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# Improving Classroom Instruction: Understanding the Developmental Nature of Analyzing Primary Sources

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## Abstract

Authentic and constructive learning experiences that include analysis of primary source documents are necessary elements of effective social studies teaching (Bailyn, 1994; Leinhardt, Stainton, & Virji, 1994; Wineburg & Wilson, 1991; Young & Leinhardt, 1998). This study examines the abilities of 70 fifth and seventh grade students to complete individual and multiple primary source document analyses based on their current background knowledge. Three researchers coded by grade, level of response (content), and type of processing (analysis of written discourse connectors and organization of written discourse) the completed document analysis tool responses. Rather than relying on others to interpret history for them, findings indicate that engaging students with primary source documents exercises the critical-thinking skills needed to analyze and interpret historical documents. However, this can be a very challenging task for students at this level. After connecting the study's results to current research, the article concludes with a set of practical suggestions.

## Background

Historians and history teachers describe history as an interpretive, constructive, analytic, and dialogic process —a discipline concerned with both knowledge of the past and the acts of constructing that knowledge (Bailyn, 1994; Leinhardt, Stainton, & Virji, 1994; Wineburg & Wilson, 1991; Young & Leinhardt, 1998). Even with this knowledge, many students experience history, as currently taught, to be a passively learned subject that consists of memorizing dates and facts (Cantu & Warren, 2003; Stahl, Hynd, Britton, & McNish, 1996). Often, this pedagogical approach does not contribute to students' historical understanding or positive attitudes toward the content. One way to create meaningful history learning experiences for students is to incorporate primary source analysis into classroom practice.

Working with primary source documents is not easy for students or teachers. While there has been a nationwide and statewide call for students in our schools to be able to critically read, analyze, and interpret primary source documents (National Council for the Social Studies, 1994; New York State Education

 

Department, 1996), many teachers are not prepared to teach students how to succeed in meeting these goals. Engaging students in document analysis requires the use of complex skills, attitudes, and habits of mind (e.g., reading and comprehending, discovering main ideas, understanding the importance of perspective, synthesizing, revising hypotheses, writing clearly, presenting ideas orally, even working collaboratively) that need to be built over time (Kobrin, 1995). Clearly, the challenge lies in teaching these complexities without overwhelming students. Teachers are seeking ways to teach students more effectively at all levels to analyze primary source documents and ways to understand how to incorporate the use of primary source documents into their curriculum (Dobyns, 1992; Dutt-Doner, Cook-Cottone, Allen, & Rech-Rockwell, 2002; Kobrin; Price, 1990).

## Purpose of the Study

The purpose of this research was to have a better understanding of the nature and development of the skills that aid students in analyzing primary source documents, the impact of students' background knowledge on their analysis of primary source documents, and the process by which students create historical understanding. To fill the gap in empirical research and better understand the critical middle school years, this study focused on students in the fifth and seventh grades.

### Improving Guided Practices

Primary source documents have long been used to enhance student learning in high school and college courses (e.g., Grant, Gradwell, & Cimbricz, 2004; Kobrin, 1995). In comparison to the growing accumulation of data demonstrating the effects of using primary sources at the high school level, however, studies on the use of primary source documents at the elementary and middle levels have been more limited.

Review of the elementary and middle school-based literature reveals that a better understanding of the developmental skills and teaching involved in utilizing primary source documents for the purpose of having students along the developmental continuum respond to document-based questions is needed. Students need to be equipped with the tools to make sense of historical documents, and teachers need to know how to aid students in this process (Lee & Ashby, 2000; Ravitch, 1990). Data from this study will enable educators and teacher educators to understand more clearly the complex nature of document-based analysis to improve instructional practice in classrooms.

### Research Questions

This research project was aimed at answering the following research questions: (1) What appear to be the essential skills involved in document analysis? (2) What are the skills that best predict successful document-based question response outcomes? (3) Are there significant differences between fifth and seventh grade students in these skills?

## Review of the Related Research

### Primary Source Document Use

Social studies teachers, historians, and teacher educators identify several purposes for using primary sources in the classroom. First, as indicated previously, primary source analysis appears to promote a higher level of critical thinking and improved comprehension (Callison & Saunders-Brunner, 2004; Miller, 1998; Morgan, 2002). However, this is only part of the primary source document pedagogical utility. In an effort to combat Cantu and Warren's (2003) apparent student paradigm that "social studies is boring," primary source document analysis offers students an opportunity to connect to history in a more personal, human, and active manner (Lafaye, 2001; Levstik, 1989, 1993; Maynard, 2003; Otten, 1998). That is, the student becomes the historian, the person who seeks out and discovers the truth. Now, for the student, it becomes a journey of personal discovery as opposed to the story of someone else's journey of discovery. Therefore, learning becomes moving and alive.

Rather than acting as passive learners of history, students can act as historians or researchers examining primary source documents (Brophy, 1992) by concurrently developing historical understanding, curiosity, and a motivation to learn (Cantu & Warren, 2003; Morris, 2002; Otten, 1998; Winks, 1968). It is a very powerful process for students who are learning about the role that interpretation plays in historical understanding (Bruner, 1966). Specifically, researchers have indicated that students who use primary source documents have a fuller and more thorough understanding of history (Lafaye, 2001; Miller, 1998) and have a deeper understanding of how primary source documents can contradict one another due to issues such as author bias (Shiroma, 2000; Winks). In this way, primary source documents provide students with an opportunity to view multiple perspectives rather than a summarized version of history (Lafaye).

