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**FOSTERING HISTORICAL THINKING AND INTEGRATION: THE EFFECTS
OF INSTRUCTION ON STUDENT QUESTION GENERATION IN HISTORY**

A Thesis in

Educational Psychology

by

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Abstract

The purpose of this research was to examine the development and use of historical thinking skills and integration through the MD-TRACE Model (Rouet & Britt, 2011). More specifically, the study aims to measure how instruction can foster students' abilities to generate questions in order to integrate multiple documents. 157 undergraduate students from introductory level educational psychology course at a large R1 institution participated in the study. Participants were randomly assigned into two conditions; a treatment condition that received question generation instruction and a control condition that did not receive question generation instruction. All participants were asked to generate questions based on primary source documents from an undergraduate history textbook. Results indicated that instruction did not influence the number of question generated, but it did influence quality of questions generated. Many students were not able to generate high-level historical thinking and integration questions without instruction. However, with instruction, more students were capable of producing these high-level historical thinking and integration questions.

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Chapter 1

Introduction

Learning from multiple documents is critical to both education and daily life. From learning about human anatomy and physiology to deciding whom to vote for in the next election, multiple document comprehension plays an important role in successfully completing these tasks. Each situation offers different text types, conflicting and componential (Bråten, Anmarkrud, Brandmo, & Strømsø, 2014). Both text types offer only a partial amount of information, which requires the selection of relevant information from each text and integration of selected information. Though these skills are vital, multiple document reading skills remain underdeveloped in most student populations and require instructional support (Bråten et al., 2014; Van Meter & Firetto, 2008).

A hallmark of historical thinking is the ability to understand that what is known about historical events based on an interpretation of the documents and artifacts that record those events. Historians recognize that these documents offer a partial and biased recording of events and that complete understanding is possible only through a process that integrates interpretations across multiple documents.

To achieve a thorough understanding of history, students must be able to select relevant information from each document, evaluate sources, find similarities in accounts, be aware of differences in accounts, and integrate these multiple representations (Rouet & Britt, 2011; Schnotz & Bannert, 2003). Both strategic processing of multiple texts (Bråten, et al., 2014; Rouet & Britt, 2011) and historical thinking (VanSledright, 2002; 2004; Wineburg, 1991; 2001) are necessary, then, in order to learn from multiple documents in history.

Chapter 2

Theoretical Framework

The theoretical model that informs this research is the Multiple-Document Task-based Relevance Assessment and Content Extraction (MD-TRACE) model, which explains the comprehension and integration process of multiple documents (Perfetti, Rouet, & Britt, 1999; Rouet & Britt, 2011). In the MD-TRACE model, the task drives the comprehension process of multiple documents, including the searching, evaluation, and integration of document information (Rouet & Britt, 2011).

The MD-TRACE model describes an interaction between internal and external resources. The reader brings certain internal resources to the learning situation including his or her own prior knowledge, reading skills, and self-regulatory behaviors/abilities. External resources include characteristics of the documents, including content and source information, and the task specifications. The reader internalizes the task specifications as a task model, which indicates what information is necessary and relevant to complete the task. Using the task specifications and prior knowledge, the reader will select and store relevant information from the document as an internal representation of that document, known as the documents model. The documents model is constantly updated as more information is selected. From the documents model, the reader creates a task product, an external production of the task model. The task product is then compared to the task model to ensure that the goals of the task were met. If they were not, the reader goes back to find more information to complete the task. Throughout this process the task serves a self-regulatory function in the MD-TRACE model. It helps the reader determine the goals of the task, the information to be selected, and what the end product should look like. In summary, the task drives the processing and integration of multiple documents.

What ultimately separates the MD-TRACE model from Rouet's (2006) original model is the additional step of integration across multiple texts. Integration is the process of combining relevant information from multiple documents together into a singular representation, which then can be used to meet the specifications of the task (Rouet & Britt, 2010). Generally, because of the complexities of text, the information that is to be integrated is not readily available at the surface level. Instead some level of relational reasoning is required through contrasting or corroborating information from different sources before integration can occur (Rouet & Britt, 2010; Perfetti et al., 1999).

While the MD-TRACE model provides a framework for understanding how readers process multiple documents on any topic, there are unique processes involved in the processing of historical texts. According to Wineburg (1991, 2001), the selection and organization of document information is directed by an individual's historical thinking (Wineburg, 1991; 2001). Wineburg (1991) described historical thinking as having three heuristics: corroboration, sourcing, and contextualization. Corroboration is the act of working across documents, deriving intertextual meaning by comparing and contrasting these materials. Sourcing is the act of considering authorship, time period, and biases of the materials. Contextualization is the act of placing an event in space and time to humanize the experience. All of these heuristics serve the reader in comprehending individual documents and their relation to one another.

Review of Past Research on Multiple Documents Learning

This model can be used to interpret findings from previous research on multiple document reading. A seminal study by Wineburg (1991) compared students and experts multiple document reading in history. The results demonstrated that students did not view the reading task as a multiple documents task, but rather, a task to find the best singular text that would provide

the greatest amount of accurate information. Students tended to value documents that they believed came from a source of authority, such as a textbook, instead of using the historical thinking heuristics to evaluate the documents' validity themselves.

