

Examining interest throughout multiple text use

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Abstract Prior work has examined the role of interest in students' single text processing and comprehension, but interest has been under-examined within the context of multiple text use. This study examines two forms of interest, individual interest and situational interest, in the context of students' completion of a multiple text task. Time on texts and the number of texts students accessed were examined in association with both forms of interest and as mediators of the relation between situational interest and task performance. Situational interest, but not individual interest, was found to be associated with time devoted to text use, a measure of persistence or engagement during task completion. Prior knowledge, situational interest, number of texts used, and time on texts were found to predict performance on a multiple text task. Additionally, qualitative data determined how students explained interest as arising during multiple text task completion. Directions for future research and implications for instruction are introduced.

Keywords Interest · Situational interest · Individual interest · Multiple text use · Multiple text comprehension · Motivation

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Introduction

Interest has long been examined as a motivational variable impacting students' interactions with text (Anderson, 1982; Hidi & Baird, 1986; Hidi, Renninger, & Krapp, 2004; Kintsch, 1980a, b). In fact, interest has been found to be associated with both process and product measures of text use, including reading time (Anderson, 1982; McDaniel, Waddill, Finstad, & Bourg, 2000) and strategy engagement (Krapp, 1999; Schiefele, 1999; Schiefele & Krapp, 1996), as well as with text recall (Hidi & Baird, 1988; Schiefele & Krapp, 1996) and comprehension (Alexander & Jetton, 1996; Hidi, 2001; Krapp, 1999; Schiefele, 1999).

Recently, researchers examining how students use and integrate multiple sources of information to learn about complex topics have suggested that interest may be particularly important in supporting multiple, rather than single, text use (List & Alexander, 2017; Bråten, Anmarkrud, Brandmo, & Strømsø, 2014; Bråten & Strømsø, 2006; Stenseth, Bråten, & Strømsø, 2016; Strømsø, Bråten, & Britt, 2010). For instance, given that multiple text use has been identified as a complex, cognitively demanding process (Rouet, 2006), interest has been proposed as a factor easing cognitive load during multiple text task completion, by increasing students' cognitive absorption (Dias, Gomes, & Correia, 1999; Kang & Kim, 2006; Niederhauser, Reynolds, Salmen, & Skolmoski, 2000; Saadé & Bahil, 2005). More generally, interest may be considered a motivational resource that learners can draw on when they experience challenge during multiple text task completion (Hidi, 1990; Thoman, Smith, & Silvia, 2011), simultaneously counteracting any possible negative affect (e.g., frustration) associated with working on a difficult task (Durik & Matarazzo, 2009; Fulmer & Frijters, 2011).

Despite its theorized importance, the role of interest in multiple text use has been examined only to a limited extent. Additionally, the role of the two interest types (i.e., *situational* and *individual* interest, Hidi, 1990; Hidi & Renninger, 2006), disambiguated in research on interest as a motivational factor, requires further investigation within the context of multiple text use.

The purpose of the present study is to examine the role of situational interest and individual interest in students' multiple text task completion. In part, a qualitative approach is adopted to determine how students explain interest arising during multiple text use. Moreover, we consider the extent to which both types of interest (i.e., situational and individual) may be associated with behavioral measures of text use (e.g., time on texts) and task performance.

Defining interest

Interest, as a motivational variable, has been defined as a “psychological state of engaging or the predisposition to reengage with” particular content (Hidi & Renninger, 2006, p. 112). Two types of interest have been identified in the literature: *situational interest* and *individual interest* (Krapp, Hidi, & Renninger, 1992). Situational interest has been defined as a *spark* (Guthrie, Hoa, Wigfield, Tonks, &

Perencevich, 2006) or an externally triggered state, characterized by students' affective or emotional and attentional responses to an environmental stimulus (Hidi et al., 2004; Krapp, 1999; Schiefele, 1991). As a contrast, *individual interest* has been defined as an internally driven, enduring, positive disposition toward a topic or activity that is sustained over time (Hidi et al., 2004; Krapp, 1999; Schiefele, 1991). Within the context of learning from text, sub-types of the two aforementioned interest forms (i.e., situational and individual) have been examined and termed *topic interest* (i.e., individual interest in text domain or subject-area, Ainley, Hidi, & Berndorff, 1999) and *text-based interest* or *text interestingness* (i.e., situational interest triggered by the interestingness of text features, Schiefele, 1999).