While there appears to be a great deal of literature that provides "how to" information for teachers considering the integration of primary source documents, very little empirical research exists in this area. Teachers are making efforts to improve their teaching practices and integrate primary source documents as called for by state and national standards (e.g., National Council for the Social Studies, 1994; New York State Education Department, 1996), but they need to be assured by empirical findings that this practice is beneficial. As we have learned from research in other areas (e.g., Childhood and Adolescent Psychology), what might be best practice for high school populations may not be best practice for elementary and middle school populations (Cook-Cottone, 2004).

**Empirical Support for Classroom Practices**

Little empirical or qualitative research exists in the area of using primary source documents to teach social studies and the humanities that can guide teachers' practices. Furthermore, most of this research has been done with students in high school, advanced placement, and college levels (Kobrin, 1995; Price, 1990; Stahl et al., 1996; Young & Leinhardt, 1998). Because of the nationwide movement requiring students as early as fifth grade to demonstrate mastery in responding to document-based questions, it becomes critical that educators identify the skills needed for middle school students to prepare for such a challenging standard. The research indicates that students must have a structured and nurtured development of the skills necessary in order to analyze documents (Lee & Ashby, 2000; Spoeher & Spoeher, 1994). This requires that educators understand what skills are critical to students' success in analyzing documents, how to effectively scaffold students' analyses, and how students' developmental capacities affect teaching these skills (Brush, Saye, & PIHNet Development Team, 2005)

***High school level findings.*** Much of the research on primary source documents with high school students focused on identifying how students analyze primary source documents when given a document-based question and can yield some application for middle school teaching. To illustrate, Wineburg (1991) compared the think-aloud analysis of primary documents by novices (i.e., high school seniors) and experts (i.e., university historians) to better understand how each group reasoned about historical evidence. He suggested that differences between the two groups have less to do with historical knowledge than they do with an understanding of how historical knowledge is constructed. His findings indicated that early and frequent exposure to primary source documents might better prepare students to learn how to develop their own historical interpretations and negotiate the complex nature of others' historical interpretations.

Young and Leinhardt (1998) studied the development of five Advanced Placement History students' written responses to four document-based questions over a year. They found that students had difficulty managing the complex layers of answering document-based questions. However, as students gained experience, they moved from knowledge telling (i.e., listing period and document content as discrete information bits) to knowledge transformation (i.e., integrating content as interpreted evidence for an argument). Their findings indicated that exemplary social studies instruction should include using a wide array of primary and secondary sources to provide students with opportunities to construct historical stories rather than to memorize facts.

Finally, Stahl et al. (1996) studied 19 tenth grade students in an Advanced Placement US History class. Participants analyzed five or six documents about the Tonkin Gulf incident and summarized the documents to form an opinion. They found that the students addressed the problems using a sequence of behaviors, which

 

include (a) selection of ideas in each text read, (b) processing of ideas within that text, (c) creation of a mental model of the information, and (d) integrating ideas across texts to produce a final product. This model can be used by teachers at all levels to break down the process of analyzing primary source documents into smaller, more manageable skills for students as they are developing their capacity to handle the complex nature of document analysis.

Other literature is less empirically focused, but provides practical suggestions for teachers as they incorporate primary source documents into their practice. For example, Musbach (2001) identified five rules that teachers should follow when using primary sources. Ferguson (1986) recommended a set of guidelines for the use of primary documents in heterogeneous classrooms. Moreover, Kobrin (1995) drew four conclusions that serve as guiding principles for teaching practice when incorporating primary documents. These practical suggestions often included discussion of working collaboratively, developing student skills, selecting documents, developing students' background knowledge, providing document analysis tools, and developing the purpose for examining primary documents.

While these research studies are helpful to educators in better understanding the complexity of document-based analysis and some of the practical implications of using primary source documents, it is important to note that the primary participants were above-average high school students. Findings from these studies support the use of primary source documents in the classroom (Stahl et al., 1996; Wineburg, 1991) but identify the challenge that teachers face in developing the necessary skills and "habits of mind" to actively engage students in the analysis process. In order to engage critical thinking skills at this level, the research indicates that frequent and early exposure to primary source analysis is necessary (Young & Leinhardt, 1998). In addition, findings from research indicate that it is just as critical to develop students' attitudes and experiences with primary documents so that they approach document analysis in the same way as historians do (Wineburg). An examination of the research conducted with middle school students offers even more research-based knowledge.

***Middle school level findings.*** Lee and Ashby (2000) reported that between the ages of 7 and 14 there is a "broad shift with age from seeing history as stories ready-made and simply retold, to stories told by historians who find, compile, and collate information, to stories told by historians who actively produce their stories" (p. 209). This was consistent with the shift in skills inherent in the age-expected developmental movement from concrete to formal operational thought (Davies, 2004). Lee and Ashby found that it was not until sixth grade (typically age 11) that some students (10%) were able to understand differences in historical accounts are due to problems with sources (e.g., mistakes, transmission errors, inaccuracies, biases, lies) or interpretation. The middle school years may be the platform for this developmental shift in ability or a time of coming of age for independent historical reasoning with primary source documents. To illustrate, Foster and Yeager (1999) studied fifty-one 12 year olds' written and oral responses to conflicting written and pictorial historical sources. Foster and Yeager concluded that 12 year olds are capable of abstract historical reasoning, capable of a "process of constructing, reconstructing, and interpreting past events" (p. 286).

Other research at the middle school level conflicts with the findings of Lee and Ashby (2000) and Foster and Yeager (1999). For example, Harris (2002) studied 53 gifted eighth grade students' use of online primary source documents as part of a history unit. Findings indicate that students analyzed primary sources from the vantage point of their personal experience and current time frame; and that without a more structured framework, their incomplete knowledge did not allow them to write credibly. As Afflerbach and VanSledright (2001) noted, "Embedded [primary] texts and sources may contribute to students' immediate reading experience and to their developing understanding and appreciation of history. Yet, without teacher assistance these texts are extraordinarily demanding of some students" (p. 704).