Students are particularly hindered when integrating information from multiple documents that contain conflicting information (Britt & Rouet, 2011; Bråten, Britt, Strømsø, & Rouet, 2011). In Britt and Rouet's (2011) study, participants chose information that was consistent to their prior knowledge, or information from a documents model. Additionally, participants did not look at the relationships of information across texts in order to select consistent information to integrate. Bråten, Britt, Strømsø, and Rouet (2011) demonstrate that students do not think critically and analytically when selecting information from multiple documents, and rely on epistemological beliefs and personal beliefs in reading and selecting information from multiple documents. They also found that epistemological beliefs not only affect text comprehension, but self-regulation during reading. One possible reason students do not do this is because they do not have a task that promotes a critical-analytic stance, or awareness that there are both consistent and conflicting information in each of the conflicting texts.

Effects of summary and argumentation tasks have been most commonly studied, but prove to be inconsistent throughout the literature. In a study conducted by Wiley and Voss (1999) undergraduate students read from eight different sources related to the topic of Ireland's potato famine of the 1800s. Students were assigned to one of four writing tasks, argument, narrative, summary, or explanation. They found that participants assigned to the argument task made more causal connections in their responses participants in the other three tasks. They conducted a second study with only summary and argumentation tasks, and found additional support for the first study. Gil, Bråten, Vidal-Abarca, and Strømsø (2010) also used writing task

manipulations to measure summary and argumentation task effects. Undergraduate students read five texts on the topic of climate change and then were assigned to either the summary or the argumentation task, controlling for prior knowledge. Results indicated that participants in the summary group outperformed those in the argumentation group, contrary to the results of Wiley and Voss (1999). Additionally, a follow up study revealed that when controlling for epistemological beliefs, learners holding more certain beliefs regarding climate change performed best on summary tasks, and for those holding more sophisticated views on climate change had no benefit from one task or the other. It is important to note the different topics used in each of the studies in relation to the conflicting findings. As Britt and Rouet (2011) and Bråten, et al. (2011) both demonstrate, prior knowledge and beliefs impact the way in which students interact with the text in that they tend to work with texts that are consistent with both prior knowledge and beliefs. One can construct an argument that does not require both views, but just a complete understanding of a singular view of which they have taken a stance. This is most likely because the nature of these tasks do not necessarily promote integration of multiple document use.

Britt and Sommer (2004) tried a different approach to task manipulations. In their study participants were directed to either focus on comprehension or integration while they read multiple documents on the history of the Illinois territory acquisition. These instructions to comprehend or integrate had no effects on participant's response integration. However, participants were also required to answer questions, either a microstructure question or a macro-structure question. Results indicated that participants who answered macro-structure questions performed significantly better on integrated text recall than those participants who answered the microstructure questions. Though these results were significantly different from each other,

participants in the single text condition still outperformed those in these two multiple documents conditions. These results support that students still struggle with multiple document reading tasks when compared to singular document reading tasks. Heartening is that when the task, such as the macro-questions, require the reader to focus on integrating specific information, they can produce such responses.

What this review of literature reveals is that tasks need to be specific to the integration of multiple documents. If the task can be completed with a single document, students are going to tend to rely on what they know and are comfortable with, single document accounts (Wineburg, 1991; Britt & Sommer, 2004). Students also gravitate toward a singular document, because they do not know that singular documents often only present a partial, and sometimes biased view (VanSledright, 2012). VanSledright (2012) suggests that instructors make students aware of singular text pitfalls and offer that multiple documents must be integrated in order to get the complete understanding of the topic.

These tasks in the literature also require that the instructor provides students with a task in order to engage with the multiple documents. It is important that students are able to work with multiple documents on their own beyond the classroom, when an instructor is not present to provide such tasks. Questioning, however, is an independent task that can drive multiple document use and integration. Britt and Sommer (2004) demonstrated the effects of macro-structure questions on multiple document use, but those questions were provided. It is possible that students can be instructed to generate these question types independently to encourage more of a critical-analytic stance and to develop inquiry attitudes in the classroom and beyond.

Questioning as the Task

Research has shown questioning to be an effective reading comprehension strategy (Graesser & Lehman, 2011; Rosenshine et al., 1996; Taboada & Guthrie, 2006). In fact, Graesser and Lehman (2011) argue that questioning is an even more effective reading comprehension strategy than the highly researched goal-driven comprehension strategy. While goal-driven text comprehension has been mildly successful, questioning has been far more consistent in its success of text comprehension. Goals are generally more broad and do not have a forcing function for students to know when they are not meeting that goal. Conversely, questions provide feedback when the question cannot be answered. In addition, Graesser and Lehman (2011) argue there is a question associated with every goal that can drive comprehension.

Chin & Osborne (2010) cite while student generated questions have great potential in the classroom, student questions are typically “infrequent and shallow” (p. 235) and generally require question instruction. As Graesser and Lehman (2011) state, “Students need to learn how to cast a net that intelligently targets information in a fashion that is both relevant and deep, not indiscriminate and shallow” (p. 69). For students working with historical material, they also need a question that compares and contrasts different accounts of events in order create an integrated representation of history.

This Study

The following experiment explores the potential impact of instruction on the quality of student-generated questions. A meta-analysis by Rosenshine, Meister, and Chapman (1996) on question instruction demonstrated that question frameworks and exemplars of question structures produced the best effects for college-aged students. The instructional framework is based on these findings. Additionally, as VanSledright (2012) suggests, the instruction explains why we

ask questions in the first place and the value that questions hold, because students typically do not have the opportunity to ask questions, but rather, see it as their duty to answer questions (See Chin & Osborne, 2010).

Research Questions

The goal of this research is to measure how instruction can impact student generated questions in history. The author seeks to answer the following research questions:

1. Is there a significant difference in the number of questions students generate between conditions?
2. Is there an association between condition and type of question generated?