Interest and performance

Across investigations of both topic and text-based interest, a number of mediating variables have been proposed whereby interest may impact text-based task performance, resulting in improved text recall and comprehension. Ainley, Hidi, and Berndorff (2002a) have been among the few to explicitly model mediators of the relation between interest and task performance. Specifically, they suggest that interest results in positive emotional affect, which in turn results in persistence, expressed via time on texts, and ultimately in improved performance. Spending more time on texts may result in students gathering more, potentially task relevant, information (Ainley et al., 2002a) or in students using more deep-level, time-demanding comprehension strategies, such as note-taking or information organization (Krapp, 1999; Schiefele, 1991, 1999; Schiefele & Krapp, 1996).

Interest in multiple text use

While interest has long been examined within the context of single text processing, more recently, researchers have speculated that interest may play a unique role in supporting multiple text use, or students' comprehension and integration of multiple textual sources to learn about complex topics (List & Alexander, 2017, 2018; Gil, Bråten, Vidal-Abarca, & Strømsø, 2010; Stenseth et al., 2016; Strømsø et al., 2010). Within the context of multiple text use, interest may be considered to play a role at two levels. First, interest may support the processing and comprehension of individual texts within a document set (Ainley et al., 2002a; Hidi, 1990; Krapp, 1999; Schiefele, 1991; McDaniel et al., 2000), resulting in improved performance when students are then asked to integrate information presented across texts during multiple text task completion. Second, interest may contribute specifically to cross-document comprehension and integration in a number of ways. For one, Britt, Rouet, and Braasch (2013a, b) suggest that a unique feature of multiple text use is that it demands that students contend with a greater volume of information than does single text processing; indeed, multiple text contexts arise in situations where a single source of information may be expected to be insufficient to present all of the information necessary to understand a given topic. As such, the association between

interest and persistence documented during single text processing (Ainsley et al., 2002a) may be all the more salient within multiple text contexts. In particular, students' willingness to be more persistent (i.e., spend more time accessing information) during multiple text use may mean that they can take advantage of more information presented across texts, allowing for more cross-textual connections to be formed. For another, the association between interest and deep-level strategy use (e.g., elaboration, information organization, Krapp, 1999; Schiefele, 1991) may serve not only to facilitate single text comprehension, but multiple text comprehension and integration as well. For example, interest has been associated with a focus on the macrostructure of text and with the improved recall of the structural features of single texts (Garner & Gillingham, 1991; Kintsch, 1980a, b; McDaniel et al., 2000). This attendance to the structure of single texts may be particularly facilitative for multiple text integration, as this cross-textual process may benefit from learners being better able to identify points at which text structures coincide or diverge with one another to effectively link content across texts (Britt, Perfetti, Sandak, & Rouet, 1999). As such, interest, in facilitating attendance to the structural elements of single texts, may likewise support students' formation of connections between texts, necessary for multiple text integration.

Modeling the role of interest in multiple text use

Although investigations of interest in a multiple text context have been limited, Bråten et al. (2014) did conduct a unique study examining the direct and indirect effects of both situational and individual interest on multiple text task performance. Individual interest was examined as an individual difference variable while situational interest was considered to be a process variable, engaged during text use. Neither form of interest had a direct effect on multiple text comprehension. However, individual interest was associated with situational interest and effort (i.e., time on task), while situational interest was associated with students' reports of deep-level strategy use during task completion, which in turn had an effect on multiple text comprehension. While these findings seem consistent with previously proposed mechanisms of interest affecting text-based task performance (Ainsley et al., 2002a), more work is needed to understand the dual effects of individual and situational interest on process (e.g., time on task) measures of multiple text use and their joint impact on performance.