The practical work of Massich and Munoz (1996) and Harris (2002) indicated that students must make personal connections to primary documents before any historical understanding can be achieved. The described classroom experiences showed that working with primary documents can provide opportunities to

 

make those connections and support the development of reading and writing skills while fostering an empathy and appreciation for the generations of those that came before them (Harris; Massich & Munoz).

While there has been some research at the middle school level and students' ability to work with primary sources, there is certainly not the breadth of research found for the high school level. Given the developmental paradigm of this age, which includes some students moving from concrete to abstract thinking in fifth grade and others not mastering these types of cognitive skills until much later, teachers need to know much more about the expectations for this group from both a developmental and historical perspective. They also need some practical ideas of what types of scaffolding could work with their middle school students as they learn and grow.

**Toward an Empirical Understanding of the Development of Document Analysis Skills**

Overall, there appears to be an emerging understanding of the skills involved in the analysis of documents, the context and implications for successful document analysis, and a growing body of practical suggestions for teachers. Accordingly, this research study was designed to add to the understanding of the nature and development of the student skills at the middle school level that aid in analyzing primary source documents, the impact of students' background knowledge on their analysis of primary source documents, and the process by which students create historical understanding. To fill the gap in empirical research and better understand the critical middle school years, this study focused on students in the fifth and seventh grades. Further, as this particular study focused on student skills and development, no historical teaching was provided. That is, the students were given instructions and comments as if they were taking a document-based question exam. The specific research questions include: (1) What appear to be the essential skills involved in document analysis? (2) What are the skills that best predict successful document-based question response outcomes? (3) Are there significant differences between fifth and seventh grade students in these skills?

## Methods of Inquiry

**Data Sources**

Participants for this study were 18 private school students from 2 fifth grade classrooms and 52 private school students from 3 seventh grade classrooms. The private school is a 5–12 independent day school with about 549 students in the school and class size averaging 12 students. Students took an entrance exam as part of the admissions selection process. Because of the school's curriculum and independent status, it did not follow New York State regents' standards. Students tended to be intelligent, highly motivated, and good readers. For this study, the researchers included students with parental consent in the fifth and seventh grades of the volunteering school. Each of the groups of students had previous experiences in analyzing primary sources but in most cases, the teacher scaffolded these experiences and small group assignments. Analyzing primary source documents independently was a new experience for almost all these students. Participants analyzed individual primary sources using analysis tools first on the related topic of the San Francisco earthquake of 1906 and then collectively analyzed the documents using an analysis tool. The task was structured to replicate the structure of the document-based analysis they experienced on the fifth grade statewide exam. Participants had not previously studied the San Francisco earthquake of 1906, though they had learned about earthquakes in science and had prior knowledge about the causes and impact of an earthquake.

The fifth grade classrooms have 12 desks each that form a horseshoe facing the whiteboard. Students sit in assigned seats, given the size of the two classes used in this study, there were empty seats scattered around the horseshoe. The seventh grade classrooms have a large room and again the seating is in a horseshoe shape facing the whiteboard and the teacher's desk is in front of the board. Students do not have assigned seats so their seating varied during the multiple day exercise. Seating was not changed in either the fifth or seventh grade classroom for the primary source exercise.

**Data Collection Procedures and Tools**

A multi-layered data collection approach was used to answer the research questions stated so that multiple data sources could triangulate findings. The study was conducted over a two-week period in each of the five classrooms during times of the day when social studies would normally be taught. To ensure consistency in

 

directions provided to students, the school library media specialist (SLMS) conducted the processes of the study in each classroom. She also had a regular presence in supporting the teaching that took place in the classroom. After being introduced by the classroom teacher, the SLMS told the students that they would be looking at some documents about the San Francisco earthquake of 1906 and would be asked to "analyze" the documents. She provided an explanation of the word "analyze" as needed. The SLMS told the students that she wanted to know everything they knew about earthquakes, the 1906 earthquake, 1906, or San Francisco. In multiple visits, the SLMS presented the students with the documents to be analyzed and the analysis guide to be used. She explained what the content of the document (e.g., a photograph of Market Street in San Francisco after the earthquake) and asked the students to complete the analysis guide. When students were unsure how to answer questions, the SLMS told the students to write what they thought. If they could not come up with an answer, they were directed to write "do not know" as a response. The students only received help to clarify vocabulary or instructions. The SLMS documented anecdotal field notes during data collection in order to provide a snapshot of the classroom experience during document analysis. While the teacher and SLMS remained in the room during the document analysis, they did not provide any scaffolding for students, as this research was focused on understanding the developmental capacity of individual students to analyze primary source documents at different grade levels.

***Background knowledge.*** To gain some insight into individual students' knowledge of the San Francisco earthquake, students were asked to write everything they knew about this historical time, event, and place. The background information tool required each student to complete a series of four open-ended response questions prior to viewing and analyzing the documents. These questions addressed students' general background knowledge about earthquakes, San Francisco, and the time. In addition, specific background knowledge was queried regarding the San Francisco earthquake of 1906.

***Individual primary source document analysis.*** In each classroom, students individually viewed a set of four primary source documents regarding the San Francisco earthquake of 1906, including two pictorial and two written (one newspaper account and one journal account). The different perspectives of the same historical event represented by the four documents provide a gauge of the students' ability to integrate sources and think historically. Every day the students were given one document, from the set of four, to analyze individually. Students utilized the appropriate document analysis tool from the National Archives specific to the type of primary source, which had been modified by the researchers. Document analysis tools from the National Archives were chosen because the tools required in-depth analysis and were developmentally appropriate for students across varying grade levels. The image analysis tool included 11 open-ended questions that evaluated students' observation, critical thinking, and inquiry skills. The written analysis tool included 11 open-ended questions that evaluated students' reading comprehension, and heavily emphasized critical thinking and inquiry skills.

