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Registered report

Writing about historical significance: The effects of a reading-to-write instruction

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ABSTRACT

In a randomized pretest–posttest design, we examined the effects of a reading-to-write instruction on (a) the quality of students' essays and (b) on metaknowledge about reading, reasoning about historical significance, and writing. Results showed that 10th grade students in the reading-to-write condition ($N = 46$) wrote significantly better essays compared to students who received a content-based instruction ($N = 48$). In addition, students in the reading-to-write condition scored significantly higher on metaknowledge about reading historical accounts than students in the content-based condition. Self-reports on learning gains indicated that students in the reading-to-write condition gained deeper understanding of historical knowledge than students in the content-based condition.

1. Introduction

Learners need to be introduced in a community of practice with their own negotiated standards of how to legitimize claims (Lave & Wenger, 1991). Reading and writing processes differ across the disciplines, and students need to learn how to read and write in a particular domain (Goldman et al., 2016; Klein & Boscolo, 2016). In order to become advanced readers and writers in a domain, students should master a wide range of linguistic strategies. Knowledge about formal language is required to understand the abstract language of (academic) texts (Rose & Martin, 2012; Schleppegrell, 2004). This means for history teachers that reading, reasoning, and writing need to be taught in a domain-specific manner. Reasoning about historical significance is an example of domain-specific reasoning and is the focus of this study.

The concept of historical significance answers the question of which events are important enough to study, as it is impossible to study every event of the past. Criteria are used to select important events (Lévesque, 2008). These criteria often focus on the consequences of an event. Due to changing historical questions and historical circumstances, the attribution of significance can change over time. For example, people in the 19th century may have other judgements about events in the 15th century than people in the 20th or 21st century. Consequently, historical significance expresses “a flexible relationship between us and the past” (Seixas & Morton, 2012, pp. 17).

Reading and writing are essential to develop an own claim about the significance of an event. Historians are accustomed to present their interpretation of the past in accounts (secondary sources), which must meet the standards of the historians' community (Chapman, 2011; Seixas, 2016). Consequently, it is important that students learn how to read these accounts in order to learn how to write such accounts; these accounts may focus on different aspects of history, for example, historical causation or significance.

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Researchers in history education often focus on reading or writing instruction with primary sources (e.g., De La Paz, 2005; Wissinger, De La Paz & Jackson, 2020) rather than accounts or secondary sources.

Fitzgerald and Shanahan (2000) argue that reading and writing are intertwined. Empirical research provides evidence for a mutual relationship between reading and writing (Graham & Hebert, 2010; Graham et al., 2018). This suggests that reading and writing rely on the same kind of knowledge—metaknowledge about reading and writing. This metaknowledge contains knowledge of text components (e.g., introduction involving [counter]arguments) and procedural knowledge on how to read or write (e.g., prewriting, identifying the authors' perspective; see Schoonen & de Gloppe, 1996). The use of this procedural knowledge may improve how students select, organize, and use new information (Weinstein & Mayer, 1986). Based on this assumption, an instruction that focuses on reading may contribute to students' writing.

In this study, we aimed to investigate the effects of a reading instruction on the quality of written essays in the context of a writing task about historical significance and how this instruction affected students' metaknowledge about reading and writing in the domain of history. Due to the need for more effective classroom practices in history education (van Drie, Braaksma, & van Boxtel, 2015; Wissinger et al., 2020) and our limited knowledge of reading historical accounts (Cercadillo, Chapman & Lee, 2017; Innes, 2020), reading-to-write instruction might be a promising approach. To our knowledge, reading instruction that focuses on historical accounts in order to write (reading-to-write instruction) has not gained much attention in history education. In an experimental study, 10th grade students were divided into a reading-to-write condition and a content-based condition and were asked to write an essay about the changing assignment of significance since 1800 to Christopher Columbus (1451–1506).

1.1. Theoretical framework

1.1.1. Historical literacy

In order to develop a claim about the past, it is important to read and understand historians' interpretations and to have knowledge of historians' approaches. Historians use diverse methods to construct historical accounts, in which they present and substantiate interpretations (Chapman, 2011; Seixas, 2016). Historians' interpretations are revealed by their historiographical style, expressed by emplotment and language (White, 1973). Language is used to make facts, developments, or historical agents more or less significant, hence, analyzing historians' language might be helpful to understand how historians interpret the past. Historians make events more or less significant by using techniques such as backgrounding (the consequences are "temporal") or foregrounding (the consequences are "important"; Schleppegrell, 2004; Schleppegrell & de Oliveira, 2006). Students might struggle with applying these strategies while reading or writing.

Studies in history education that focus on reading mainly focus on reading primary sources. Wineburg (1991a) proposed three heuristics: sourcing, corroboration, and contextualization. There is evidence that explicitly teaching these heuristics develops students' understanding of primary sources (e.g., Reisman, 2012). Nevertheless, students can read primary sources without understanding that historians are interpreting the past. For that reason, students must learn how to recognize historians' interpretative frames (Freedman, 2015). Research has shown that secondary school students can develop (e.g., by corroborating accounts) basic understanding that historical accounts are influenced by an authors' frame of reference (van Driel et al., 2021; Cercadillo, 2001; Cercadillo et al., 2017; Lee & Shemilt, 2004; Martens, 2015). This requires deep reading of historical accounts, that is, an in-depth analysis of relationships between components of the story and making connections between the authors' social-cultural context and historical judgements in the text, which is identified as an effective reading strategy (Epstein, Peck, Epstein & Peck, 2018; Körber, 2015; Schreiber et al., 2006; Weinstein & Mayer, 1986). For example, Columbus can be interpreted from different frames of reference (e.g., "contribution to the European expansion" or "contribution to inequality"). Wineburg's heuristics for reading primary sources are also relevant to recognize and understand different interpretations in accounts written by historians.