Present study

The present study contributes to the literature on interest in multiple text use by examining a model of the effects of individual and situational interest on measures of task persistence and performance. Specifically, two behavioral measures of persistence or engagement were considered in this study—number of texts students accessed and the time students devoted to text use. While the amount of time students devoted to text use was considered to be a direct measure of persistence, the number of texts students accessed was also expected to reflect strategy use. The

number of texts accessed reflected not only students' initial visits to sources but also text revisits. Revisiting texts, or accessing a greater number of texts multiple times, was considered to be a behavioral measure of deep-level strategy use, reflecting the corroboration and verification of information across texts (Salmerón, Naumann, Garcia, & Fajardo, 2017; Wiley et al., 2009). This metric was derived based on the literature on hypertext navigation where revisits have been identified as a key log-based indicator of strategy use. For instance, Lawless and Brown (1997) describe revisits as an indicator of students' engagement in *connecting* processes thus: *toggling back and forth between informational segments permits the reader to compare and contrast information to discover linkages* (p. 124). Engagement in such connecting processes, or the discovery of new associations not already existing, may also be considered to be central to multiple text integration. Indeed, revisiting texts has been found to be a key differentiator of high and low performing students on a multiple text task (Goldman et al., 2012).

While some prior work has examined students' text revisits to trustworthy versus untrustworthy texts, in this study we examined the total number of texts that students accessed as a global measure of revisits. A variety of indicators can be computed based on students' text revisits. These include the total number of texts that student accessed, including revisits, the number of texts that students revisited, the proportion of texts accessed that were revisited, and a binary indicator reflecting whether or not students revisited any texts during processing. Exploratory data analyses determined that results using these various metrics were largely consistent with one another. Nevertheless, the total number of texts accessed, including revisits, was adopted as the metric of choice in this study for two primary reasons. First, we believed this metric to most comprehensively captured the full nature of students' text access, reflecting both persistence, through the total number of texts visited, and strategy use, via those texts that were accessed more than once. Second, considering the relatively limited number of texts that most students revisited, we believed this metric would provide us with the greatest degree of variation, allowing for a more robust comparison of student performance.

Interest and persistence were examined as contributors to performance, including the number of arguments and evidentiary justifications in students' responses, students' overall response quality, as assessed by SOLO scores (Biggs & Collis, 1982), and the number of citations in students' writing. Ainley et al. (2002a) documented a strong association between interest and persistence in single text processing. We believe this association to also be present and all the more important in multiple text contexts. As such, we consider persistence to be the behavioral manifestation of interest, a motivational factor, and therefore to mediate the relation between interest and multiple text task performance.

Like Bråten et al. (2014) we consider the role of situational and individual interest in multiple text use. Nevertheless, we build off of this earlier work in at least three ways. First, we examine two distinct, behavioral metrics of persistence (i.e., time on texts and total texts accessed). Second, we examine the association between situational and individual interest and a host of diverse outcome variables, including the number of text-based arguments in students' responses and response quality. Third, to better understand the role of interest in multiple text use, we add a

qualitative dimension to analyses of interest by asking students to attribute their interest in task completion to particular targets (e.g., the task, the texts available); these results are presented descriptively. The following research questions were explored:

1. What is the nature of the relation between students' individual interest in the topic of a multiple text task and ratings of situational, text-based interest during task completion?

Based on prior research examining the associations between students' situational and individual interest we expect these constructs to be related, albeit to a limited extent. Specifically, we expected students with high levels of individual interest in political and world affairs to also report high levels of situational interest, as elicited by specific texts on this topic. At the same time, we expected that even absent a strong degree of individual interest, the topic of the texts would elicit situational interest from students, at least to some extent.

2. What is the nature of the association between students' individual and situational interest and persistence during multiple text task completion (i.e., number of texts accessed, time on texts)?

Considering prior work on the role of interest in single text processing (e.g., Ainley et al., 2002a), we expected to identify a positive relation between both situational interest and individual interest and measures of persistence during multiple text use (i.e., number of texts, time on texts).