To introduce each document, the SLMS read the documents aloud to the students before having them complete the analysis tool and provided a brief overview of the image sources so that the students understood the context. Then, students completed the document analysis individually.

***Multiple primary source analysis.*** On the final day of the study, the SLMS asked students to use the multiple document analysis tool to evaluate and synthesize the four documents collectively as well as to reflect on the process of forming an opinion regarding the documents. The multiple document analysis tool was composed of nine higher order, open-ended questions that allowed students to synthesize their analyses through (a) recognition of different perspectives and voices, (b) judgment of credibility and bias of sources, (c) negotiation of historical truth, (d) development of evidence-based arguments, and (e) document-based historical inquiry. Students were given a brief review of the primary sources that replicated what they were told when they individually analyzed the documents. They were also provided with their individual primary source analysis responses to use as they analyzed the documents collectively.

 

**Treatment of Data**

***Definition of variables.*** Variable parameters were constructed through prior knowledge (i.e., theory and previous empirical findings) and current experience (i.e., the coding process of this data set). That is, variable parameters were defined, in part, by previous research findings of the cognitive processes identified as potentially contributing to successful document analysis, integration, and subsequent question response (e.g., Lee & Ashby, 2000; Stahl et al., 1996) and from the responses of the participants in the study, both expected and unexpected. Accordingly, variables were explicated as explicitly as possible. Using this method, the researchers identified six major variables to examine across the student responses on document analysis worksheets.

***Coding of data.*** The researchers developed a set of rubrics for the background information tool, each individual document analysis tool type (written and image), and the multiple document analysis tool (see Appendix A). Within the set of rubrics, each of the students' written responses was given a numeric code reflecting the degree to which a particular variable was present in each response. The three researchers tested the rubrics for validity and reliability using random data sets. In order to ensure inter-rater reliability in data analysis, each researcher analyzed student responses on the document analysis worksheets using the rubrics. Student final item scores were calculated by averaging rater scores for each item.

The Background Knowledge Variable was the ratio of the score on the background rubric to the maximum score of 16. A student who received the maximum score on each of the four facets of the rubric (e.g. background knowledge of earthquakes score = 1– 4, time period score = 1–4, San Francisco score = 1–4, and historical event score = 1–4) would then have a Background Knowledge ratio score of student score/ possible score 16. To illustrate the process, a level one response was a statement of incorrect response, general rewording of the question, or no response. A level two response was a statement that demonstrated partial knowledge of the background area. A level three response was a statement that indicated general correct knowledge of the background areas. A level four response on any of the background facets indicates specific and correct knowledge of the particular aspect of background knowledge. Background knowledge responses were perhaps the most basic to analyze.

The same type of formula was used for each variable; however, the processing and skill application were a bit more complex. For example, the Image Skills Variable assessed level of observation linked to artifact, detail of observations, and connection of observations to historical event, and includes student performance on both pictorial documents. As with the other skills, the student's ability to observe, interpret, and record thoughts were all necessary for a successful response. For example, the first image analysis score was based on the level of observation linked to presented artifact. A level one score suggested that the student wrote incorrect responses or failed to respond. A level two score was given when student responses were concrete, heavily anchored on the questions asked, and if there was one response per question. A level three score was given for concrete description of image and any evidence of interaction (e.g., mood, emotion). Finally, a level four response was given if there was strong evidence of interpretation (e.g., connections among objects in photos, strong or several interpretations about emotions or mood). The Written Skills Variable assessed the use of information from the documents and understanding of author bias, and included student performance on both written documents. The assessment structure paralleled that used with the image skills variable.

The Background Use Variable measured integration of prior knowledge in response; that is, this variable measured the use of background knowledge to respond to analysis questions across all documents, both written and image. To illustrate this scoring system, a level one response would have included only responses to the image or written document and failed to integrate any background knowledge about San Francisco, 1906, or the earthquake. A level two response included a little (i.e., one integration), a level three showed some (i.e., two to three integrations), and a level four showed strong integration (i.e., four to six integrations). Similarly, the Historical Applications Variable measured evidence of historical understanding in the response, across each type of document. Within the parameters of this variable, responses were assessed for evidence of an understanding of history as the process of constructing, reconstructing, and interpreting past events and that at

 

each processing of the event, the photographer, journalist, historian, and student each add a layer of subjective interpretation (i.e., 1 = none, 2 = little, 3 = some, 4 = strong).

The Total Document Skills Composite was an aggregate variable of the student's total performance on each document in addition to his or her total performance on the multiple documents set. The multiple document rubric set included scores in each of the following areas: (a) integration of documents, (b) understanding of multiple points of view, (c) negotiation of multiple documents to find "truth," (d) authors' agenda and critical review of document bias, and (e) evidence of historical understanding. Integration of document score was higher the better able the student was to integrate documents in his or her response. The understanding of multiple points of view score increases as the student responses demonstrated an understanding that documents represented potentially different points of view. To receive a high score on the negotiation of multiple documents score, the students was required to demonstrate an understanding of author and historical context influence on document information. Finally, student responses were assessed for evidence of a critical review of document bias.

***Statistical treatment.*** The researchers analyzed data in several ways. First, frequencies, means, and standard deviations were calculated for items and variables. Then, items and constructs were correlated and correlations were compared. A stepwise multiple regression/correlation analysis was conducted. In this analysis, an available list of potential explanatory variables was searched repeatedly for variables that could be included in the model. The best explanatory variable was used first, then the second best, and so on. Finally, an Analysis of Variance (ANOVA) was used to compare fifth and seventh graders on the key constructs.