Writing often consists of three main processes: content needs to be retrieved from memory, written down in an organized sequence, and edited in order to ensure that the reader comprehends the text (Hayes, 2012). In history, historians use these general processes to display and interpret evidence in order to convince the reader (Monte-Sano, 2010). In the field of history education, most research on writing historical essays focuses on strategy instruction, often combined with reading instruction about primary sources (e.g., De La Paz, 2005; De la Paz et al., 2017; Wissinger et al., 2020). In these studies, the focus is often on nurturing students' argumentative skills by using an apprenticeship model to teach contextual knowledge, writing strategies, discipline-based argumentative skills, and inquiry of primary (historical) documents. The results of these studies suggest that, after intensive instruction and practicing, students of different age groups and academic abilities improve their persuasive (historical) writing. According to De la Paz et al. (2017), writing complete essays yields better results than writing shorter texts. Although reading historical accounts is addressed in writing research (Monte-Sano, 2008; Wissinger et al., 2020), little research has been conducted on reading historical accounts (Cercadillo et al., 2017; Innes, 2020).

1.2. Metaknowledge about reading, reasoning, and writing

Reading and writing presuppose metaknowledge, that is, knowledge of the product's components (e.g., features of a well-written introduction) and procedures (e.g., prewriting). Metaknowledge is associated with the development of literacy (e.g., Klein & Kirkpatrick, 2010; Schoonen & de Gloppe, 1996; Trapman, van Gelderen, van Steensel, van Schooten & Hulstijn, 2014; Van Gelderen, Schoonen, Stoel, De Gloppe & Hulstijn, 2007). However, it is not yet clear whether reading instruction increases students' metaknowledge of writing (Graham et al., 2018). Yang (2017) suggests that a lack of metaknowledge of the subjective nature of historical accounts prevents students from reading historical documents from a critically informed position. In the field of history education,

however, few studies focus on the acquisition of metaknowledge in the context of historical writing (van Drie et al., 2018) or reading (Gross, 2002).

When developing a claim about historical significance based upon historical accounts, students require metaknowledge regarding reading. This knowledge could focus on procedures (e.g., underline arguments), the relationships between relevant text components (e.g., arguments), the influence of the social-cultural context (e.g., historical context of the author), and how language is used to convince the audience (e.g., underline words like “temporal” and “important”) (Epstein et al., 2018; Körber, 2015; Schleppegrell & de Oliveira, 2006; Schoonen & de Glopper, 1996).

In addition to this metaknowledge about reading, students also need metaknowledge about what historical reasoning entails, which is often connected with metahistorical concepts used to structure historical interpretations (van Drie et al., 2018; Schreiber et al., 2006). Historical significance is an example of such a meta or second-order concept. Recognizing why an historical agent is considered significant requires metaknowledge about the criteria that are used to judge an agent’s significance, the focus of which is often on the lasting effects caused by this agent or the symbolic function of this agent (e.g., Cercadillo, 2001; Hunt, 2000; Lévesque, 2008). Claims about the significance of an historical agent are always influenced by the background of who assigns significance (Cercadillo, 2001; Peck, 2010; Seixas, 1997).

Finally, in order to write an historical essay, students need metaknowledge of writing procedures (e.g., how to describe historical accounts) and text genre (e.g., the importance of counterarguments). Besides that, students must present the historical argument within the historians’ social-cultural context (De La Paz, 2005; Epstein et al., 2018; Monte Sano, 2010).

1.3. Domain-specific reading-to-write instruction

It is assumed that reading and writing intertwine (Fitzgerald & Shanahan, 2000). Consequently, reading instruction may improve the quality of written texts. Former research has shown that reading instruction regarding text structure or specific features of language may improve text quality (Crowhurst, 1990; Jouhar & Rupley, 2021; Levine, 2014). A major contribution to the reading-to-write construct is the meta-analysis of Graham et al., which showed that reading instruction improves writing quality. Teaching “reading comprehension” and “reading and analyzing” showed a medium or small positive effect (Graham et al., 2018). Because Graham et al. focused on primary education and more general research on reading, we do not know the impact of domain-specific reading-to-write instruction in history classrooms in upper secondary education.

The reading apprenticeship approach aims to improve reading accounts (Greenleaf & Valencia, 2017; Schoenbach & Greenleaf, 2009). From a constructivist perspective, students develop their understanding of texts by reading content-orientated texts, engaging in metacognitive discussions, applying reading strategies, and making inferences with background knowledge (Mayer, 1996; Schoenbach, Greenleaf & Murphy, 2012). Biancarosa, Afflerbach and Pearson (2020) stated that reading is a domain-specific skill; subsequently, these general reading approaches should be applied in a domain-specific manner.

Given the promising results of reading-to-write instruction for younger students, we developed a domain-specific reading-to-write instruction that combined the explicit teaching of Wineburg’s heuristics and the reading-apprenticeship model. Past research has demonstrated the potential of explicit teaching in promoting literacy and historical reasoning (e.g., van Drie, Braaksma, & van Boxtel, 2015; Reisman, 2012; Rose & Martin, 2012). It seems important to teach students that historians’ interpretations are influenced by historians’ frame of reference or historical context, which could be clarified by corroborating the accounts and evaluating the authors’ argumentation and language.

1.4. Aim of the study

Reading-to-write instruction might be helpful to develop historical literacy. This study aims to examine the effects of a reading-to-write instruction. Two research questions guided this study:

1. What is the effect of a domain-specific reading-to-write instruction (focusing on historical significance) on the quality of students’ essays?
2. What is the effect of a domain-specific reading-to-write instruction on students’ metaknowledge about reading, reasoning, and writing in the context of a writing task about historical significance?

