Students' Analysis of Multiple Sources for Agreements and Disagreements

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Abstract: Students analyzed the similarities (agreements) and differences (disagreements) between a set of two sources regarding why the authors thought Chicago had become a big city. The data we discuss provide descriptive information on three aspects of students' responses: (1) the response strategies they used, (2) how they would characterize agreement and disagreement across two sources, and (3) the rhetorical form of their written responses. Students' responses for Agree were more consistent than those to Disagree and, as expected, were related to the specific sources they compared.

Introduction & Theoretical Background

Several trends indicate the need to better understand how people make sense of information that occurs in multiple sources. The demands of the global knowledge society in which we live coupled with the abundance of information available in digital media imply that successful functioning on a personal as well as professional level involves being able to analyze and synthesize across sources (Goldman, 2004; Goldman et al., 2007). Likewise, the increased emphasis on including developmentally appropriate forms of disciplinary practices in formal educational contexts leads to greater emphasis on understanding how students think *across* sources of information (e.g, National Research Council, 2005). There is a body of research on the multiple source comprehension skills of adults (e.g., Perfetti, Britt, & Georgi, 1995), but far less is known about the multiple source comprehension skills of children. The research presented takes an initial step into understanding multiple source comprehension and its development by exploring one component of multiple source comprehension – analysis and synthesis – in the domain of history at the middle school level. We asked students to compare pairs of documents, a task that involves analysis of content within and across documents. This descriptive study is part of a larger project that is developing and researching an evidence-centered-design assessment system (Mislevy, Steinberg, & Almond, 2003) for multiple source comprehension in science as well as history (Goldman et al., 2007).

Multiple Source Comprehension

Though few in number, existing studies of adolescents' comprehension of multiple sources indicate that competency in this area is fledgling at best for youngsters 10 to 15 years of age. In one study, Golder and Rouet (2000, reported in Rouet, 2006) examined the difference between 6th and 8th graders' understanding of texts that provided conflicting accounts of a controversial event. Students' descriptions of this event indicated that sixth graders had a particularly difficult time with this task: Only 17% of the students mentioned either both sides of the argument or the parties holding the conflicting points of view in their response. Sixth graders either provided only one argument (33%) or did not provide a response at all (33%). In contrast, 56.7% of 8th grade students provided both sides of the argument. These results suggest developmental differences in multiple source comprehension skills between students at the 6th and 8th grade levels, and are consistent with work by Golder and Coirier (1994), that showed that adolescents have difficulty using counterarguments. However, we do not have information on the learning experiences that might contribute to these differences between the 6th and 8th graders' performances. Generally, students in the United States have limited opportunities to engage with multiple sources.

There have been several studies that have *created* opportunities for 10 to 15 year olds to engage with multiple sources that relate historical events (e.g., Goldman, 2004; Goldman & Bloom, 2004; Bain, 2005; Lee, 2005; Levstick & Barton, 1997; VanSledright, 2002b, 2004). This research is informative with respect to adolescents' orientations to sense making when working with the different kinds of sources with which historians deal. In one study (Wolfe & Goldman, 2005), 6th graders read two accounts of the Fall of Rome that were attributed to two historians. They analyzed the similarities and differences in the accounts, and then were asked to provide their own explanation for why Rome fell. The results indicated that those students who generated causal self-explanations of the second text as they read—using prior knowledge, information from earlier points in the text, and information provided in the first text—provided more complex accounts in their own explanations. This work provides support for the idea that adolescents are capable of processing and reasoning about the relationship of information across multiple sources and demonstrates that having students engage in multiple source comprehension may foster deeper understanding of the historical event. Other

investigators have created learning environments for fifth graders (10 year olds) up through 15 year olds in which the techniques of historical investigation are scaffolded through templates that ask students to indicate the type of source, the author, possible biases of the author, the main claim of the source, and the evidence for the claim (VanSledright, 2002a; Lee, 2005; Levstick & Barton, 1997). These templates act as scaffolds in the context of whole group and small group instruction regarding the reading and interpretation of documents of different types and considerations of sourcing.