***Analysis of qualitative data.*** Field notes from the researcher working in each classroom were recorded during the data collection in order to provide greater perspective to empirical data. These field notes were analyzed for themes that served to substantiate or complement the statistical results.

## Results

Overall, 70 students completed the multi-level document analysis procedure. Of those, 25% ($n$ = 18) were in the fifth grade and 75% ($n$ = 52) were in the seventh grade. In general, both the fifth and seventh grade students demonstrated basic-level processing of historical documents (see Table 1). In each case described below, students' highest achievable score was 1.0, and the highest achievable average rubric score (ars) of 4.0.

On the Background Knowledge Tool (BG), the fifth grade students demonstrated a mean of .34, and a standard deviation of .10. Seventh grade students showed a mean of .43 (ars = 1.36), standard deviation of .19 (ars = 1.72). In reading student responses to the background knowledge worksheet, it was apparent that many of the students had little prior knowledge that could support them during the analysis of the documents. Their background knowledge was strong in the area of earthquakes as evidenced by responses like the following illustrative response:

> Earthquakes are the result of tectonic plates moving under the earth's surface—often have loud noises or moving of the earth when are in action—they are rated on the Richter scale. In the oceans, they can create tsunamis.

But, their background knowledge about the time period (1906) and the San Francisco earthquake were much more limited as evidenced by the large number of students who did not respond to these questions at all. However, even their misconceptions were evident as illustrated in the following responses that received the lowest rating on the rubric when asked what they knew about the time period:

> There was a gold rush.
> It was before Christopher Columbus.
> It was just after WWI.

 

When asked what they might know about the San Francisco Earthquake of 1906, the following responses illustrate their specific background knowledge that received the lowest rating on the rubric:

> It was in 1906, in San Francisco—lots of people died.
> It was an earthquake in San Francisco, California.

The researchers expected these responses about the San Francisco earthquake of 1906. The researchers knew that the students had not studied this event and had not anticipated a great deal of background knowledge. The tool provided the researchers with an opportunity to see how the primary source documents about the San Francisco earthquake of 1906 might aid in the students' knowledge about the historical event.

In the area measured by the construct Image Skills (IS), the fifth and seventh grade students manifested means of .41 (ars = 1.64) and .51 (ars = 2.04) and standard deviations of .11 and .11 respectively. For this particular variable, seventh grade students surpassed their fifth grade counterparts in level of detail in response and connection of observations linked to artifact and historical event. During the analysis of the images, the researcher noted that "the fifth graders were disgusted that the photos were not clearer and better—they had little concept of the age of the photo or the equipment that took it." Seventh grade observations were more concrete and anchored to the artifact with higher levels of accuracy than fifth graders. As evidenced by the data, neither fifth nor seventh grade students' averaged scores beyond the mid-range on the rubric.

Written Skills (WS) were similar with means of .44 (SD = .12; ars = 1.76) and .50 (SD = .09; ars = 2.0) for the fifth and seventh graders. Understanding author bias is a complex process and students in this study demonstrated difficulty with using information in the document to consider how the author's bias may influence their depiction of the earthquake. Furthermore, the researcher noted in observations of the analysis that "There was little recognition on the part of the fifth graders that the excerpt written by Jack London was not part of a book or story, but his actual observations of the scenes." In this case, students believed what they read was true and indicated little concern for the author's perspective and its influence.

Background Use (BU) was found to be at a mean of .34 (SD = .08; ars = 1.36) for fifth graders and at a mean of .40 (SD = .08; ars = 1.6) for seventh graders. In reviewing students' responses to the document analysis worksheets, researchers evaluated their ability to apply prior knowledge to the artifacts in responding to the analysis question. Students were asked to explain why a photo might have been taken or a newspaper article written; when the artifact may have been created, who created the artifact, and what problems are illustrated in the artifact. In many cases, the low level of background knowledge indicated by findings described above became more apparent as demonstrating an inability to make the connection with basic knowledge to more complex understandings about the San Francisco earthquake of 1906. Lack of knowledge about the time period inhibited students from moving beyond basic observations of what they saw to more complex connections to people's experiences while living through the earthquake.

Historical Applications (HA) were similar at a mean of .33 (SD = .07; ars = 1.34) for fifth graders and a mean of .36 (SD = .06; ars = 1.44) for seventh graders. These fifth and seventh graders demonstrated little historical understanding about the San Francisco earthquake. In many cases, students left responses blank or wrote simplified responses. Finally, the Total Document Skills Composite (TL) had a mean score of 1.85 (SD = .35; ars = 1.23) for fifth graders and a mean of 2.22 (SD = .34; ars = 1.48) for seventh graders.

Table 1
*Fifth and Seventh Grade Means, Standard Deviations, and Ranges on Key Variables*

| Var. | Grade | N | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|---|---|
| BG | 5th | 18 | .34 | .10 | .25 | .63 |
| | 7th | 52 | .43 | .10 | .25 | .69 |
| | Total | 70 | .41 | .11 | .25 | .69 |
| IS | 5th | 18 | .41 | .11 | .25 | .60 |
| | 7th | 52 | .51 | .11 | .28 | .81 |
| | Total | 70 | .48 | .12 | .25 | .81 |
| WS | 5th | 18 | .44 | .12 | .25 | .65 |
| | 7th | 52 | .50 | .09 | .35 | .73 |
| | Total | 70 | .48 | .10 | .25 | .73 |
| BU | 5th | 18 | .34 | .08 | .25 | .48 |
| | 7th | 52 | .40 | .08 | .27 | .63 |
| | Total | 70 | .39 | .08 | .25 | .63 |
| HA | 5th | 18 | .33 | .07 | .25 | .48 |
| | 7th | 52 | .36 | .06 | .27 | .58 |
| | Total | 70 | .36 | .07 | .25 | .58 |
| TL | 5th | 18 | 1.85 | .35 | 1.25 | 2.38 |
| | 7th | 52 | 2.22 | .34 | 1.60 | 3.13 |
| | Total | 70 | 2.12 | .38 | 1.25 | 3.13 |