Writing about historical significance assumes reading and reasoning; therefore, we made a distinction between metaknowledge about reading, metaknowledge regarding reasoning about historical significance, and metaknowledge about writing. We expected that the domain-specific reading-to-write instruction would have a positive effect on the quality of the essays. Due to our focus on reading during the instruction, we also expected that the reading-to-write intervention would have a positive effect on students’ metaknowledge about reading.

2. Method

2.1. Design

To answer the research questions, we used an experimental design with a reading-to-write ($N = 52$) and a control condition ($N = 50$) that focused on historical knowledge (content-based condition). We used a pre-and posttest for metaknowledge (about reading,

reasoning about historical significance, and writing), a posttest (in the form of an essay) to measure the quality of students' writing about historical significance, and a posttest (in the form of a learner report) to measure students' understanding of the interpretative nature of historians' work.

Within each class, students were randomly assigned to one of the four groups, which resembled the normal class size (van Bergen, Paulussen-Hoogbeem, Mack, Rossing & van der Ploeg, 2016). These teaching groups were subsequently randomly assigned to the reading-to-write or to the content-based condition. An overview of the groups is presented in Table 1.

2.2. Participants

A total of 102 10th grade (15–16 years old) students (47% female) out of four classes in upper secondary education participated in this study. Students came from one suburban school in the center of the Netherlands. None of the students were identified with a learning problem and all students spoke Dutch fluently. All students gave their active consent to participate in this study. After excluding incomplete datasets (students who missed two or more lessons, pretest or posttest), our sample contained data from 94 students: reading-to-write condition $N = 46$ (46% female) and content-based condition $N = 48$ (48% female). To prevent a teacher effect, students in both conditions were taught by the same teacher (the first author).

In consultation with two history teachers from the participating school, Columbus was chosen as a topic of the lessons. Just before this lesson unit, the development of European expansion overseas had been taught in the history classroom; the lesson conformed to the curriculum standards. We were charged to choose a topic that related to this era. We choose an historical agent because we expected that students would be able to discuss the significance of an historical agent more easily than the significance of an historical event and because there are different perspectives on the significance of Columbus.

The standards in upper secondary education curriculum compel history teachers to teach the interpretative nature of history, different consequences of events, and change and continuity, all of which are required when reasoning about historical significance (van Boxtel & van Drie, 2018). The concept of historical significance, reading historical accounts, and writing historical arguments do not (explicitly) belong to the targets of the history examination program of higher secondary education (CvTE, 2018).

2.3. Materials and lesson unit

This lesson unit contained one preparatory lesson, in which all students were taught about the concept of historical significance. This lesson was followed by three intervention lessons of 45 min about historical accounts. The focus in the reading-to-write condition was on analyzing historical accounts, whereas the content-based condition focused on substantive knowledge. These lessons aimed to prepare students to write their own essays, in which they would investigate how an historian from the 19th and 20th century interpreted Columbus. In addition, students were asked to develop an historical claim about the significance of Columbus. Following the guidelines of Hoffmann et al. (2014), a general overview of the lessons in both conditions is presented in Table 2.

Students in both conditions read the same materials, spent the same amount of time on the writing task, and received the same preparatory lesson. Participants received two texts, which contained accounts of Washington Irving (1783–1859) and Howard Zinn (1922–2010). A Flesch–Kincaid readability test (Kincaid, Fishburne, Rogers & Chissom, 1975) made clear that both texts were appropriate for this grade (Text 1: Grade 10.7; Text 2: Grade 10). Furthermore, all students received some background information about the 19th and 20th century and biographical information about Columbus. In order to provide students a good example of writing about historical significance, we added a text in which a student assigned significance to a well-known Dutch feminist, Aletta Jacobs (1854–1929).

Reading-to-write condition: According to the reading apprenticeship model, it is important to make thinking processes visible to students (Collins, Brown & Holum, 1991). Reading processes were made visible by (1) explicit teaching and (2) via social interaction. Explicit teaching of reading entailed identifying key elements of accounts (e.g., arguments). Recognizing the authors' perspective was taught by asking questions like (1) what is the message of the author, (2) how is the argumentation (including counterarguments and rebuttals) of the author constructed, and (3) how is the author influenced by the historical context? The text about Aletta Jacobs was used to identify key elements (e.g., arguments, use of criteria for significance) of an account (but without writing instruction). Reading instruction focused on how to identify interpretative language in accounts; for example, students were asked to identify words like “temporal consequences,” which are used to place facts in the background, and “long-term consequences,” which place developments in the foreground. Social interaction, such as peer interaction and whole-class discussion, may provide prompts for reading, correcting misconceptions, and creating deeper understanding of texts (Newell, Beach, Smith & VanDerHeide, 2011; Rose, 2015; Rose & Martin, 2012). When identifying evaluative language, students were asked to work in small groups in order to support each other. During the

Table 1
Distribution of the original classes over both conditions.

Class	Reading-to-write		Content-based	
	Group 1	Group 2	Group 1	Group 2
Class A	6	7	6	6
Class B	5	5	7	6
Class C	7	5	6	5
Class D	8	9	6	8
Total	26	26	25	25

Table 2
Overview of Lesson Unit.