The Present Investigation

The present investigation seeks to gain a better understanding of how 10 to 12 year-old children comprehend multiple sources of information. The evidence-centered-design approach we are following requires: the detailed specification of the knowledge and skills that constitute the phenomenon in question; what performances would provide evidence of it; and what tasks would elicit such performances. As we have specified it, components of multiple source comprehension include the analysis and synthesis of more than one text, and the comparison of at least two texts. In a study of college students, Wiley and Voss (1999) found that a two-text presentation format supported greater sense making than presenting the same information as one long text. The two-text format may be viewed as a form of contrasting cases, the presentation of which has been shown to help college students generate the type of relational thinking that enables them to understand content information at a deeper level (Schwartz & Bransford, 1998). Wolfe and Goldman's (2005) study discussed above is one of the only we know of that has explicitly asked 11 and 12 years olds to decide if two accounts of an event are in agreement or not. In the present study we wanted to investigate the comparison process for two source documents, each reflecting different kinds of sources one might encounter in doing historical inquiry.

We investigated these issues in the context of a history inquiry question that we had investigated previously (Goldman et al., 2007): "Why did Chicago become a big city?" The sources developed for that work included primary sources (e.g., a personal letter, a newspaper editorial from the early 1900s) and secondary sources (e.g., a text book passage on the growth of railroads, information from a website on immigration to Chicago over the period from 1830 to 1970). We selected four sources for use in the present study and presented students with a pair of them. Students were asked to analyze the similarities and differences in why the authors of the sources thought Chicago had become a big city. In the present paper we provide descriptive information with respect to three aspects of students' approaches to this task. In particular, we were interested in (1) the response strategies they used, (2) how they would characterize agreement and disagreement across two sources, and (3) the rhetorical form of their written responses. For each aspect, we examined the impact of the specific source pairing.

Method
Participants

Participants were 66 5th and 6th grade students (ranging between the ages of 10 and 12 years), all of whom attended one of three schools in a large, urban, public school system in the Midwest USA. The study was conducted as part of their normal social studies instruction in their intact classrooms.

Task Materials and Procedure

Each student received a pair of sources. The first source in the pair was an anchor text, dated 1975, that described immigration to Chicago from 1830-1970. It was attributed to a historian and stated that (1) Europeans, Mexicans, and African Americans came to Chicago seeking jobs, good pay, and steady work, and (2) immigrants sought to improve their economic and living conditions in Chicago. Three different pairs of sources were constructed by following the anchor text with one of three sources. Approximately one-third of the students received each text set.

Each set provided different opportunities for students to notice similarities and differences between the two sources.

Set A Pairing

The second source in Set A was a personal letter dated 1918 from an African-American woman living in Macon, Georgia to a church in Chicago. In the letter, she says why she wants to leave Georgia (unfair treatment by whites, difficulty finding equal-paying jobs) and asked for assistance in finding a job in Chicago. In this pairing of texts the details of the primary source (Source 2) corroborate some of claims made in the anchor text.

Set B Pairing

The second source in Set B was an account by a railroad industry expert, dated 2000, of the role of the railroad industry in the growth of Chicago. It opened with reasons that investors found Chicago attractive as a

railroad hub. The account mentions large growth in Chicago's population following the opening of the railroad system. Overlap between the anchor source and the railroad source is indirect, requiring inferences about jobs that railroads offer or transportation enabling people to easily get to Chicago.

Set C Pairing

The second source in Set C was an editorial dated 1925 that advocated the Chicago stockyards as the best place for immigrants to work. The author, Michael Armour of Armour Meats describes how working in the stockyards benefits immigrants and their families because the pay is fair, regular, and all members of the family could be employed. Like the Set A pairing, the editorial in Set C corroborates information in the anchor text.