3. To what extent were students' individual and situational interest and measures of task persistence associated with performance on a multiple text task?

We expected situational interest, individual interest, and persistence to all be positively associated with multiple text task performance.

4. How do students explain or attribute interest arising during multiple text task completion?

For this exploratory question, we expected students to attribute interest to topic, text-based, and task-related factors, jointly comprising situational interest arising during multiple text use.

Methods

Participants

The sample consisted of 197 undergraduates (age: $M = 20.47$; $SD = 2.08$) from a large Mid-Atlantic University. Females comprised a majority of the sample (females: $n = 129$, 65.48%; males: $n = 59$, 29.95%). The participants reported a wide variety of racial/ethnic backgrounds: 49.23% were White ($n = 97$), 19.29%

Asian ($n = 38$), 16.24% African American ($n = 32$), 3.55% Latino ($n = 7$), and 6.09% reported biracial or multiracial status ($n = 12$). Nine students did not report demographic information.

Data for this study were drawn from a larger investigation of students' source evaluation in online contexts; however, research questions are uniquely explored in these analyses.

Multiple text task

The multiple text task included a *research phase*, where students researched the target prompt using a library of six digital texts, as well as a *response phase*, where students composed a written response.

Research phase

During the research phase, participants were provided with a library of six texts, varying in document type (i.e., an analysis essay, blog post, newspaper article, public opinion poll, Twitter, and Wikipedia) and in their positions with regard to the topic of the task, the Arab Spring in Egypt. Despite this variability, all of the texts provided information that was relevant to the target prompt and included content potentially useful for response composition. Information about each text is summarized in Table 1.

Participants were asked to use the library of texts to research the prompt: *Should the United States support General el-Sisi and the military regime or Mohamed Morsi and the Muslim Brotherhood?* Students were able to access any or all of the texts provided, in any order. There was no time limit for the task. During the research phase log data were recorded reflecting the number of texts that students accessed and duration of text access.

Total texts accessed The number of texts accessed was a metric reflecting the total number of texts students visited, including revisits.

Time on texts Time on texts was a measure of the total time that students devoted to text access.

Response phase and coding

During the response phase, students were first asked to adopt a position with regard to the prompt (i.e., in favor of Morsi, el Sisi, or another option) and then to justify their position based on information gathered during the research phase. Responses were coded for the *number of arguments* and the *number of evidentiary justifications* included.

Arguments and evidentiary justifications Arguments referred to the number of unique claims and justifications in students' responses. Evidentiary justifications were typically text-based examples, evidence, and explanations students forwarded in support of particular arguments introduced. As a note, evidentiary justifications referred to evidence and examples that were typically text-based and provided information beyond that necessary for the justification of claims. As such,

Table 1 Document information for texts in the multiple source use task

Title	Document type	Author/editor	Credentials	Publisher	Date	Location of publication	Parent URL	Reading level	Word count	Position
El Sisi's Islamist Agenda For Egypt: The General's Radical Political Vision	Analysis Essay	Robert Springborg	Professor of national security affairs at the Naval Postgraduate School	Council on Foreign Relations	July 28, 2013	Washington, DC	https://www.foreignaffairs.com/articles/	36.7/13.4	497	Critiques El Sisi
A Message to the Muslim Brotherhood: Enough Blood, Enough Lies	Blog Post	The Idealist	I am just Egyptian girl who lives in the present with the glories of the past and hopes in a better future for herself and for her country	Wordpress	Posted July 27, 2013	Alexandria, Egypt	https://thedealist1.wordpress.com/	53.1/9.6	399	Pro El Sisi
Egypt Arrests 11 Islamists for Facebook Activity	Newspaper Article	Maggie Michael	Associated Press Senior Reporter, Cairo Bureau	Associated Press	January 30, 2014	Cairo, Egypt	http://bigstory.ap.org/	36/13.1	489	Balanced
Egyptian Attitudes	Public Opinion Survey	Dr. James Zogby and associates	Dr. James Zogby is founder and president of the Arab American Institute, a Washington, D.C. based organization, that serves as the political and policy research arm of the Arab American community	Zogby Research Services for Arab American Institute	September, 2013	Abu Dhabi, United Arab Emirates	www.zogbyresearchservices.com/egyptian-attitudes-2013/	44.2/13.8	446	Critiques Muslim Brotherhood and Morsi