Chapter 3

Method

Participants

Participants were 157 undergraduate students from an introductory educational psychology course at a large public university in the Eastern United States. All participants signed an informed consent at the beginning of the study. There were 14 males and 144 females; 2 participants classified their gender as other. Seven participants indicated that English was their second language. The population was composed of 91% White/Caucasian, 6% Asian, 1% African American, 1% Hispanic, and less than 1% other. As for prior history coursework, 75% reported taking at least 3 credits, 13% 4-6 credits, 4% 7-12 credits, 8% more than 12 credits. Over 94% of those credits were at the Advanced Placement or 100-level. The majority of participants were education majors (58%), followed by communication sciences and disorders majors (30%). All participants received course extra credit upon completion of the study, and an alternative assignment was offered to those who did not wish to participate in the study.

Design

All participants were randomly assigned to either the Question Instruction (QI) condition or No Question Instruction (NoQI) condition. Participants in both conditions completed a demographic survey, and a topical prior knowledge quiz. The Need for Cognition measure (Cacioppo, Petty, & Kao, 1984), and the Epistemological Beliefs in History measure (Maggioni, 2010) were also administered, but a full interpretation of related findings is beyond the scope of this paper. In addition, all participants received a Historical Documents Organization Matrix to record notes from the historical documents. In the QI condition participants received instruction on what a high-quality historical thinking question is and how to generate this type of question. After instruction, participants in the QI group were asked to generate questions based on the multiple historical documents they read earlier in the study. Participants in the NoQI condition were prompted to generate questions based on the multiple historical documents without any question generation instruction. The quality of participants' questions served as the dependent measure and were evaluated based on a rubric reflecting the sophistication of participants' questions. Two topics were selected for historical material to control for topic effects. Participants were assigned to one of these topics so that half of participants studied topic 1 and half studied topic 2. The two topics selected from American history were imperialism and the progressive era. These were chosen because they are not as well known as topics such as WWII or the American Revolution, which are both referenced frequently in popular culture, and the variance in prior knowledge would be smaller. Hereafter, the data sets pertaining to these topics will be labeled as the primary study and the replication study. If the effects of question generation are independent of topic, results from the replication study should mirror those of the primary study.

Materials

Individual difference measures.

Demographics. The demographic survey included questions regarding gender, ethnicity, number of history courses, SAT, ACT, and intended major.

Prior knowledge. A 10-item multiple-choice test measured prior knowledge in both studies.

Need for Cognition. The Need for Cognition (NFC) instrument measured the degree to which an individual enjoys engaging with tasks that require thinking (Cacioppo & Petty, 1982). For this study, the shortened, 18-item version of the NFC was used (Cacioppo, Petty, & Kao, 1984). Total NFC scores determined the degree that participant has a Need for Cognition, higher scores indicating a higher NFC.

Epistemological beliefs in history. A 22-item survey called the Beliefs in History Questionnaire (BHQ) (Maggioni, 2010) was used to measure epistemological beliefs in history. The BHQ measures participants' beliefs regarding the nature of knowledge in history, and characterizes the knower in a particular subcategory along the continuum of epistemic beliefs in history, copiers, subjectivists and criterialists (Maggioni, 2010). There are 5 items consistent with the copier stance, 9 items with the subjectivist stance, and 8 items with the subjectivist stance. This measure includes statements such as, "A historical account is the product of a disciplined method of inquiry." Participants respond to each statement on a sliding 6-point Likert-scale indicating the degree to which the statement describes them (6 = strongly agree, 1 = strongly disagree).

Experimental materials.

Historical documents. The documents selected for both topics were taken from an undergraduate textbook commonly used at the university that is a compilation of primary source documents titled, *Major Problems in the Gilded Age and Progressive Era: Documents and Essays*. Both historical topics included a political cartoon, a photograph, and two text-based documents. The list and description of the primary source documents for each study are contained in Table 1 below.

Table 1

Description of Experimental Texts

	Imperialism	The Progressive Era
Text 1	William Jennings Bryan Opposes U.S. Occupation of the Philippines, 1890 <ul style="list-style-type: none"> • Argues that the U.S. should not be involved with occupying the Philippines • 289 Words • Flesch-Kincade Grade Level 12.8 	Jacob Riis, How the Other Half Lives, 1890 <ul style="list-style-type: none"> • Describes the housing conditions of factory workers living in company housing • 663 Words • Flesch-Kincade Grade Level 10.4
Text 2	Albert Beveridge Defends U.S. Imperialism, 1900 <ul style="list-style-type: none"> • Argues that the U.S. should occupy the Philippines • 817 Words • Flesch-Kincade Grade Level 8.8 	Andrew Carnegie, The Triumph of America, 1885 <ul style="list-style-type: none"> • Describes the advantages of capitalism and the hope of the future • 318 Words • Flesch-Kincade Grade Level 20.7
Photograph	Depicts American soldiers marching through the streets of the Philippines with a large American flag.	Depicts children that had been working in industry/factories. Their faces are dirty, worn, and tired.
Political Cartoon	Depicts a pirate-like character clothed in the American flag holding a sword with the words “Imperialism” across the blade. Under the feet of the pirate are a number of smaller characters wearing names of the countries under U.S. Imperialism.	Depicts a business owner being pulled by small children. The cart on which the business owner sits has the words, “Supported by child labor”.

Historical document organization matrix. In order to record and organize the information from these documents, participants were given a matrix containing elements to facilitate Historical Thinking heuristics such as sourcing, corroboration, and contextualization (Wineburg, 1991). Figure 1 below displays the matrix that participants used for their reading based on the given topic.

Title of Document	Sourcing			Contextualization		
	Type of Document	Author	Point of View	Purpose of the Document	Main Idea	Importance

Figure 1. Historical document organization matrix.