Eliciting Comparisons across Sources

Students were instructed to read each text, and then using the two texts, they were to respond to two written prompts. Specifically, students were told to "read about what two authors think about why Chicago became a big city. They agree on some things and disagree on others." We used the terms agree and disagree as age-appropriate "stand ins" for the corroboration process that historians engage in when creating accounts of historical events (e.g., Wineburg, 1994). Given our purpose – a descriptive exploratory study of how 10 – 12 year olds' compare and contrast two sources – we needed prompts that would focus students on similarities and differences in content. In previous work, Wolfe and Goldman (2005) found that terms such as "alike and not alike" and "similar and dissimilar" seemed to focus students on physical properties of the actual texts themselves. The "agree" and "disagree" prompts seemed to be a reasonable approach to eliciting content comparisons.

Students wrote their answers to the first prompt and then to the second. Presentation of the prompts was counterbalanced across subjects, with approximately 50% receiving the "agree" prompt first and 50% the "disagree" prompt within each set. The pairs of sources were present throughout the task, and students were told to use them in writing their responses. Students had 45 minutes to complete the task. On average, students completed the task in 35 minutes.

Data Analyses and Findings

The goal of the data analyses was to characterize students' written responses to the agree and to the disagree prompts with respect to three coding schemes corresponding to our main questions: (1) the response strategies students adopted for comparing the two texts, (2) the kinds of comparisons they constructed for agree as compared to disagree, as well as the impact of the specific text set on these responses, and (3) the rhetorical form of the written responses. Each coding scheme was developed using the method of constant comparison and iterating until two coders agreed on a final set of coding categories. Then the two coders independently categorized each participant's written response to the two prompts. All student responses were scored by each coder. Agreements ranged from 74% to 93% across the three coding schemes. Disagreements among coders were resolved in discussion. We describe the coding scheme and the results of applying it for each of the three questions.

Students' Response Strategies

The coding scheme for response strategy provided a general indication of the overall response to the prompt. It differentiated among responses that did indeed reflect *comparison* of the two sources as compared to *summaries* of one or both of the texts and determined whether the response matched what the prompt asked for, i.e., students included agreements for the agree prompt and disagreements for the disagree prompt.

The dominant response strategy was *Comparison*: 71% of the students responded to both of the prompts with points of agreement between the two sources for the agree prompt or disagreements between them for the disagree prompt. An additional 12% of the students engaged in a *Summary* strategy and provided summaries of the information contained within each source. The remaining students' responses reflected a variety of other approaches to the task but none were exhibited by more than 2 or 3 students. This *Other* category included: supplying mixed points of agreement and disagreement in a response, discussing their own opinions of agreement or disagreement in reaction to the source texts, describing only points of agreement for the Disagree Response, and listing only negative events (the "bad" things that happened) for the Disagree Response. There were minimal differences between the sets of sources regarding the percentages of students demonstrating Comparison responses for both the agree and disagree prompts: Set A: 68%; Set B: 65%; and Set C: 81%.

We also examined how many comparisons students stated for agree and for disagree prompts. A two variable (agree or disagree prompt; set A, B or C) ANOVA indicated main effects of prompt and of set, with no interaction. Students made more comparisons to the agree prompt (M = 2.61) than to the disagree (M = 1.53), $F(1,63) = 16.7$, p, < .01. The pairs of sources that included the personal letter (A) or the stockyards editorial (C) produced more comparisons (M = 2.32 and M = 2.48) than the pair that included the railroad hub source (B) (M

= 1.41). The absence of an interaction indicates that these trends held for both the agree and the disagree prompts.

We interpret these results as indicating that the agree and disagree prompts evoked a comparative process for the majority of students and that agreements were easier to generate than disagreements. We expected that points of disagreement would be more difficult for students to identify because there were no explicit disagreements between the sources in any of the pairings. With respect to the source pairings, the two in which the sources had explicit content overlap yielded more points of comparison than the pairing in which there was less obvious content overlap. The characteristics of the actual comparisons indicate the content and aspects of the sources that were compared and the rhetorical form in which the comparisons were made. We describe the two prompts separately since for both content and rhetorical form the response patterns were different.