BG: Background Knowledge IS: Image Skills WS: Written Skills
BU: Background Use HA: Historical Applications TL: Total Document Skills Composite

***Research question one.*** What appear to be the essential skills involved in document analysis? According to correlation findings, Background Knowledge, Image Skills, Written Skills, Background Use, and Historical Application are significantly correlated with each other as well as with the Total Document Skills Composite (see Table 2). In addition, the basic document skills (e.g., knowledge level comprehension skills) for images and written documents appear to be quantitatively different from the more complex interpretive skills (Background Use and Historical Applications). These construct differences are supported by the strong and significant correlation among the document skills items, and the less strong and, more often insignificant correlation with the use and application items. This suggests that these items are measuring unique constructs—basic skills versus complex skills (see Table 3).

Table 2
*Pearson Correlation among Background Knowledge, Document Related Subskills, and Total Score Performance*

| Scale | BG | IS | WS | BU | HA | TL |
|---|---|---|---|---|---|---|
| BG | 1.00 | .51 ** | .44 ** | .40 ** | .32 ** | .57 ** |
| IS | | 1.00 | .56 ** | .42 ** | .35 ** | .81 ** |
| WS | | | 1.00 | .58 ** | .51 ** | .83 ** |
| BU | | | | 1.00 | .78 ** | .76 ** |
| HA | | | | | 1.00 | .70 ** |
| TL | | | | | | 1.00 |

** Correlation is significant at the 0.01 level (2-tailed).

BG: Background Knowledge IS: Image Skills WS: Written Skills
BU: Background Use HA: Historical Applications TL: Total Document Skills Composite

Table 3
*Sample Subskill Item Pearson Correlations (2-tailed) from Image One*

| | Artifact Links (Image Skill) | Detail Quality (Image Skill) | Image to Event (Image Skill) | Background Use | Historical Applications |
|---|---|---|---|---|---|
| Artifact Links (Image Skill) | 1.00 | .69** | .82** | .28** | .24* |
| Detail Quality (Image Skill) | | 1.00 | .76** | .40** | .26* |
| Image to Event (Image Skill) | | | 1.00 | .21 | .19 |
| Background Use | | | | 1.00 | .64** |
| Historical Applications | | | | | 1.00 |

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

***Research question two.*** What are the skills that best predict successful document-based question response outcomes? According to the findings indicated in Table 4, all of the variables entered in the stepwise regression analysis played a significant role ($p < .001$) in the prediction of the total document skills composite. The construct Written Skills variable, which is composed of how a student used information from the document and his/her understanding of an author's bias was the best predictor of the Total Composite, accounting for nearly all of variance (.98). However, the Image Skills variable, which includes the student's level of observation as it is linked to artifact, detail of observations, and connection of observations to historical event demonstrated a small but significant contribution to the prediction of the total composite. In addition,

the Historical Applications variable demonstrating evidence of historical understanding in the response contributed to the prediction of the total skill composite, accounting for variance beyond what was explained by the previously entered variables. Finally, the Background Use variable that measured a student's integration of prior knowledge in a response, while a significant predictor, had the least predictive value.

Table 4
*Stepwise Regression Analysis: The Prediction of a Total Document Skill Composite*

| Model | R | R Square(a) | Adjusted R Square | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .993(b) | .987 | .986 | .987 | 5092.659 | 1 | 69 | .000 |
| 2 | .997(c) | .995 | .995 | .008 | 103.388 | 1 | 68 | .000 |
| 3 | .999(d) | .998 | .998 | .004 | 145.816 | 1 | 67 | .000 |
| 4 | .999(e) | .999 | .999 | .000 | 26.406 | 1 | 66 | .000 |

a For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This cannot be compared to R Square for models, which include an intercept.
b Predictors: WS
c Predictors: WS, IS
d Predictors: WS, IS, HA
e Predictors: WS, IS, HA, BU

BG: Background Knowledge IS: Image Skills WS: Written Skills
BU: Background Use HA: Historical Applications TL: Total Document Skills Composite

***Research question three.*** Are there significant differences between fifth and seventh grade students in these skills? Findings of the ANOVA that compared the means of the fifth and seventh grade students on each of the key variables (See Table 5) indicated significant difference on nearly all constructs. Seventh grade students were significantly stronger than fifth grade students ($p < .05$) on the following variables: Background Knowledge, Image Skills, Background Use, and Total Document Skills Composite. The difference between the two groups on the variable Written Skills was approaching significance ($p = .053$). Interestingly, in the area of Historical Applications, there were not statistically significant differences between the fifth and seventh graders ($p = .098$), which indicated that neither group was able to use the documents to achieve greater historical understanding. Observations by the researcher during the document analysis indicated that the fifth graders experienced much more frustration and they seemed unwilling to try when faced with challenging questions. The fifth graders "had little understanding of the term analyze." In addition, the seventh graders appeared to "just want to get it done," as observed by the researcher.