History question instruction. The purpose of the instruction was to teach participants how to differentiate fact-based questions from questions that facilitate the integration of multiple historical texts in order to generate these higher-level questions on their own. Instruction was delivered electronically and included an activity asking participants to identify the historical thinking level questions from the fact-based questions, a brief instruction video made by the first author using iMovie, and a list of question frameworks to serve as exemplars.

Question identification. This brief activity asked participants to differentiate fact-based questions and questions that facilitate the integration of multiple historical texts. Participants had to select the multiple-text based, historical thinking question from the two questions presented. Based on the participant's response, the individual was given pre-determined feedback set up by

the author in the Qualtrics system. If it was correct, they were told so, but if it was incorrect, they were provided with feedback of why it was incorrect.

Instructional video. Next, participants viewed a short video of the author telling a story demonstrating the purpose of question generation in history, connecting the participants' everyday life with historical thinking and questions. This was done by telling the story of the two students who skip a test to go skiing but tell their professor they missed the test due to a flat tire. The professor agrees to let them make up the test, but when the participants get to the last item, they are confronted with the question, "Which tire was flat?" The professor was corroborating evidence from each participant to understand what really happened, just like historians do to understand historical events. This leads into the description of what Historical Thinking is and the role multiple texts play in the study of history. The author went on to explain how questions can facilitate Historical Thinking and the integration of multiple texts, and then demonstrated what a higher-level historical thinking question in history looks like. The author then tied it back to a student relevant issue, an exam. Participants were asked to consider a situation where they had to use a question prompt for an exam in which they would be graded on the number of ideas and concepts were included in their responses. Based on that scenario, participants were asked which question would they prefer to have as a prompt, a fact-based question or a question that facilitates the integration of multiple historical texts? To conclude, the author emphasized the importance of not only asking a question, but also the quality of the question asked.

Question frameworks. The final part of the instruction provided participants with historical question frameworks that they were instructed to use in combination with their Historical Document Organization Matrix. Question frameworks have been shown to be most

effective with question generation instruction in college participants (Rosenshine et al., 1996). These frameworks were exemplars of historical thinking level questions.

No Question Instruction Condition Materials

All of the same materials from the question instruction (QI) condition were used in the no question instruction (NoQI) condition, with the exception of the question instruction itself. The question identification, same as the one used in the question instruction, was delivered after questions were generated. This was given to the participants to control for timing.

Question Generation Outcome Measure

At the end of the instructional materials, QI participants were prompted to generate their own questions in order to synthesize, analyze, and evaluate the multiple historical documents. Participants could generate from 1 to 10 questions. The NoQI group was prompted to generate questions after reading the text, and directions were appropriately modified for the control group as to not reference historical question instruction components. The questions from both conditions were collected and coded using the Historical Question Rubric described later in this section.

Procedures

Participants were recruited in class by the author. Along with a description of the study and alternative assignment for extra credit, the first author also explained how to sign-up for an experimental session.

On the day of the participants' designated experimental session, participants were asked to access the experimental materials via Qualtrics, an electronic survey system. All participants consented to participate in the study and then completed the following individual difference measures in this order: Demographics, Prior Knowledge Measure, Need for Cognition Measure,

and Beliefs in History Questionnaire. Participants were then provided the texts through the Qualtrics system, and by the counter-balanced topic design, were randomly assigned a topic with the appropriate readings. Participants were prompted to read and complete their Historical Document Organization matrix, given to them at the beginning of the study. Participants in the QI condition received the question generation instruction and a prompt to generate questions based on their readings. Meanwhile, participants in the NoQI condition were prompted to generate questions based on the readings and complete the question identification activity described above.

Coding. Each participant's question(s) was/were coded using the rubric located in Table 2. The rubric attempts to capture the heuristics that Wineburg (1991) proposes are vital to historical thinking, while also recognizing three levels of processing. The lower level reflects both efferent and expressive stances, showing direct interest in fact finding from the text or connects the reader's emotions and feelings to the text's contents, respectively (Soter et al., 2008). The second level reflects critical analytic thinking associated with components of historical thinking and evaluates, "arguments, assumptions, worldviews, and beliefs that can be inferred from the text" (Soter et al., 2008, p. 374). The third level reflects questions that require corroboration of evidence across documents and integration of arguments, viewpoints, concepts, and ideas from multiple sources. Both raters coded every question and reconciled all discrepancies.

Table 2

Historical Question Type Rubric

Rubric Levels	Description	Participant Generated Examples
Efferent & Expressive		
Fact	A knowledge or comprehension level question	“What were lodging houses?” “Who wrote this?”
Affect	A knowledge or comprehension level question with regard to human emotion or experience	“How does seeing the political cartoon affect your opinions about Imperialism at this time in history?” “Do you feel the written documents are more credible sources of history than the visual documents?”
Critical Analytic		
Historical Evaluation	A question regarding relevance of that document in history	“How did documents like Jacob Riis' affect the treatment of lower class Americans/immigrants throughout the rest of history?”
Sourcing	A question of authorship or purpose	“What is the author’s point of view?”
Integration		
Corroboration	A question relating or comparing multiple documents or a document and prior knowledge intertextually	“How do the points of view differ from Jacob Riis' document and Andrew Carnegie's?” “Despite the different views provided in these documents, what commonalities do they have that provide us with a better understanding of the United States role in the Philippines?”

