking about a subject. The students in this class have been exposed to this style of discussion throughout the school year. Socratic methods are an effective format gifted learners. The anecdotal notes recorded by the teacher during debriefing discussions showed students actively involved in questioning, discussions, and debate.

The gradual release of responsibility model for learning is well researched and evidence in the field shows it is an effective approach in the classroom. The teacher uses this model in her classroom. The final lesson in this study involved students working in groups to construct and present learning about the subject. Students enjoyed sharing their products with other students in class and commented and questioned the timelines during the gallery walk.

The inconsistency in the findings may be the result of problems with the design of the study. In summary, students in

**Methodological issues and research limitations**

Limitations in research include the sample population, subject of the study, and length of study. Both the treatment and control groups consist of less than ten students, nine students participated in the treatment group, and eight in the control group. The students are identified as gifted and talented, and receive an instructional program that differs from rest of the students in fourth grade at the school. These students participate in
a program designed for a GATE population which involves students receiving instruction in language arts and math curriculum at an accelerated pace. The group of students who participated in the study achieve average or above average in language arts, which means this study is not generalizable to other populations which may contain a broader range of reading and academic capability.

Another limitation the researcher found in the development and implementation of this study was designing lessons for both the treatment and control groups that aligned closely with the guiding question for each lesson and the Common Core State Standards. To more accurately study the affects of primary and secondary source materials on students in a fourth grade classrooms, the researcher needed to ensure both groups were studying the same content as often as possible. The assignments for the control group were exclusively from the fourth grade history-social science textbook (White, 2006). In fairness to the students participating in the study, the treatment and control groups were given the opportunity and access to the same assignments after the eight lessons were taught.

The teaching style and lesson delivery are variables in this research study. The researcher is the primary teacher for this group of fourth grade student. The teacher uses a Socratic style of instruction to deepen and promote critical thinking. This group of lessons may have the same results if taught explicitly.

**Areas for further research**

The author notes more research is needed to determine whether the use of primary sources are more effective for increasing reading comprehension and critical thinking.
The Common Core State Standards include reading an increased amount of informational text across content areas. More research is needed to understand how this increase positively or negatively affects student reading comprehension.

The researcher also found the Library of Congress and National Archives to be incredibly useful resources for designing inquiry-based lessons for elementary students in history. More units of study could be developed using these resources.

**Conclusion**

The researcher observed increased interest and motivation in students using the primary sources in the treatment group. The researcher was unable establish the significance of using primary sources to increase achievement in reading comprehension and critical thinking. Scores on the MAP test did not show an increase in achievement with understanding informational text. More research is needed to determine why the treatment group scores dropped on the post-test. The author recommends using a combination of primary and secondary sources when teaching this unit of study.
APPENDIX A

Materials used in the lessons for this study
Figure 1.

Illustration of Chinese Miners in the California, using cradles, sifters, and pick axes (Graves, 1902a).
Figure 2.

Poster advertising the signing of the Chinese Exclusion Act, (Graves, 1902b).
Immigrants were arriving by boat at Angel Island Immigration Station (CSDP&R, 1920a)
A Chinese man being interviewed on Angel Island (Brooks, 1923).
Figure 5.

Photograph of the living quarters at the Angel Island Immigration Station. (CSDP&R1920b)
Figure 6.

Photo of the Chinese Exclusion Act of 1882 (National Archives, 2014)
Sample Pre and Post Written Assessments: Chinese Immigration Fourth Grade

Name_________________________________
Chinese Immigration Pre-test Fourth Grade

We are beginning a unit of learning about Chinese immigration to California. In order to guide our learning I would like to know what you already know about this topic.

**Immigration** means the act of moving to a foreign country to live.

Directions: Write what you know about Chinese immigration to California.

________________________________________________________________________
_______________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Name_________________________________
Chinese Immigration Post-test Fourth Grade
We learned about the many reasons the Chinese immigrated to California and the many challenges they faced. In order to evaluate your learning about this topic, I would like to know what you understand and know about Chinese Immigration to California from 1840-1940.

**Immigration** means the act of moving to a foreign country to live.

**Directions:** Write what you know about Chinese immigration to California.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
REFERENCES


CSDP&R. (1920a). Immigrants arriving by boat at Angel Island Immigration Station., California State Department of Parks and Recreation, CA: CSDP&R

CSDP&R (1920b). Photograph of the living quarters at the Angel Island Immigration Station., California State Department of Parks and Recreation, CA: CSDP&R