Content of Students' Comparisons: Agree Prompt

The responses of the 49 (76%) students who provided comparisons to the agree prompt were coded as *Corroborations* or *Inferred Corroborations* of information across the two sources. (Note that an individual student could receive credit for each of these since students made multiple comparisons.) Ninety-six percent of the students who made agree comparisons provided *Corroborations*, and 67% percent provided *Inferred Corroborations*. Within the *Inferred Corroboration* category were two sub-categories of responses: *Plausible* and *Implausible*. *Plausible Inferred Corroborations* refer to student responses that appeared to make logical inferences based on the content of the two sources. *Implausible Inferred Corroborations* refer to those responses for which student responses did not exhibit relevant ties about or between the two sources. Of those Agree Responses that contained *Inferred Corroborations*, 82% exhibited comparisons that were *Plausible*, while 39% exhibited comparisons that were *Implausible*, a statistically significant difference (Z test for differences in proportions = 4.12, p < .01). Table 1 summarizes the content characteristics of the responses to the agree prompt.

Table 1: Comparison Characterizations for Agree and Disagree Responses.[a]

Response Type	Comparison Category	Responses Containing Comparison
Agree	Corroboration	96%
	Inferred Corroboration	67%
	- Plausible	82% of responses containing Inferred Corroboration
	- Implausible	39%
Disagree	Conflicting Information	4%
	Part-Whole	18%
	Sourcing	8%
	Different-But-Neutral	78%
	- Theme/Main Idea	45% of responses containing Different-But-Neutral
	- Other	63%

[a]A student's response could be credited with multiple forms of comparison so percentages add to more than 100%.

The three sets of pairings behaved similarly for Corroborations: For set A, 100% of the students who made comparisons provided corroboration; for B, 93% and for C, 94%. There was some variation across sets with respect to *Inferred Corroboration*. With the railroad text (Set B), a lower proportion of students responded with *Inferred Corroborations* (53%) compared to 82% of students who did so for Set A and 65% of students who did so for Set C. Also notable is the difference in the proportion of *Plausible* versus *Implausible Inferred Corroborations* across sets. Data from Set B reveal equal proportions of *Plausible* and *Implausible* instances of *Inferred Corroboration*, whereas these proportions for both Sets A and C display proportionately higher amounts of *Plausible* versus *Implausible Inferred Corroborations* (86% to 36% for Set A; 100% to 36% for Set C). Not only did students using Set B provide fewer instances of *Inferred Corroboration* in their responses, but those who did provided a higher proportion of comparisons for which their inferences were *Implausible*.

Inferred Corroborations are of particular interest for multiple source comprehension because they suggest that students constructed new understandings about the growth of Chicago, at least in some cases. That is, it appeared that the analytic comparison of the two sources created the occasion for an inference that likely would not have been made if students had only read one of the sources or had not been explicitly asked to compare them. For example, a student responding to the Set A sources provided the following comparison: "they agree b/c Chicago has immigrants from lots of crontris. And Jullian want to be a immigrant from Macon, Georgia. So Chicago and Jullia want to immigrant and Chicago want to have immigrants. [*sic*]" This response

reflects a synthesis of information across the two sources: The connection was made between the immigrants coming to Chicago to find work (anchor source) and Jillian Adams, the author of the personal letter (second source in Set A). Nowhere in the letter was the word "immigrant" used. The student successfully applied a concept from Source 1 to an instance of it in Source 2. Other responses indicated inferences that generalized across details in the two sources. For example, the comparison statement "They agree on giving money 2 chicago so people can have better jobs [*sic*]" generalizes from information about job opportunities in the anchor text and financial investments in Chicago as a railroad hub (Source 2 in Set B). These data suggest the hypothesis that multiple source comparison may be a vehicle for deepening students' reasoning and depth of understanding (cf. Perfetti, Britt, & Georgi, 1995).