Chapter 4

Results

Primary Study

Preliminary analyses. Prior knowledge and verbal SAT scores were examined to determine if participants in the two conditions were comparable on these measures. Unfortunately, the verbal SAT scores are not interpretable because a large percentage of the participants either did not respond to this question or provided a number that is not possible. A t-test compared prior knowledge scores across conditions. There were no

significant differences in prior knowledge between QI ($M = 4.48$, $sd = 2.19$) and NoQI ($M = 4.96$, $sd = 2.15$) conditions, $t(74) = .537$, $p = .593$. This prior knowledge measure was out of potential 10 total points. These averages indicate an overall limited prior knowledge of the Imperialism topic.

Number of questions generated An independent t-test found no significant differences across conditions for the total number of questions generated, $t(74) = .279$, $p = .780$. The question instruction did not have an impact on the number of questions generated.

Association between condition and question type generated. A chi-square test determined whether there was an association between condition and the type of question generated. Proportions were calculated for each question type category to control for the varying number of questions students generated (See also Strømsø, Bråten, and Samuelstuen, 2003). Table 3 shows these proportions for each of the six coding categories across the two conditions. The chi-square test showed that there is an association between condition and the types of questions participants generated, $\chi^2(5) = 34.209$, $p < .0001$, $V = .41$. As Table 3 shows, 63% of the questions generated by participants in the NoQI condition were either could not be interpreted or were low-level. Comparatively, 68% of the questions generated by the QI group were higher-level questions, with a full 37% of all generated questions falling into the category of corroboration questions. Standardized residuals were examined to determine which question categories were responsible for the significant association between condition and question type (See in table 4 below). The only two significant contributing cells were the corroboration cells. This finding indicates the question instruction was most effective in teaching students how to generate corroboration questions, which can be seen in the large

difference in the NoQI group's 7% corroboration questions and the QI group's 37% corroboration questions.

Table 3

Primary Study Frequencies and Proportions of Question Types

	Uncodable	Fact	Affect	Historical	Sourcing	Corroboration	Total
	Evaluation						
NoQI							
N= 33							
Proportion	29%	29%	5%	9%	21%	7%	100%
Frequency	56	54	7	15	40	12	184
Avg./Participant	1.70	1.64	0.21	0.45	1.21	0.36	5.55(2.46)
QI							
N= 43							
Proportion	18%	13%	5%	16%	11%	37%	100%
Frequency	56	34	12	32	27	73	234
Avg./Participant	1.30	0.79	0.28	0.74	0.63	1.70	5.37(3.00)

Table 4

Primary Study Chi-square Standardized Residuals

	Uncodable	Fact	Affect	Historical	Sourcing	Corroboration
	Evaluation					
	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>
NoQI	1.13	1.75	0	.98	1.25	3.20
QI	1.13	1.75	0	.98	1.25	3.20

Replication Study

The purpose of this replication study was to ensure that initial findings were independent of the topic studied. Consistent with the first study, participants' questions were coded into categories and a chi-square test determined if there was a significant association between condition and the types of questions participants generated. First, however, preliminary analyses indicated that there were no significant differences between conditions on prior knowledge scores.

Preliminary analyses. Again, the verbal SAT scores are not interpretable because a large percentage of the participants either did not respond to this question or provided a number that is not possible. A t-test compared prior knowledge scores across conditions; however, there were no significant differences in prior knowledge on between QI ($M = 5.69$, $sd = 1.49$) and NoQI ($M = 5.29$, $sd = 1.60$) conditions, $t(72) = 1.102$, $p = .274$.

Number of questions generated. An independent t-test found no significant differences across conditions for the total number of questions generated, $t(73) = .889$, $p = .377$. Again, the question instruction did not have an impact on the number of questions generated.

Association between condition and question type generated. A chi-square test determined whether or not there was an association between condition and the type of question generated. Results indicate that the proportion of question types vary as a function of condition, $\chi^2(5) = 42.976$, $p < .0001$, $V = .46$. Table 5 displays the frequencies and proportions of student-generated questions. Again, over half of the questions generated in the NoQI group were low-level questions. Comparatively, 67% of the questions generated by the QI group were higher-level questions, with almost half of those higher-level questions being the integrative

corroboration questions. Standardized residuals were examined to determine which question categories were responsible for the significant association between condition and question type (See in table 6 below). The four significant contributing cells were the fact and corroboration cells. This result shows that the question instruction was most effective in teaching students how to generate corroboration questions, which can be seen in the large difference in the NoQI group 8% corroboration questions and the QI group's 36% corroboration questions.

Table 5

Replication Study Frequencies and Proportions of Question Types

	Uncodable	Fact	Affect	Historical	Sourcing	Corroboration	Total
	Evaluation						
<hr/>							
NoQI							
N= 42							
<hr/>							
Proportion	17%	35%	7%	6%	27%	8%	
Frequency	49	73	17	17	58	19	
Avg./Participant	1.67	1.74	0.40	0.40	1.38	0.45	5.38(2.92)
<hr/>							
QI							
N= 33							
<hr/>							
Proportion	16%	11%	6%	19%	12%	36%	
Frequency	37	23	15	29	26	72	
Avg./Participant	1.12	0.70	0.35	0.88	0.79	2.18	6.00(3.09)
<hr/>							

Table 6

Replication Study Chi-square Standardized Residuals

	Uncodable	Fact	Affect	Historical Evaluation	Sourcing	Corroboration
	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>	<i>R</i>
NoQI	.12	2.50	.19	1.69	1.25	3.20
QI	.12	2.50	.19	1.69	1.25	3.20

Chapter 5

Discussion**Summary of Findings**

The goal of this research was to measure how instruction can impact student generated questions in history. The results of the NoQI groups' performances on the question generation task on each of the two topics indicate that students were not able to generate deep level integration questions without instructional support. Students tended to generate low-level factual and affect questions that would not further stimulate historical thinking or integration. However, with instruction, students were capable of producing higher-level historical thinking and integration questions. Even more significant, this instructional intervention was brief, yet was able to yield large and significant effects on student-generated questions. This instruction could be easily be included in any curriculum as an in-class lesson or homework assignment with little cost and large benefits.