Lesson	Teacher and Learning Activities Reading-to-Write Condition	Teacher and Learning Activities Content-Based Condition
Preparation phase 1.	Foster knowledge of the construct of significance (change over time, assigned with criteria, perspectives). Materials: controversial paintings/sources. Activities: teacher instruction, small group work, whole class discussion.	Foster knowledge of the construct of significance (change over time, assigned with criteria, perspectives) Materials: controversial paintings/sources. Activities: teacher instruction, small group work, whole class discussion.
Intervention phase 2. 3. 4.	Foster knowledge of features of historical accounts, procedural knowledge of reading, and evaluative language Materials: Irving's account, background information Activities: teacher instruction (modeling), small group, and whole class discussion (Re)activate metaknowledge about reading and writing. Students read an historical account and discuss this account in small groups. Materials: Zinn's account, background information Activities: small groups, whole class discussion Discussing the structure of texts, identify key elements (using instruction of the second lesson) in the mentor text by small group and whole-class discussion. Materials: both accounts, background information Activities: teacher instruction, small groups, whole class discussion	Foster historical background knowledge, students prepared, and present a presentation, Materials: all texts Activities: teacher instruction (without instruction regarding perspectives), small groups, and whole class discussion Foster background knowledge, linking background knowledge to a historical account Materials: Irving's account, background information Activities: teacher instruction (without instruction how to read), small group, and whole class discussion Teaches historical background knowledge, linking background knowledge to a historical account by instruction, small group, and whole class discussion. Materials: Zinn's account, background information Activities: teacher instruction (without instruction how to read), small groups, whole class discussion Essay writing
Writing phase (posttest) 5.	Essay writing	Essay writing

first intervention lesson, whole-class discussion was used to control whether students recognized the evaluative language.

Content-based condition: In the content-based condition the focus was on substantive knowledge. In order to develop a claim about the significance of Columbus, students in the content-based condition prepared a presentation about Columbus, in which they explained whether Columbus should be commemorated or not. During the presentation phase, they encountered a contrary interpretation of Columbus. No instruction about historians' perspectives was provided. During this lesson unit, students also received instruction about key events and—like the students in the reading-to-write condition—engaged in small groups in order to discuss the significance of Columbus and in whole-class discussions to compare and discuss the conclusions of the small-group discussions. The text about Aletta Jacobs was presented as an example of an historical account about the significance of an historical actor; however, no attention was paid to how the author used criteria of historical significance or how to read accounts.

2.4. Data and instruments

In order to investigate the effects of our reading-to-write intervention, we asked students to write an historical essay in which they present and support a claim about the significance of Columbus using the different interpretations of the historian Irving and the historian Zinn. Second, we measured students' metaknowledge about reading and writing, focusing on historical significance, and asked students to write a learner report about their learning gains.

Essays: All students were asked during the posttest to write a text (approximately 250 words) in which they discussed how historians' interpretations of Columbus develop over time and to develop a substantiated claim about the historical significance of Columbus in the 21st century. All students wrote their essay on the computer (50 min) and were allowed to use the texts, which contained the perspectives of Irving and Zinn (Appendix A).

Metaknowledge: In order to measure students' metaknowledge about reading, reasoning about historical significance, and writing, students were asked (during the pre- and posttest) to write an email to a friend in which they provide recommendations. In the original task, developed by Schoonen and de Glopper (1996), reading was captured in writing. In our task, we considered reading a main category. The recommendations had to relate to reading historical accounts and writing an historical essay about historians' interpretation about the significance of an historical person in order to fulfill a school task (Appendix B). Students were allowed to work for 15 min on this task.

Learner report: In order to gain more insight into learning outcomes regarding the interpretative nature of history/historical accounts, we added three prompts to the posttest that were intended to explore what students thought they had learned about the interpretative nature of history in the context of reading and writing about historical significance (Van Kesteren, 1989). The prompts were "During the lesson unit on Columbus, I learned (1) about historians' craftsmanship, (2) about historians' way of writing, and (3) how historians read a text." Students were allowed to work 10 min on this task.

2.5. Procedure

The pretest on students' metaknowledge was conducted four weeks before the start of the intervention lessons. Between pretest and the intervention lessons, no explicit attention was paid to reading, reasoning about historical significance, or writing.

All students received a booklet with all assignments and texts. Students wrote their essay one lesson after the last intervention lesson. One week after writing their essays, all students completed the posttest on metaknowledge and filled out a learner report.

2.6. Fidelity of implementation

Fidelity measures help researchers to evaluate how well an intervention is implemented compared to the original design (O'Donnell, 2008). Three methods were applied in both conditions to ensure implementation fidelity: (1) prior to the lesson unit, a detailed lesson plan was developed; (2) after each lesson, a logfile was created by the teacher with a description of the lessons; and (3) all students' booklets were checked to see whether all assignments had been carried out.

A comparison between the lesson plan and the logfile shows that all activities were executed as intended. We noticed some differences between the whole class discussions in each group because students gave different answers (e.g., application of the criteria for significance were discussed in one class, wherein students discussed Columbus' contribution to emerging world trade, and in another class, students discussed the symbolic value of his journey). Students in the reading-to-write and content-based conditions filled out 75% (mean) and 78% (mean) of all assignments, respectively.

2.7. Analysis

Quality of written essays: The written essays were coded with an adapted version of a previously developed coding scheme (van Driel et al., 2021; van Drie et al., 2018). The calculated Cronbach's alpha was 0.719. The main categories of this scheme include Structure, General Writing Aspects, and Reasoning about Historical Significance (Appendix C). Every main category contains several subcategories. The Structure category contains the subcategories Introduction, Main Paragraphs, and Conclusion. The General Writing Aspects category contains two subcategories: Audience-Orientated Writing and Coherence. The Reasoning about Historical Significance category contains the subcategories Addressing Different Perspectives, Using the Historical Context, Use of Criteria for Significance, and the Use of Historical Facts and Concepts.