Table 1 continued

Title	Document type	Author/editor	Credentials	Publisher	Date	Location of publication	Parent URL	Reading level	Word count	Position
N/A	Twitter	@Ikhwanweb	Official English language Twitter account of the Muslim Brotherhood	Twitter	February 14–February 17, 2014	London, UK	https://twitter.com/Ikhwanweb	34.4/11.9	352	Pro Morsi
2013 Egyptian coup d'état	Wikipedia Entry	Omar Othman 95, Greyshark09, and Alhanuty	Omar Othman, an Egyptian high school student from Cairo. GreyShark09: This user has created 182 articles. This user is Mediterranean. Alhanuty: This user was born and lives in the United States. This user is of Egyptian ancestry. This user is a member of WikiProject Egypt	Wikipedia	Current version modified: February 19, 2014	N/A	http://en.wikipedia.org/	33.8/13.5	491	Balanced

evidentiary justifications had to be associated with particular arguments, but constituted expansions on the claims and evidence these included. For example, an argument included a student's claim that: *After reading through these sources, I have decided that the United States should support General el Sisi and the military regime in power in Egypt*; and associated justification: *The Muslim Brotherhood members appear to start violent protests and will resort to any measure necessary to obtain their desired goal, according to the blog post*. However, an additional evidentiary justification provided in support of this claim included: *The newspaper claimed that the Brotherhood has retaliated against the killing and jailing of Brotherhood members by targeting police members in drive by shootings and bombings*. Based on 49 participant responses (24.87% of the sample), the average intraclass correlation coefficient for the number of arguments in students' responses was 0.75, indicating excellent agreement. The intraclass correlation for the number of evidentiary justifications in students' responses was 0.74, indicating good agreement. All disagreements between raters were resolved through discussion.

SOLO taxonomy Additionally, responses were coded holistically according to the SOLO taxonomy by Biggs and Collis (1982). Specifically, participants' responses were scored on a scale from zero to five. A response scored as zero corresponded to participants not including any relevant information in their answer; a one corresponded to participants including a single relevant argument; a two reflected multiple, response-relevant arguments included; a three represented the inclusion of multiple relevant arguments in a response that were also integrated or internally coherent. However, responses scored as threes only considered one side of the issue, exclusively building a case supporting either Morsi or General El Sisi. As such, a four corresponded to responses considering both sides of the Arab Spring conflict, but not comparing or evaluating the relative merits of Morsi or General El Sisi. Finally, a five, or the highest score students could receive, corresponded to a response that included multiple relevant arguments, that were integrated or internally coherent, and evaluative in nature, considering the strengths and limitations of both leaders vying for power or the relative trustworthiness of library sources. An independent rater scored 40 student responses (20.30%). Cohen's kappa inter-rater reliability was 0.79, indicating strong agreement (exact agreement: 82.50%).

Citation As a final response metric, the total number of sources uniquely cited in students' responses was totaled. Citations included any direct references to sources by author or document type (e.g., Springborg or the analysis essay). In this study, citations were considered to most directly assess the degree to which text-based evidence was included in participants' responses and referenced using standard conventions of academic writing. Elsewhere, citation use has been used as a metric of multiple text integration, reflecting students' cognitive representation of information as associated with its source of origin (Braasch, McCabe, & Daniel, 2016; Britt & Aglinskias, 2002; Strømsø, Bråten, Britt, & Ferguson, 2013). Both raters scored all students' responses ($n = 197$). The average intraclass correlation coefficient for the number of unique sources cited in participants' responses was 0.98, indicating excellent agreement.