Future Research

This study shows the feasibility of providing instruction that helps students to generate high quality, integrative questions, which may improve multiple document comprehension. To

extend this research, the next phase will be to measure the instructional value of generating both a question and a response versus generating a response to instructor-provided question by assessing comprehension and integration. Wittrock's Generative Theory of Learning (1991) would suggest there is an added benefit in the generation of questions, as the students would be engaging not only in the process of generating an answer to their question, but the question itself. Both the question and response generation would serve an elaborative function to connect new and prior knowledge intertextually.

Additionally, there are motivational aspects of student question generation in multiple documents comprehension to be considered, as motivational constructs such as situational interest, play an important role in student engagement during reading tasks (Alexander, 2003; Schraw, Bruning, & Svoboda, 1995; Bråten et al., 2014). It is possible that student-generated questions provide more situational interest than teacher generated questions, and is worth being explored.

Conclusion

Multiple document comprehension is at the heart of engagement in historical thinking and the integration of textual information that is often conflicting or contradictory. As this research demonstrates, students can generate higher-order questions to promote both historical thinking and integration of multiple documents. While questioning has been shown to drive the comprehension of text, not much research has been done to understand the role of questioning as a multiple documents task. This research is a critical first step. Questioning instruction, especially self-generated questions, have valuable and largely untapped potential to aid students when reading and integrating information from multiple documents.

Appendix A

Documents for Learning in History Study

Topic 1: Imperialism Documents

Document 1: William Jennings Bryan Opposes U.S. Occupation of the Philippines, 1890

The young man upon reaching his majority can do what he pleases. He can disregard the teachings of his parents; he can trample upon all that he has been taught to consider sacred; he can disobey laws of the State, the laws of society and the laws of God. He can stamp failure upon his life and make his very existence a curse to his fellow men, and he can bring his father and mother in sorrow to the grave; but he cannot annul the sentence, "The wages of sin is death."

And so with the nation. It is of age and it can do what it pleases; it can spurn the traditions of the past; it can repudiate the principles upon which the nation rests; it can employ force instead of reason; it can substitute might for reason; it can substitute might for right; it can conquer weaker people; it can exploit their lands, appropriate their property and kill their people; but it cannot repeal the moral law or escape the punishment decreed for the violation of human rights...

Some argue that American rule of the Philippine Islands will result in the better education of Filipinos. Be not deceived. If we expect to maintain a colonial policy, we shall not find it to our advantage to educate the people. The educated Filipinos are now in revolt against us, and the most ignorant ones have made the least resistance to our domination. If we are to govern them without their consent and give them no voice in determining the taxes they must pay, we dare not declare them, lest they learn to read the Declaration of Independence and Constitution of the United States and mock us for our inconsistency.

Document 2: Albert Beveridge Defends U.S. Imperialism, 1900

MR. PRESIDENT, the times call for candor. The Philippines are ours forever, "territory belonging to the United States," as the Constitution calls them. And just beyond the Philippines are China's illimitable markets. We will not retreat from either. We will not repudiate our duty in the archipelago. We will not abandon our opportunity in the Orient. We will not renounce our part in the mission of our race, trustee, under God, of the civilization of the world. And we will move forward to our work, not howling out regrets like slaves whipped to their burdens but with gratitude for a task worthy of our strength and thanksgiving to Almighty God that He has marked us as His chosen people, henceforth to lead in the regeneration of the world.

This island empire is the last land left in all the oceans. If it should prove a mistake to abandon it, the blunder once made would be irretrievable. If it proves a mistake to hold it, the error can be corrected when we will. Every other progressive nation stands ready to relieve us.

But to hold it will be no mistake. Our largest trade henceforth must be with Asia. The Pacific is our ocean. More and more Europe will manufacture the most it needs, secure from its colonies the most it consumes. Where shall we turn for consumers of our surplus? Geography answers the

question. China is our natural customer. She is nearer to us than to England, Germany, or Russia, the commercial powers of the present and the future. They have moved nearer to China by securing permanent bases on her borders. The Philippines give us a base at the door of all the East.

Lines of navigation from our ports to the Orient and Australia, from the Isthmian Canal to Asia, from all Oriental ports to Australia converge at and separate from the Philippines. They are a self-supporting, dividend-paying fleet, permanently anchored at a spot selected by the strategy of Providence, commanding the Pacific. And the Pacific is the ocean of the commerce of the future. Most future wars will be conflicts for commerce. The power that rules the Pacific, therefore, is the power that rules the world. And, with the Philippines, that power is and will forever be the American Republic. . . .

But if they did not command China, India, the Orient, the whole Pacific for purposes of offense, defense, and trade, the Philippines are so valuable in themselves that we should hold them. I have cruised more than 2,000 miles through the archipelago, every moment a surprise at its loveliness and wealth. I have ridden hundreds of miles on the islands, every foot of the way a revelation of vegetable and mineral riches. . .

Here, then, senators, is the situation. Two years ago there was no land in all the world, which we could occupy for any purpose. Our commerce was daily turning toward the Orient, and geography and trade developments made necessary our commercial empire over the Pacific. And in that ocean we had no commercial, naval, or military base. Today, we have one of the three great ocean possessions of the globe, located at the most commanding commercial, naval, and military points in the Eastern seas, within hail of India, shoulder to shoulder with China, richer in its own resources than any equal body of land on the entire globe, and peopled by a race which civilization demands shall be improved. Shall we abandon it? That man little knows the common people of the Republic, little understands the instincts of our race, who thinks we will not hold it fast and hold it forever, administering just government by simplest methods...