After a training session, 16% of the essays (equally taken from both conditions) were coded separately by the first and third authors. The calculated Cohen's kappa varied between 0.56 and 0.91. Two categories were considered too low: Historical Contextualization (0.56) and Main Paragraphs (0.67). After the two coders discussed the discrepancies, a second set (16% of all essays) was coded for the Main Paragraphs category—Cohen's kappa was 0.89, which is considered good. Regarding Historical Contextualization, we changed the coding scheme to assess the extent to which Columbus was placed in his historical context. Both coders coded a second set (23% of all essays)—Cohen's kappa was 0.72, which is considered acceptable. All other essays were coded by the first author. A Kolmogorov-Smirnov test showed that the total score fit with the assumption of normality, $D(94) = 0.090, p = .060$. Regarding the sub variables, however, the data do not fit the assumption of normality. To determine the effects of the reading-to-writing instruction, we used an ANOVA for the total score and a MANOVA for all sub variables (Field, 2018).

Metaknowledge: All recommendations in the pre- and posttest were assigned to one of the main five categories: reading, reasoning about historical significance, writing, gathering information, and other. We only report on reading, reasoning about historical significance, and writing, but all categories are shown in Appendix D. After a training session, approximately 18% of all pre- and posttests were coded separately by the first two authors (reading and writing) and a research assistant (reasoning), equally distributed among conditions and groups. The Cohen's kappas were 0.83, 0.77, and 0.90 for reading, reasoning about historical significance, and writing, respectively. These Cohen's kappas are considered acceptable or good (Field, 2018).

Running a Kolmogorov-Smirnov test, we concluded that the data did not fit the assumption of normality, so we decided to use Mann-Whitney tests (Field, 2018). No differences were found between both conditions at the pretest on metaknowledge about reading ($p = .620$), metaknowledge about reasoning about historical significance ($p = .431$), or metaknowledge about writing ($p = .509$). In addition, an ANOVA showed no significant differences between the four participating groups (metaknowledge about reading, $p = .758$; metaknowledge about reasoning about historical significance, $p = .854$; metaknowledge about writing, $p = .274$).

Learner report: We identified students' answers regarding historians' craftsmanship, reading historical accounts, and writing accounts. Dichotomous scoring was used for each prompt, which fits with a domain-specific description or not. A research assistant and the first author separately coded 18% of all reports, equally distributed among all groups. The Cohen's kappa was 0.81, which is considered good (Field, 2018). Differences between the reading-to-write and content-based condition were identified by calculating the percentages that fit the idea of interpretation for each category in both conditions.

3. Results

In this section, we describe the effects of the reading-to-write intervention on the quality of written essays and metaknowledge about reading, reasoning about historical significance, and writing.

Quality of written essays: The scores for the sub variables and the total mean score for the written essays are presented in Table 3. The overall scores revealed that students were able to reason about historical significance to a certain extent (range 1–4 at each subcategory in both conditions). Furthermore, many students in both conditions did not draw a (complete) conclusion (mean score = 1.52) and did

not include counterarguments or rebuttals (mean score = 2.30).

The ANOVA showed that students in the reading-to-write condition (total score, $M = 2.42$, $SD = 0.41$) wrote higher scoring essays compared to students in the content-based condition (total score, $M = 2.02$, $SD = 0.42$). The difference between both groups was significant, $F(1, 92) = 21.610$, $p = .000$, $\eta^2 = 0.19$, but this effect size is considered small (Field, 2018). In line with our expectations, students in the reading-to-write condition wrote significantly better essays compared to students in the content-based condition.

Differences in subcategories were analyzed using a MANOVA. Using Wilks' lambda, we found a significant effect of reading instruction on the quality of written essays, $\Lambda = 0.481$, $(F9, 84) = 10.07$, $p = .00$. Multivariate analysis showed a significant effect of the reading-to-write instruction on Main Paragraphs, $F(1, 92) = 8.209$, $p = .005$, $\eta_p^2 = 0.082$; on Coherence, $F(1, 92) = 9.083$, $p = .003$, $\eta_p^2 = 0.090$; on Addressing Perspectives, $F(1, 92) = 61.867$, $p = .000$, $\eta_p^2 = 0.402$; and on Using Historical Context, $F(1, 91) = 12.25$, $p = .0001$, $\eta_p^2 = 0.12$. Students in the reading-to-write condition scored higher at these aspects. There was a medium effect size for Main Paragraphs, Coherence, and Using Historical Context and a large effect size for Addressing Perspectives (Field, 2018). In addition, we checked whether there were differences between the two teaching groups within each condition, but no significant differences were found.

Because the focus in the reading-to-writing condition was on recognizing perspectives, below we present how students from both conditions described Zinn's account. Student 1 (content-based condition) wrote, "However, this has also a negative side. Slaves were brought to America from Africa and Spanish soldiers enslaved the population." Student 2 (reading-to-write condition) wrote,

In the 20th century, a war against racism rose up [...]. At this time lived Zinn, a historian. He stated that Columbus's cruelty was causing havoc among the Native Americans. [...] Columbus' journey have had positive consequences for the Spanish king. However, these consequences were temporal.

Whereas Student 1 simply used Zinn's account as source of information, Student 2 alluded to Zinn's argument and attempted to comprehend his interpretation within the historical context.

Metaknowledge: The overall scores for all main categories regarding metaknowledge about reading, reasoning about historical significance, writing, and the mean number of correct recommendations are presented in Table 4. In the reading-to-write condition, the mean number of recommendations that students gave significantly increased from the pretest to the posttest, $t(45) = -5.63$, $p = .00$. In the content-based condition, however, the number of recommendations did not increase, $t(47) = -1.177$, $p = .25$.