Measures

Prior knowledge

Prior knowledge was used as a control variable and assessed via a 7-item term identification measure. Specifically, students were asked to “*Please tell me about*” each of seven terms, representing key people (i.e., el Sisi, Morsi, Mubarak), places (i.e., Tahrir Square), and terms (i.e., Arab Spring, Muslim Brotherhood, Tamarod) associated with the Arab Spring Egypt. Each term identification was binary scored as correct or incorrect, with prior knowledge scores potentially ranging from 0 to 7. Reliability for the measure was $\alpha = 0.91$.

Individual interest

Individual interest was assessed prior to students completing the multiple text task. Specifically, participants were asked to rate their level of interest in five domains, within which the topic of target task was nested: *politics, the Middle East, current events, international relations, and U.S. foreign policy*. As such, this measure captured topic interest, or students’ individual interest in the domain or subject area of the task (Ainley et al., 1999). Interest was rated on a five-point scale ranging from *not at all interested* to *very interested*. Scale reliability for the five domain interest items was $\alpha = 0.89$.

Situational interest

During the multiple text task, situational interest was assessed as students accessed each text in the digital library. Specifically, after students accessed a library text, they were asked to rate the text according to a variety of dimensions, including *interestingness*, before they were able to return to the library. Situational interest was rated on a 100 mm line, ranging from *not at all interesting* to *very interesting*. Students’ ratings of the interestingness of each text accessed were averaged as a measure of overall situational interest.

As participants rated the interestingness of each text they elected to access, each student rendered between zero and six interestingness ratings, which were averaged. As expected, there was some variability in students’ ratings of the interestingness of library texts, $\alpha = 0.65$. Nevertheless, an averaged measure of students’ ratings of texts’ interestingness was considered to be appropriate to use as a metric reflecting students’ overall level of interest during text access and to be preferable to a single item measure. Moreover, using an average of all interestingness ratings allowed us to retain all participants in the sample, even those not accessing all six of the texts available in the digital library. No significant differences in average interestingness ratings was found between students accessing all six texts during multiple text use or not, $p = 0.25$.

Task interest and coding

After the multiple text task, students completed a post-task survey which included the question: *How interesting was this task?* Participants rated post-task interest on a five-point scale from *not at all interesting* to *very interesting*. Participants were then asked to justify their ratings of task interestingness. Each distinct justification participants forwarded was coded through a two-step process. First, an initial *semantic* coding was used to place participant justifications into one of 22 possible categories according to the specific language or terms participants used in explaining their ratings of task interest. Second, each of the identified semantic categories was collapsed into one of seven general justification categories. The referent that students used (i.e., the object that students referred to as triggering their interest) was used as a mechanism to determine the placement of particular interest explanations into the categories identified. Inter-rater reliability was determined based on two raters coding 18.78% of student responses ($n = 37$). Cohen's kappa was 0.91, indicating very good agreement. The categories for students' justifications of task interest are explained in Table 2.

Results

Overview

Research Question 1 used correlation to determine the association between individual interest and students' ratings of each texts' interestingness. Research Question 2 examined the correlation between measures of persistence (i.e., time on texts, total texts accessed) and situational interest and individual interest. Research Question 3 used individual interest, situational interest, and both measures of persistence to predict each outcome variable examined (i.e., number of arguments, number of evidentiary justifications, SOLO scores, citations). This research question was answered using hierarchical multiple regression. Additionally, a mediation model was run examining the extent to which time on texts mediated the relation between situational interest and each focal outcome variable. Research Question 4 adopts a qualitative approach to examine how students explained their own interest in multiple text task completion. Descriptives for key variables are presented in Table 3.