There was a low frequency of inclusion of inaccurate information in the responses to the Agree prompt, 6% of students. These were coded as inferences from the textbase that were distortions of the presented information. No students responded with information that actually disagreed across the sources.

Content of Students' Comparisons: Disagree Prompt

Although there were fewer comparisons generated to the disagree prompt than to the agree prompt, there was a greater variety in the types of comparisons that students made. Trends for the disagree responses were similar across the three sets of sources (see Table 1), with one exception discussed below.

The dominant response category for the disagree prompt was *Different-But-Neutral*: 78% of students had at least one of their disagree comparisons in this category. This category reflects the presence of some information in one source that is simply not in the other. For example, some students' indicated that one source mentioned a topic, such as poor working conditions in the South, but the other source did not say anything about working conditions in the South. The *Different-But-Neutral* category included two sub-categories: *Theme/Main Idea* (e.g., "The one was about railroads; the other was about immigration.") (exhibited by 45% of those who responded in this category), and *Other details* (63% of these responses). Disagree comparisons that pointed out *Conflicting Information* (4%), *Sourcing* (8%), and *Part-Whole* (18%) were far less common than Different-But-Neutral. *Conflicting Information* refers to what students perceived as explicit conflicts of information between the two sources. *Sourcing* refers to comparisons made with respect to details about the two sources (e.g., "Also one is a letter and the other one looks like it got typed on the computer."). *Part-Whole* refers to comparisons that highlighted the set-subset or set-superset relationship of points in each source (e.g., working *in the stockyards* versus working *in Chicago*).

There were interesting differences among the three sets of source pairs in the Different-but-Neutral category. For Set B, 94% of students provided *Different-But-Neutral* responses, whereas these percentages were less in Set A (60%) and Set (C (67%). Furthermore, of the *Different-But-Neutral* responses, for Set B, 69% of comparisons fell under the *Theme/Main Idea* subcategory (immigration versus railroads). Main idea contrasts were less frequent in Set A (33%) and Set C (23%). These data suggest that students were attuned to the differences in the main ideas of the pairs of sources between their sets and did make comparisons on this basis. The pairings in Sets A and C differed more in terms of the generality (anchor text) versus specificity (personal letter and stockyard editorial) of information about living conditions and jobs.

The anticipated greater difficulty of the Disagree as compared to the Agree comparison was also reflected in the frequency with which responses included points on which the sources disagreed at the surface level but at a deeper interpretive level actually agreed. These instances were classified as *Surface Disagreements,* or misreadings/misinterpretations of the source. To illustrate, one student wrote, "The frist one said you get paid don't mater if your black or white. They second author said because you don't get paid if your black you got to be white. [*sic*]" The student noted this as a disagreement based on the surface text stating in the anchor text (first case) that you got paid regardless of color and in the second (personal letter) that the pay you got depended on color. What the student failed to take into account was the perspective of the author of the personal letter as an individual living in the South and experiencing exactly the condition that moving to Chicago held promise of correcting. Across all *Comparison* responses for the disagree prompt, 12% of students provided *Surface Disagreements*, with *Surface Disagreements* for Set A at 20% and for Set C at 18%. Interestingly, there were no instances of *Surface Disagreements* in responses for Set B.

In summary, there was less consistency in the kinds of information students included in response to Disagree prompts as compared to Agree prompts, they made fewer comparisons, and there was some indication of difficulty keeping in mind the perspective of the source when making the disagree comparisons. These patterns must be interpreted with caution because the affordances of the sources were likely more conducive to positive comparisons (agreements) than to negative (disagreements). We also note that these results are consistent with survey research findings that suggest that the processing of positive and negative item stems may reflect two different constructs regarding the way people attend to information (Pilotte & Gable, 1990).