Regarding recommendations about reading, students in the reading-to-write condition scored significantly higher ($Mdn = 3.00$, $SD = 1.84$) at the posttest compared to students in the content-based condition ($Mdn = 0.00$, $SD = 0.68$), $U = 541.500$, $z = 4.34$, $p = .000$, $r = 0.45$. The effect size is considered medium (Field, 2018). In addition, we checked whether there were differences between the two teaching groups within each condition, but no significant differences were found. These results confirmed our expectations. In addition, we also explored student recommendations about reasoning about historical significance and writing. We found no significant differences (reasoning about historical significance, $p = .702$; writing, $p = .315$).

Learner reports: We explored students' beliefs about the nature of historians' work. As shown in Table 5, students in the reading-to-write condition included more domain-specific elements of history in their learner reports than students in the content-based condition. Students in the reading-to-write condition often mentioned that historians interpret the past and that historical accounts do not recall facts, but they do "analyze facts." For example, differences between historians were explained by their different backgrounds. One student explained, "Historians are strongly influenced by the time in which they lived and [by] the dominant opinions in that era." Another student wrote "They pay attention to the facts but also give their opinion, for example, by explaining that some things are less important." A third student from the reading-to-write condition wrote, "Historians create an image of the past." Students in the content-based condition usually reported more general descriptions. According to these students, historians "give opinions," "are doing research," or "write a lot of things based on their opinion." Regarding historians' modes of reading, the students in the content-based condition often mentioned superficial elements, such as "read seriously" or "underline important parts of the texts."

Table 3
Mean Scores and Standard Deviations for the Quality of Written Essays in Both Conditions (Scale 1 to 4).

Category	Reading-to-Write Condition (N = 46) Mean (SD)	Content-Based Condition (N = 48) Mean (SD)
<i>Structure</i>		
Introduction	1.85 (0.67)	1.71 (0.50)
Main paragraphs	2.30 (0.92)	1.83 (0.66)
Conclusion	1.52 (0.78)	1.46 (0.71)
<i>General Writing Aspects</i>	2.59 (0.72)	2.29 (0.80)
Audience-orientated	2.80 (0.65)	2.35 (0.79)
Coherence	3.04 (0.99)	1.69 (0.66)
<i>Domain-specific reasoning</i>	2.17 (0.95)	1.54 (0.80)
Addressing perspectives	2.72 (0.83)	2.42 (0.71)
Using historical context	2.74 (0.61)	2.58 (0.65)
Using criteria significance	2.42 (0.41)	2.02 (0.42)
Using historical content		
Mean score		

Table 4
Mean Scores, Standard Deviations, and Observed Range Pre- and Posttest for Main Categories Regarding Metaknowledge.

Category	Reading-to-write condition (N = 46)				Content-based condition (N = 48)			
	Pretest		Posttest		Pretest		Posttest	
	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range	Mean (SD)	Range
Metaknowledge about reading								
Reasoning about historical significance	0.89 (1.20)	0–4	2.83 (1.84)	0–8	1.17 (1.34)	0–4	1.23 (1.48) /	0–5
Writing	1.02 (1.13)	0–4	1.85 (2.08)	0–9	1.02 (1.39)	0–5	1.56 (1.66) /	0–7
Total	0.91 (1.23)	0–4	0.76 (1.39)	0–8	1.19 (1.55)	0–6	1.06 (1.52) /	0–7
	2.83 (1.83)		5.43 (2.88)		3.38 (2.27)		3.85 (2.37)	

Table 5
Percentage of Answers Demonstrating a Domain-Specific Description of History.

Prompt	Reading-to-write condition (%) (N = 46)	Content-based condition (%) (N = 48)
I learned during the lesson unit on Columbus		
1. about historians' craftmanship	43.0	16.0
2. about historians' way of writing	27.5	8.0
3. about historians' way of reading	37.0	27.0

4. Conclusion and discussion

This study aimed to investigate the effects of a reading-to-write instruction on the quality of written essays and on students' metaknowledge about reading, reasoning about historical significance, and writing. Previous research has shown that the explicit teaching of reading strategies may improve students' writing (Graham et al., 2018). Instruction included identifying the authors' message, the (evaluative) language used to construct this message, and how historians were influenced by their historical context or perspective. Based on our theoretical framework, we expected positive effects of a domain-specific reading instruction on the quality of written essays. In addition, we expected that students in the reading-to-write condition would gain more metaknowledge about reading. Finally, we explored the effects of our intervention on students' metaknowledge about writing historical accounts and reasoning about historical significance.

Analysis showed a small positive effect of the reading-to-write instruction on the quality of written essays. More detailed medium effects were found for Main Paragraphs, Coherence of the Essay, and Using Historical Context. A large effect was found for Addressing Perspectives. These results seem promising given the importance of understanding different interpretations for history education (van Boxtel & van Drie, 2018, van Drie, Braaksma, & van Boxtel, 2015). The large effect on Addressing Different Perspectives is possibly linked to the emphasis that we put on connecting the background of the author to the message of the text and on underlining evaluative word groups during the reading-to-write intervention. Outcomes regarding Main Paragraphs and the Coherence of the written essays could be linked to close reading activities and the study of the structure of accounts. Given that historical contextualization was not part of our intervention, it is not clear why students' writing improved in this subcategory. A possible explanation could be that students in the read-to-write condition readily acknowledged the role of historical context because they received instruction and discussed how historians can be influenced by their historical context. Overall, the positive effect of a reading instruction on the quality of students' writing aligns with the results of previous research and shows that instruction on reading can improve the quality of written essays (Graham et al., 2018).