But, Senators, it would be better to abandon this combined garden and Gibraltar of the Pacific, and count our blood and treasure already spent a profitable loss, than to apply any academic arrangement of self-government to these children. They are not capable of self-government. How could they be? They are not a self-governing race. They are Orientals, Malays, instructed by the Spaniards in the latter's worst estate...

The Declaration of Independence does not forbid us to do our part in the regeneration of the world. If it did, the Declaration would be wrong, just as the Articles of the Confederation, drafted by the very same men who signed the Declaration, was found to be wrong. The Declaration has no application to the present situation. It was written by self-governing men for self-governing men...

...This is our divine mission of America, and it holds for us all the profit, all the glory, all the happiness possible to a man. We are trustees of the world's progress, guardians of its righteous peace. The Judgement of the Master is upon us: "Ye have been faithful over a few things; I will make you ruler of many things."

Document 3:



Document 4:



Topic 2: Progressive Era Documents

Document 1: Jacob Riis, How the Other Half Lives 1890

The twenty-five cent lodging-house keeps up the pretence of a bedroom, though the head-high partition enclosing a space just large enough to hold a cot and a chair and allow the man room to pull off his clothes is the shallowest of all pretences. The fifteen-cent bed stands boldly forth without screen in a room full of bunks with sheets as yellow and blankets as foul. At the ten-cent level the locker for the sleeper's clothes disappears. There is no longer need of it. The tramp limit is reached, and there is nothing to lock up save, on general principles, the lodger. Usually the ten- and seven-cent lodgings are different grades of the same abomination. Some sort of an apology for a bed, with mattress and blanket, represents the aristocratic purchase of the tramp who, by a lucky stroke of beggary, has exchanged the chance of an empty box or ash-barrel for shelter on the quality floor of one of these "hotels." A strip of canvas, strung between rough timbers, without covering of any kind, does for the couch of the seven-cent lodger who prefers the questionable comfort of a red-hot stove close to his elbow to the revelry of the stale-beer dive. It is not the most secure perch in the world. Uneasy sleepers roll off at intervals, but they have not far to fall to the next tier of bunks, and the commotion that ensues is speedily quieted by the boss and his club. On cold winter nights, when every bunk had its tenant, I have stood in such a lodging-room more than once, and listening to the snoring of the sleepers like the regular strokes of an engine, and the slow creaking of the beams under their restless weight, imagined myself on shipboard and experienced the very real nausea of sea-sickness. The one thing that did not favor the deception was the air; its character could not be mistaken.

The proprietor of one of these seven-cent houses was known to me as a man of reputed wealth and respectability. He "ran" three such establishments and made, it was said, \$8,000 a year clear profit on his investment. He lived in a handsome house quite near to the stylish precincts of Murray Hill, where the nature of his occupation was not suspected. A notice that was posted on the wall of the lodgers' room suggested at least an effort to maintain his up-town standing in the slums. It read: "No swearing or loud talking after nine o'clock." Before nine no exceptions were taken to the natural vulgarity of the place; but that was the limit.

There are no licensed lodging-houses known to me which charge less than seven cents for even such a bed as this canvas strip, though there are unlicensed ones enough where one may sleep on the floor for five cents a spot, or squat in a sheltered hallway for three. The police station lodging-house, where the soft side of a plank is the regulation couch, is next in order. The manner in which this police bed is "made up" is interesting in its simplicity. The loose planks that make the platform are simply turned over, and the job is done, with an occasional coat of whitewash thrown in to sweeten things. I know of only one easier way, but, so far as I am informed, it has never been introduced in this country. It used to be practised, if report spoke truly, in certain old-country towns. The "bed" was represented by clothes-line stretched across the room upon which the sleepers hung by the arm-pits for a penny a night. In the morning the boss woke them up by simply untying the line at one end and letting it go with its load; a labor-saving device certainly, and highly successful in attaining the desired end. . . .

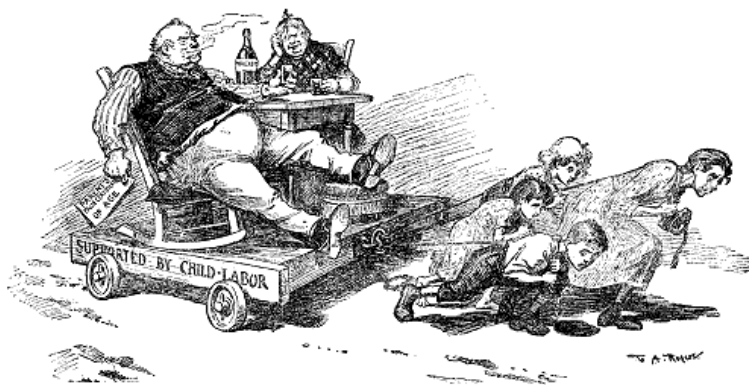
Document 2: Andrew Carnegie, *The Triumph of America*, 1885

The old nations of the earth creep on at a snail's pace; the Republic thunders past with the rush of the express. The United States, the growth of a single century, has already reached the foremost rank among nations, and is destined soon to out-distance all others in the race. In population, in wealth, in annual savings, and in public credit; in freedom from debt, in agriculture, and in manufactures, America already leads the civilized world...