Rhetorical Form of Responses to Agree and Disagree Prompts

For those students whose Response Strategy was *Comparison,* we categorized the rhetorical form. The written responses ranged from simple listings of text details to more elaborate structures that included multiple sentences containing an interleaved statement coupled with statements about each of the two sources that supported the interleaved thought. *Lists* sometimes took the form of bulleted items. *Interleaved* comparisons could have described either agreement or disagreement but in either case reflected analysis and synthesis across sources, as in "They both agree that immigrants needed jobs." Often these *Interleaved* comparisons were accompanied by *Sequential* comparisons describing what each source said that led to the *Interleaved* comparison statement. Both *Interleaved* and *Sequential* statements could also have occurred by themselves as one comparison within a response.

Analyses of the rhetorical structure of students' comparisons indicated differences between the Agree and Disagree responses. As the data in Table 2 show, students were significantly more likely to exhibit *Interleaved* forms for Agree (86%) than for Disagree (35%), $Z = 4.88$, *p < .01*; *Sequential* was significantly more likely for Disagree (67%) than for Agree (6%), $Z = 9.73$, p < .01; and *Lists* occurred about equally often. There were no notable differences across the sets on rhetorical form. These results make sense in that finding similarities among sources calls for identifying or constructing commonality between two things; this is a form of information synthesis. In contrast, noting differences probably requires greater explanation of precisely what the point of disagreement is, a conceptual challenge that is likely to require more elaborate explication, for which it makes good sense to point out how each of two things differ from each other.

Table 2: Percentage of responses containing each type of rhetorical form.[b]

Rhetorical Form	Agree Prompt	Disagree Prompt
Interleaved	86%	35%
Sequential	6%	67%
Interleaved and Sequential in one comparison	16%	10%
Lists only	24%	22%

[b]A student's response could be credited with multiple rhetorical forms so percentages add to more than 100%.

Discussion

Our interest in this study was to provide descriptive information on how students in the age range 10–12 approached the task of comparing two documents that provided information relevant to addressing the inquiry question "Why did Chicago become a big city?". We found that the majority of students were able to engage in comparisons across the source texts but that finding agreements seemed to be easier than finding disagreements. Characteristics of the response strategies, the content of the comparisons that were made, and the rhetorical forms that students used indicated differences associated with whether they were responding to an Agree prompt or a Disagree prompt. Differences in performance associated with the specific pairs of sources students worked with were not unexpected given the differences in content and type of source. We discuss both of these findings in terms of students' interpretation of the task itself, and the degree to which the source pairings supported the identification of agreements and disagreements.

Interpretation of the Task

Interestingly, students interpreted the task of finding where the sources agreed and where they disagreed in ways that reflected a general sense of these terms as opposed to a narrower sense. *Agree*, which can be narrowly defined as "being of the same mind or opinion," appeared to have been understood by students in terms of *sameness* or *similarity* between the two source texts. *Disagree*, when narrowly defined, means "being in conflict, contradicting, opposing." Again, students' responses suggest a more general sense of disagree as the ways in which the two sources were *different* from each other. These broader or more general interpretations may have resulted from the demand characteristics of the task we presented to them. In brief, we asked them to find agreements and disagreements between the sources. Had we asked them *IF* there were any ways the sources agreed or disagreed – providing the explicit possibility of a "no" or "none" response, students might have constrained their interpretation of the prompts. This speculation is consistent with the findings of Garcia-Arista, Campanario, and Otero (1996): high school students used the study contexts, or conditions of the task, to determine the standards and comprehension strategies they would employ.

Interpretations of the Task and Affordances of the Sources

It is also likely that the interpretation of the task emerged through students' efforts to carry out the task with the specific sources we gave them. What it meant to act on the instruction to find agreements and disagreements between these pairs of sources was ambiguous. We had intentionally designed the situation that way and had selected source pairings that would encourage wide interpretations of agree and disagree. Thus, as

we described earlier, two source pairs had overlap in surface text and one had far less. In the face of lack of information in the surface text, some students may have adjusted their definitions of agree or disagree so they could find something to write on the response sheet (cf. Mannes, 1994).