 

Table 5
*Analysis of Variance: Document Subskills and Total Skills Scores (Fifth and Seventh Graders)*

| | | Sum of Squares | df | Mean Square | F | Significance |
|---|---|---|---|---|---|---|
| BG | Between Groups | .115 | 1 | .115 | 10.915 | .002* |
| | Within Groups | .717 | 68 | .011 | | |
| | Total | .832 | 69 | | | |
| IS | Between Groups | .155 | 1 | .155 | 12.640 | .001* |
| | Within Groups | .833 | 68 | .012 | | |
| | Total | .987 | 69 | | | |
| WS | Between Groups | .039 | 1 | .039 | 3.875 | .053(*) |
| | Within Groups | .683 | 68 | .010 | | |
| | Total | .722 | 69 | | | |
| BU | Between Groups | .043 | 1 | .043 | 7.133 | .009* |
| | Within Groups | .407 | 68 | .006 | | |
| | Total | .450 | 69 | | | |
| HA | Between Groups | .012 | 1 | .012 | 2.807 | .098 |
| | Within Groups | .286 | 68 | .004 | | |
| | Total | .297 | 69 | | | |
| TL | Between Groups | 1.757 | 1 | 1.757 | 15.022 | .000** |
| | Within Groups | 7.954 | 68 | .117 | | |
| | Total | 9.711 | 69 | | | |

(*) approaching, * P < .05, ** $p < .01$

BG: Background Knowledge IS: Image Skills WS: Written Skills
BU: Background Use HA: Historical Applications TL: Total Document Skills Composite

## Discussion

Data from this study indicate a number of important findings for teachers and teacher educators to consider, along with the practical suggestions that flow from the findings. In addition, it is important to frame the findings of this study within the context of current research so that educators can understand how the findings of this study compare to the existing research base.

First, our findings suggest that background knowledge, document analysis skills for both written and images, the ability to integrate background knowledge, and historical thinking all contribute to the successful use of documents. The findings suggest that these skills collectively play an important role in successful document-based analysis and that teachers should pay careful attention to each one. For this sample of middle school students, written-document analysis skills were the best predictor of their Total Document Skills Composite

 

score. When students are able to extract key information from the documents, they are better able to use this information in their analysis. Students are more effective in their analysis when they are able to consider the role of the author's bias in determining the validity of the document within the context of a group of documents. These findings are not surprising considering the findings of Stahl et al. (1996) and Massich and Munoz (1996), which have drawn attention to the role of language arts skills in primary source analysis. It is critical then for middle school teachers to understand the important role of developing language arts skills in supporting the analysis of primary source documents. Comprehending primary sources and extracting key information plays a critical role in document analysis. Students must have multiple experiences analyzing documents to assess an author's point of view and how that should be considered. Developmentally, this is a challenging skill for middle school students and needs to be adequately developed. The curriculum should be mapped to integrate these subject areas so that the skill development is supported across content and not just in the social studies classroom.

However, image analysis skills, historical understanding, and background knowledge integration all played a significant role in predicting a student's Total Document Skills Composite score. These constructs all appear to play an essential role in a student's ability to work with primary source documents. Image analysis skills include those in which students are able to carefully examine an image for details and connect that to the historical event and/or time period being studied. In this way, background knowledge integration becomes critical so that students can connect prior knowledge with new knowledge extracted from the document. Put in the context of a student's historical understanding, these skills work interactively to aid in primary source analysis. For practicing teachers, these research findings indicate the importance of (a) activating students' general and specific background knowledge to examine primary sources through direct teaching or research experiences (Kobrin, 1995), (b) developing knowledge level comprehension skills by reinforcing language arts skills, and (c) modeling and scaffolding connection of prior knowledge to primary source documents through teacher-led analysis.

Second, it was clear from both the fifth and seventh grade analysis worksheets that primary source documents alone, as administered in this study, may not facilitate a *deep* understanding of the historical event. This was evident in the average fifth and seventh grade scores clustering around rubric scores of 1 and 2, the lowest end of the scoring scale on the rubric. These scores reflect only basic observations, limited integration, and little if any historical understanding. Researcher observations during the analysis indicated, "All students seem to think there are 'correct' answers that they need to find and were concerned that answers were right." These beliefs reveal that students do not understand the nature of historical understanding and how historians use primary source documents to interpret history. Clearly, this emphasizes the critical role the teacher and peer groups play in supporting document analysis. Similar to the findings of Lee and Ashby (2000) and Foster and Yeager (1999), both the fifth and seventh graders had difficulty managing the conflicting information from different sources, seemingly on the cusp of abstract historical reasoning. Teachers must provide opportunities for students to judge the relevance and accuracy of historical information so they are better able to determine a document's credibility. Simply helping students understand that not all primary sources provide accurate and bias-free knowledge through repeated exposure and critical analysis is critical for this understanding. In addition, teachers can build "judging for relevance" skill by having students examine documents that provide conflicting information or only present part of the story to understand that examining multiple documents will best capture a sense of the historical event and/or time. Experiences with primary source documents need to be supported by teacher modeling and opportunities to collaborate with peers so that many perspectives can be presented and considered (Ferguson, 1986; Kobrin, 1995; Musbach, 2001).

Third, our findings indicated that fifth and seventh graders were different in many areas, and there may be a developmental trajectory of historical thinking. The middle school years, uniquely, may be a critical period for the development of independent, historical thought (Foster & Yeager, 1999; Lee & Ashby, 2000). Significant differences between the two grades included levels and use of background knowledge, image analysis skills, and quite possibly, written document analysis skills. Qualitative review of the data suggested that the fifth graders rarely suggested other primary sources to find out additional information, but seventh graders did at times offer this possibility. Recommendations from Wineburg (1991) and Young and Leinhardt

 

(1998) are supported by our findings, which suggest that teachers need to provide consistent, successful use of primary source documents as a part of learning so students can see their importance in understanding the "real story." In addition, it appeared that the fifth graders considered each primary source to be true, while the seventh graders were less likely to accept the credibility of primary source documents. With the support of developmental research, it is apparent that the middle school years are transformative in students understanding that history is actively produced through stories considering multiple perspectives (Davies, 2004; Lee & Ashby, 2000). Students need to have opportunities to examine authors' motivations and perspectives, and to understand how personal viewpoints can color interpretation. The teacher must demonstrate the necessity of multiple points of view to determine the complete picture of the historical event.