With respect to the acquisition of metaknowledge, we expected that metaknowledge about reading would improve in the reading-to-write condition but not in the content-based condition. At the pretest, no differences between conditions were found for metaknowledge about reading. At the posttest, students in the reading-to-write condition scored significantly higher on metaknowledge about reading than students in the content-based condition. Therefore, we conclude that students gained metaknowledge about reading as a result of our explicit teaching in the reading-to-write condition, but students in the content-based instruction did not seem to acquire this metaknowledge spontaneously. Regarding metaknowledge concerning reasoning about historical significance, we did not find significant differences between both conditions regarding metaknowledge on reasoning about significance. Students in both conditions acquired more knowledge of the concept of historical significance. This finding is not surprising because the concept of historical significance was evenly discussed in both conditions. Regarding writing, the posttest revealed no significant differences between the two conditions—most likely because of our focus on reading during the intervention lessons. This finding is important because of our limited knowledge concerning the impact of reading-to-write instruction on metaknowledge about writing (Graham et al., 2018). Metaknowledge about reading and writing is considered important to reading comprehension and the quality of written text (e.g., Klein & Kirkpatrick, 2010; Schoonen & de Glopper, 1996; Trapman et al., 2014; Van Gelderen et al., 2007).

The analysis of the learner reports suggests that students in the reading-to-write condition learned more about domain-specific

features of history and historians' craftsmanship compared to students in the content-based condition, who frequently considered accounts as "opinions." This suggests that our design could contribute to the development of more nuanced epistemic beliefs, which are important to understand the interpretative nature of history (Stoel et al., 2017; Goldman et al., 2016).

Despite the positive effects of our reading-to-write instruction, there are ways to further improve the quality of the essays. In the reading-to-write condition, an average score of 2.30 for the main paragraphs suggests that even students in the reading-to-write condition encountered problems with using counterarguments and rebuttals to reinforce their point of view or to convince the audience. This outcome aligns with former conclusions about students' struggles in dealing with counterarguments and rebuttals (van Drie, van Boxtel, & van der Linden, 2006). In addition, although the structure of written essays was discussed during the lesson unit, it was difficult for students to write proper introductions (main score = 1.85) and conclusions (main score = 1.52). This outcome suggests that students need more explicit writing instruction, which is recommended by Goldman et al. (2019), who concluded that domain-specific reading instruction in the field of science education did not elicit the use of concepts or making connections in a writing task.

Our reported findings are not without limitations. In order to exclude teacher effects, all participants belonged to the same school and were taught by one teacher, who is also the first author; this might have led to bias (e.g., expectations regarding better results in the reading-to-write condition). In order to prevent bias, detailed lesson plans were developed and compared with logfiles and students' answers. In addition, all essays were coded without knowledge of which instruction the learner had received. More research in a variety of school settings and with different teachers is needed to generalize these findings. In addition, topic knowledge could have influenced reading comprehension (O'Reilly et al., 2019). Students' topic knowledge was not measured, but this should be incorporated in future research. Finally, students' writing performance was not measured prior to the intervention. Consequently, we must be cautious with our conclusions. However, students were randomly assigned to a condition and, given students' limited experience with such tasks, we assume that both conditions did not differ prior to the study regarding background knowledge or writing performance.

This study has several implications for educational practices and future research. Application in classrooms of domain-specific reading instruction might deepen students' comprehension of the nature of historical knowledge. The reading-to-write intervention might provide teachers with an example of how to teach students to read historical accounts (Greenleaf & Valencia, 2017) and how to implement diverse teaching practices (van Drie, Braaksma, & van Boxtel, 2015; Wissinger et al., 2020). For researchers, it is important to repeat the reading-to-write instruction in history education in order to investigate whether the impact of this instruction is robust and whether effects can be found on more aspects of writing (e.g., involving counterarguments or rebuttals). Researchers have found promising results regarding explicit instruction on knowledge of (second)order concepts (Stoel et al., 2017), but more research is needed to see whether students apply this knowledge while reasoning historically. This research would help to uncover the extent to which metaknowledge of writing affects the quality of students' essays. Furthermore, it is important to investigate whether metaknowledge of historical texts is related to improved reading comprehension of historical texts and/or the quality of written historical essays (van Drie et al., 2017, 2021). Finally, we recommend that researchers compare the effects of a reading-to-write instruction with the effects of a domain-specific writing strategy instruction, which has been shown to be effective (Klein & Boscolo, 2016), in order to grasp the benefits and limitations of a reading-to-write instruction. In conclusion, our study suggests that reading-to-write instruction can be beneficial for writing in history.

Declaration of Competing Interest

None.

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Appendix A

Columbus Day is celebrated on the second Monday in October in the United States. This day has been officially a national holiday since 1937. However, not all States celebrate this day. Some States find this day an insult to the descendants of the original inhabitants of the United States. The state of South Dakota celebrates this day but calls it "Native American Day."

The US government wonders whether Columbus Day should be celebrated as a national holiday. A historical committee has been set up to investigate this issue. The committee receives these questions:

- 1 How has the assigned significance to Columbus developed over time?
- 2 Should Columbus Day be celebrated as a national day or not?

In order to make a decision about Columbus Day, you as a historian are asked to answer these questions.

Write an essay to the committee in which you indicate to what extent Columbus is historically important. Also pay attention to how thinking about Columbus has developed over time. Then give a reasoned opinion on whether Columbus Day should be celebrated as a national holiday or not.

Use the texts in which two historians assign significance to Columbus (Text 1 and 2) and a text with background information

(Background to the texts). Finally, you will find a brief biography about Columbus.

You can also use the information from the lessons. Write an argumentative text in which you answer the above questions. There is no prescribed length of the text. Attempt to write a text of at least 250 words. For this assignment you have one lesson.