More specifically, we designed the source pairings intentionally to reflect a range of explicitness with respect to points of agreement so that we could detect whether students responded on the basis of surface text characteristics or deeper interpretive understanding. The source pairings each provided a different set of affordances that influenced how well students were able to comprehend across the two texts and how they were able to enact the comparison task. Not surprisingly, students were most successful at constructing comparisons of agreement and disagreement between the anchor text and the stockyard text. This pair contained the most salient connections in that the anchor text described details surrounding the influx of immigrants and migrants to Chicago, including jobs and good working conditions. Both job and working conditions ideas were reiterated in the stockyards source. Thus, both of these sources emphasized information about immigrants, job opportunities, good pay, and the chance to make a decent living in the city of Chicago. Students had the most difficulty finding agreements between the anchor and the railroad sources, as might be expected since the main topics appeared to be unrelated. For example, information about immigrants was not mentioned at all in the railroads source and neither the anchor nor the railroad source mentioned the importance of railroads as transportation from the South to Chicago. The major connection that students might make between these two sources is an implicit one: that perhaps the rise and success of the railroad industry provided many of the job opportunities sought out by immigrants to Chicago. The middle point in terms of content and difficulty with the task was the Set A condition.

The style with which a text is written can also influence students' reasoning about the content information. According to Paxton (1997), high school students processed text more deeply when the content information was presented in "visible" style versus "textbook" style. Visible style pertains to voice and authorship, and can manifest through use of first-person point of view or an expressed commitment about an issue, both of which describe the texts utilized for Sets A and C, respectively. The second source in Set A was the personal letter, for which the content is presented and emotions expressed from a first-person point of view. The second source in Set C was the editorial, and as is often the case with newspaper editorials, the author expressed a strong, committed point of view with respect to his opinion about the Chicago stockyards as an ideal place for immigrants to work. The text on the railroad industry (Set B), on the other hand, is characteristic of "textbook" style content.

Finally, the structure of content information within the texts can affect students' ability to understand and process information across multiple texts as well. Work by Nash, Schumacher, and Carlson (1993) showed that student work was better organized when sources' content information was structured in the same way, with better responses resulting from reading texts with a topical structure as opposed to chronological. In the present set of sources, all but the railroad text were organized topically. As well, topical overlap with the anchor around the growth of Chicago was not mentioned in the railroad text until the second paragraph.

The results from this study demonstrate how the different affordances of each source pairing, coupled with students' interpretations of the task, can affect student work. The proportion of students who were able to execute the task by providing comparisons of agreement and disagreement across two texts was shown to vary for the different task conditions in a manner that aligns with the literature regarding factors that influence how well students are able comprehend and reason with different texts.

Implications

In this study, we explored the multiple source comprehension skills and strategies of young adolescent students within the domain of history. We did so with the goal of learning more about how children are able to handle tasks for which they must analyze and compare information across two sources. Our findings indicated that the majority of students who engaged in the comparison task were able to make comparisons between the information found in two different sources. Not surprisingly, they were more successful finding agreements than disagreements. First, the sources themselves created greater affordances for finding agreements than for finding disagreements. Second, and related to the first point, in the absence of explicit disagreements, students responses indicated a greater variety of patterns to the Disagree prompt. Furthermore, as we had expected, the affordances of the specific pairs of sources affected student performance, with those requiring greater degrees of inference showing different patterns than those where the surface text provided more directly accessible "answers" that satisfied the task demands of providing ways the sources agreed and ways they disagreed.

Multiple source comprehension is a life skill for the digital age that should not be ignored as the world moves forward into the 21st century. Additional research is needed on how to foster students' multiple source comprehension skills in the classroom, as well as how elements of instructional practice, assessment strategies, and the design of learning environments may affect students' interpretations and approach toward a task, which in turn would affect task performance.

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