Into the distant future of this giant nation we need not seek to peer; but if we cast a glance forward, as we have done backward, for only fifty years, and assume that in that short interval no serious change will occur, the astounding fact startles us that in 1935, fifty years from now, when many in manhood will still be living, one hundred and eighty millions of English-speaking republicans will exist under one flag and possess more than two hundred and fifty thousand millions of dollars, or fifty thousand millions sterling of national wealth. Eighty years ago the whole of America and Europe did not contain so many people; and, if Europe and America continue their normal growth, it will be little more than another eighty years ere the mighty Republic may boast as many loyal citizens as all the rulers of Europe combined, for before the year 1980 Europe and America will each have a population of about six hundred millions.

The causes which have led to the rapid growth and aggrandizement of this latest addition to the family of nations constitute one of the most interesting problems in the social history of mankind. What has brought about such stupendous results — so unparalleled a development of a nation within so ethnic character of the people, the topographical and climatic conditions under which they developed, and the influence of political institutions founded upon the equality of the citizen.

Document 3:



Document 4:

Appendix B

Question Instruction

The Instructional Video Script

A professor received two emails from two students on the day they missed the course mid-term exam. The students each explained how they were traveling back to campus and got a flat tire. The professor was sympathetic and allows the students to make up the exam, but the last question on the exam was, “What tire did you have to change?”

What this professor was trying to do was check the credibility of the students’ stories for missing the exam. In history, we have to do the same thing, but with historical documents. One historical document doesn’t tell the whole story because there is bias, just as there could be in the students’ stories of the flat tire.

To get the story from the students about the tire, the professor asked them a question. Since we cannot speak to some historical figures of the past, the next closest thing is to ask questions of the document, such as “Why did they write this?” “How was this important to the time period?” When you ask a question about the point of view of the author or the main idea of the text, that is a question that pertains to a single text. This question allows you to better understand that particular text. It does not allow you to analyze the document in the context of the other documents to see patterns or inconsistencies in the historical account.

Again, the purpose of asking a question in history is to be able to find the true story. If we can’t get that story from one document, we must analyze and synthesize the information from multiple documents we read. The question we ask should address the “bigger picture” looking at the patterns and inconsistencies in and between the documents. We shouldn’t stop at the single-text type questions.

Think about writing an essay for class that was graded by the number of terms and ideas covered in class. Would you rather have a prompt such as, “What were the leisure activities of the 1800’s according to XX?” or “How did the developments of the industrial revolution impact the way Americans currently interact with society?”

The second question allows you to add and connect a greater number of ideas across history, using a variety of sources to do so. The first question, on the other hand, is limiting to the topic of leisure and has a predetermined response. This question generates an answer that would just simply recall information from a single text, not necessarily synthesize or evaluate history.

To practice this skill, continue on to the next page to complete a brief activity differentiating these two question types. Then you will be asked to practice writing your own questions from your course readings.

Appendix C

Question Identification Activity

Here are some examples of questions. Select the questions that are *best* suited to synthesize, analyze, and evaluate multiple historical documents at the same time.

1.

What were the various meanings and political agendas of “Social Darwinism”?

Or

What was “Social Darwinism” according to Herbert Spencer?

2.

What were the differing ways in which contemporaries regarded the state of industrializing America, and its place in world affairs?

Or

What were two major causes of the Industrial Revolution in America?

3.

How, according to Jacqueline Jones, did rural blacks of the New South get by amid the hard circumstances they encountered?

Or

How are the South and West more alike than the South and North?

Activity #2

Example Question Frameworks

Below are some generic question frameworks to help guide your understanding of higher-level questions in history. Remember, the purpose is to find patterns and differences in and between documents. When you read through these question examples, consider how you could use your Historical Document Organization Matrix to generate these types of questions.

How do the points of view differ in... and...and what does this mean for (time period)?

How does...affect...?

What are the consistencies and/or the inconsistencies in the documents?

From what lenses can we view this historical event given these accounts?

Generate Questions

Now generate your own questions in order to synthesize, analyze, and evaluate multiple historical documents from your course readings. Avoid the fact based, single document questions discussed in the *Questions in History* instruction section.

Appendix D

Beliefs in History Questionnaire

1. It is fundamental that students are taught to support their reasoning with evidence.
2. History is simply a matter of interpretation.
3. A historical account is the product of a disciplined method of inquiry.
4. Students who read history books learn that the past is what the historian makes it to be.
5. Good students know that history is basically a matter of opinion.
6. Students need to be taught to deal with conflicting information.
7. Historical claims cannot be justified, since they are simply a matter of interpretation.
8. Good general reading and comprehension skills are enough to learn history well.
9. Since there is no way to know what really happened in the past, students can believe whatever story they choose.
10. History is a critical inquiry about the past.
11. The past is what the historian makes it to be.
12. Comparing sources and understanding author perspective are essential components of the process of learning history.
13. It is impossible to know anything for sure about the past, since no one of us was there.
14. Knowledge of the historical method is fundamental for historians and students alike.
15. The facts speak for themselves.
16. Students need to be aware that history is essentially a matter of interpretation.
17. Reasonable accounts can be constructed even in the presence of conflicting evidence.
18. Even eyewitnesses do not always agree with each other, so there is no way to know what happened.
19. Teachers should not question students' historical opinions, only check that they know the facts.
20. History is the reasonable reconstruction of past occurrence based on available evidence.
21. There is no evidence in history.

Appendix E

Need for Cognition Measure

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.
5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.
8. I prefer to think about small, daily projects to long-term ones.
9. I like tasks that require little thought once I've learned them.
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much.
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.
17. It's enough for me that something gets the job done; I don't care how or why it works.
18. I usually end up deliberating about issues even when they do not affect me personally.

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