Finally, consistent with the findings of Spoeher and Spoeher (1994) the fifth graders had difficulty analyzing the primary source documents without significant prior preparation by the teacher. Because the focus on this study was on understanding the developmental nature of analysis skills, instruction did not precede the analysis presented to students in this study. Students were given an assessment to evaluate their prior knowledge so that we may better understand its impact on analysis. In addition to development of prior historical and content knowledge, the teacher needs to model the analysis process. At this developmental level, the teacher must provide experience in evaluating the document's relevance, primarily by providing guided questions to scaffold analysis. The teacher must model the process of analysis and precede analysis with accurate background knowledge development. In this way, the background knowledge can support the document analysis instead of providing inaccuracies or misconceptions for knowledge development.

**Importance of study**

Findings from this study add to the limited research base on using primary source documents with students at the middle school level. From these findings, practical suggestions for teachers emerge that will better enable them to use primary source documents to enhance learning in their classrooms. In addition, the results of this pilot study will affect future studies on the use of primary source documents. Since relatively little research has been done in this area below the high school level, these data will provide a baseline for ways to conduct further research. The biggest issue surrounding research across developmental levels is how to capture what students are capable of at different grade levels using different, grade-appropriate primary source documents and analysis tools. Is it possible to identify the differences between the groups using different sets of materials? In addition, what can teachers do to help students below the fifth grade level to analyze primary source documents? In addition to these lines of related research, future studies might want to focus on the ways in which teaching methods can facilitate effective primary source analysis. While our study did not examine this relationship, findings indicate that further implications for classroom practice will result from this line of research.

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# Appendix A

## Background Information Rubric

| Analysis Type | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Level of Background Knowledge**<br><br>**Earthquakes** | General knowledge incorrect<br>No response<br>Rewording of question | Partial correct knowledge demonstrated | General correct knowledge | Specific correct knowledge |
| **Level of Background Knowledge**<br><br>**San Francisco** | General knowledge incorrect<br>No response<br>Rewording of question | Partial correct knowledge demonstrated | General correct knowledge | Specific correct knowledge |
| **Level of Background Knowledge**<br><br>**1906/Time Period** | General knowledge incorrect<br>No response<br>Rewording of question | Partial correct knowledge demonstrated | General correct knowledge | Specific correct knowledge |
| **Level of Background Knowledge**<br><br>**SF Earthquake** | General knowledge incorrect<br>No response<br>Rewording of question | Partial correct knowledge demonstrated | General correct knowledge | Specific correct knowledge |

## Written Document Rubric

| Analysis Type | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Use of Information Provided in a Written Document** | Response appears to be opinion based<br>No information from document integrated<br>Inaccurate information | Shows little use of accurate document-based information | Shows some use of accurate document-based information | Shows strong use of accurate document-based information |
| **Understanding of Author's Perspective (Bias)** | Shows no understanding of author's perspective or agenda | Shows little understanding of author's perspective or agenda (at least 1) | Shows some understanding of author's perspective or agenda (2–3 responses) | Shows strong understanding of author's perspective or agenda (4–6 responses) |

## Image Analysis Rubric

| Analysis | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Level of observation linked to artifact characteristics** | General answers that may be incorrect<br>Strongly anchored on question | Concrete descriptors<br>At least one per question<br>Observation anchored on question | Concrete descriptors and ANY evidence of interpretation (e.g., mood, emotion) | Strong evidence of interpretation (e.g., connections among objects in photos, strong or several interpretations about mood or emotion) |
| **Detail and quantity of observations** | Less than one per question with inaccuracies | Concrete<br>At least one per question with one or less inaccuracies | Multiple accurate observations<br>Detailed observations | Many accurate observations with elaborate detail |
| **Inference of interaction related specifically to the depicted event in question (e.g., San Francisco earthquake)** | Concrete response<br>General<br>No connection to the specific event | Concrete response<br>General<br>Little connection to the specific event | Shows signs of inference or interpretation regarding the specific event | Solid connection with event and strong effort to connect to specific event |

## Multiple Document Analysis Rubric

| Analysis Type | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| **Integration of documents** | No evidence of integration Draws information from background or one document | Draws information from background and two documents | Draws information from background and more than two documents | Draws information from background and all documents |
| **Understanding multiple points of view** | Does not address the issue of multiple points of view | Little inference to the concept of multiple points of view (1–2 responses) | Some inference to the concept of multiple points of view (3–4 responses) | Strong indication of the understanding that documents represent different points of view (5+ responses) |
| **Negotiation of multiple documents to find "truth"** | No evidence of integration or attempt to bring answer from documents | Answers questions with a choppy list of different document findings | Uses an averaging heuristic and a general summation process to answer questions | Evidence of contextual and author's influences in information and response is given within this context |
| **Author's agenda and critical review of document (Bias)** | Shows no evidence of considering author's agenda and critical review of documents' representativeness | Shows little evidence of considering author's agenda and critical review of documents' representativeness | Shows some evidence of considering author's agenda and critical review of documents' representativeness | Shows strong evidence of considering author's agenda and critical review of documents' representativeness |
| **Evidence of historical understanding** | Responses show no evidence of historical understanding | Responses show little evidence of historical understanding (1–2 responses) | Responses show some evidence of historical understanding (3–4 responses) | Responses show strong evidence of historical understanding (5+ responses) |