Appendix B

Pre- and posttest metaknowledge reading, reasoning about historical significance, and writing

A good friend would really like to get a good grade for history. This friend asks you for help with an assignment. He/she must read a number of texts and write an essay based on these texts.

The assignment that your friend has to do is write an essay in which he or she explains how historians' interpretation of this significant historical person has developed through time.

Write an email to this friend in which you give tips on how to read historical texts and how to write a letter in the context of this assignment.

Appendix C. Coding scheme: Written Texts

Text Structure

	1	2	3	4
Introduction	None of the characteristics listed alongside are present / There is no introduction.	There is an introduction and - Mentions a position on Columbus Day in the introduction. Or - Introduces the subject: the commemoration of Columbus.	There is an introduction and - Mentions a position on Columbus Day in the introduction. and - Introduces the subject: the commemoration of Columbus.	Mentions a standpoint on Columbus Day in the introduction and introduces the subject: commemorating Columbus but does not yet mention arguments in the introduction. Introduction invites readers to read.
Main paragraphs	The development in thinking about Columbus is discussed Or On the importance of Columbus from the perspective of the 21st century	The development in thinking about Columbus is discussed. This development is moderately described and On the importance of Columbus from the perspective of the 21st century supported by an argument.	The development in thinking about Columbus is discussed. This development is well described and The importance of Columbus from the perspective of the 21st century supported by several arguments.	The development in thinking about Columbus is discussed. This development is well described and On the importance of Columbus from the perspective of the 21st century supported by several arguments, there is a counter argument that is being refuted.
Conclusion	There is a conclusion about commemorating Columbus, but standpoint or argumentation are not repeated / There is no conclusion.	Concludes with a conclusion about the commemoration of Columbus and 2 of the following: - Repeats position. - Repeats main arguments briefly and powerfully. - The conclusion is convincing. - Does not mention any new arguments in the conclusion.	Concludes with a conclusion about the commemoration of Columbus and 3 of the following: - Repeats position. - Repeats main arguments briefly and powerfully. - The conclusion is convincing. - Does not mention any new arguments in the conclusion.	Concludes with a conclusion about the commemoration of Columbus in which the point of view and main arguments are briefly and powerfully repeated. The conclusion is convincing. Does not mention any new arguments in the conclusion.

General Writing

	1	2	3	4
Audience-Orientated Writing	Does not apply the conventions belonging to the type of text (letter) at all (it is not a letter). The style does not show understanding for the reader (too informal or too formal).	Hardly applies the conventions associated with the type of text (letter) (it is a very informal letter). Is generally inconsistent in the use of a style that shows understanding for the reader.	Uses the conventions belonging to the type of text (letter) largely correctly (it is a letter, but formal conventions are not used correctly everywhere). Overall, the author is able to use a style (not too	Uses the conventions belonging to the type of text (letter) correctly (it is a formal letter). Overall, the author is able to use a style that shows understanding for the reader. The style makes the text attractive to read <i>(continued on next page)</i>

(continued)

			informal and not too formal) that shows understanding for the reader.	(e.g., by varying sentences, attractive beginning and ending).
Coherence	Consistency in the text and within compound sentences is regularly not clear. The author's line of thought cannot always be followed. There is no, or no good paragraph classification. Errors with referrals and linking words occur regularly.	Coherence in the text and within compound sentences is sometimes clear and sometimes not clear. The author's line of thought is generally fairly clear, but not always. There is a reasonably good paragraph classification. Errors with reference and linking words occur occasionally.	Coherence in the text and within compound sentences is usually clear. The author's line of thought is generally clear. There is a good paragraph classification. Reference and linking words are used correctly.	Coherence in the text and within compound sentences is clear. Paragraphs are linked into a coherent whole. The author's line of thought is clear and logical and consistently ordered. The connection between and within sentences is well indicated by the use of correct references and connection words.

Reasoning About Significance

	1	2	3	4
Perspectives on Columbus	A perspective on Columbus is distinguished.	Two different perspectives on Columbus are distinguished.	Two different perspectives on Columbus are distinguished and understood from the historical context.	Two different perspectives on Columbus are distinguished and the sources are mentioned and understood from the historical context.
Use historical context	The historical context was not used to comprehend or largely incorrect	One aspect of Columbus actions was more or less correctly contextualized.	Two aspects of Columbus actions were more or less correctly contextualized.	Two or more aspect of Columbus actions were contextualized correctly.
Use criteria significance	Criteria for significance are not or not correctly used.	One criterion for significance is used implicitly or explicitly.	Several criteria for significance are implicitly stated.	Several criteria for significance are explicitly mentioned.
Use key concepts	In terms of content, the reasoning followed contains errors.	In terms of subject matter, the reasoning followed is broadly correct but contains errors on a detailed level.	The reasoning followed is correct in terms of subject matter, but there is no/narrow use of subject terms and/or historical facts.	The reasoning followed is correct in terms of subject matter and use is made of subject terms and/or historical facts. Attention is also paid to structural concepts.

Appendix D. Coding scheme metaknowledge reading, reasoning, and writing about historical significance

Recommendations reading	Examples
Content text	Identify arguments in this particular account.
Reading process	Underline important things parts of the text.
Recommendations writing	Provide historical evidence for your opinion.
Product	Make a chart with the views of the historians.
Process	Mind how the author is influenced by his political background.
Recommendations reasoning about Historical Significance	Compare historians from different times.
Background author	What did it cause in that time?
Comparisons accounts	What happened in that time?
Criteria significance	Find historical sources from that time
Other aspects of reasoning about significance	Get started on time
Information	
Gather information	
Other	
Other	

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