Research Question 1: association between situational interest and individual interest

The first research question examined the association between students' individual interest and situational interest, as rated during text engagement. Correlation analysis determined that there was a significant association between individual interest and average ratings of situational interest, as rated during text use [$r(186) = 0.28, p < 0.001$], corresponding to a moderate effect size. Additionally, individual interest was significantly associated with students' ratings of individual

Table 2 Coding scheme and examples of coded statements

Category	Description	Examples	N	%
Learning experience	Justifications in this category described interest as emerging from learning something new and acknowledged a lack of prior knowledge	<p>“I enjoyed learning about a topic I previously had no knowledge about”</p> <p>“I do not know much about politics in this area of the world and now think I am more informed”</p>	78	21.55
Topic	Justifications in this category expressed specific interest in this topic or considerations of its importance	<p>“It was interesting to take a look at a current events topic that I might not otherwise have looked into”</p> <p>“The topic was interesting and important so it was not bad at all”</p>	77	21.27
Task	Justifications in this category described the task as generally interesting or mentioned specific elements of the task as generating interest (e.g., research, writing)	<p>“I love doing research online, hence I found this rather interesting”</p> <p>“I enjoyed this research assignment and making a decision on the party I would choose”</p>	60	16.57
Prior experience	Justifications in this category explained their task interest as arising from their prior knowledge of or existing individual interest in the topic	<p>“I... have a background in International Policy”</p> <p>“I am interested in current events and the Middle East...”</p>	46	12.71
Multiple source use	Justifications in this category mentioned interest as arising from the opportunity to consider multiple viewpoints or to compare multiple texts in generating a response (i.e., cited components specific to multiple text use)	<p>“I enjoy the challenge of...trying to compare sources and see which is better and more reputable”</p> <p>“The task was very interesting because you had to go through all the different resources to check out the story”</p> <p>“You had to choose with source was best to discover the information”</p>	31	8.56
Comprehension difficulties	Justifications in this category expressed difficulty understanding the topic or task or a complaint about the length or number of sources	<p>“...some material was difficult to understand”</p> <p>“...it was kind of hard...”</p> <p>“...it seemed...hard to grasp”</p>	28	7.73
Situational interest	Justifications in this category cited interest as arising from specific texts or described the task as engaging	<p>“...the newspaper article was most interesting to me”</p> <p>“The statistics from the Egyptian citizens were very interesting...”</p>	25	6.91

Table 3 Descriptives for key variables

Variable	Mean	SD	Range
1. Knowledge	2.32	2.61	0–7
2. Individual interest	2.86	0.99	1–5
3. Situational interest	58.99	17.09	2–93.33
4. Total texts accessed	5.23	1.90	1–11
5. Time on texts	15.70 min	9.08 min	0.17–78.46 min
6. Number of arguments	1.96	1.39	0–9
7. Number of evidentiary justifications	6.72	4.81	0–28
8. SOLO scores	3.00	1.31	0–5
9. Citations	1.17	1.29	0–5

texts in the library. Specifically, individual interest was significantly associated with students' ratings of the interestingness of the essay [$r(149) = 0.23, p < 0.01$], the public opinion poll [$r(151) = 0.30, p < 0.001$], Twitter [$r(145) = 0.23, p < 0.01$], and Wikipedia [$r(146) = 0.23, p < 0.01$], corresponding to small-medium effect. However, there was no significant relation between individual interest and students' ratings of the interestingness of the blog post ($p = 0.84$) or the newspaper ($p = 0.93$). Descriptives for students' ratings of text interestingness are presented in Table 4. Table 5 displays the correlations among students' interest ratings across document types.

Table 4 Descriptives of interest ratings by document type

Source type	Percent accessed (unique)	Percent revisiting	Situational interest
Blog post	61.42% ($n = 121$)	7.44% ($n = 9$)	$M = 60.28$ $SD = 27.23$
Analysis essay	79.19% ($n = 156$)	12.18% ($n = 19$)	$M = 60.32$ $SD = 26.41$
Newspaper article	94.42% ($n = 186$)	15.59% ($n = 29$)	$M = 62.63$ $SD = 24.56$
Public opinion poll	79.19% ($n = 156$)	8.33% ($n = 13$)	$M = 55.33$ $SD = 28.58$
Twitter	76.65% ($n = 151$)	3.97% ($n = 6$)	$M = 57.86$ $SD = 28.44$
Wikipedia	76.65% ($n = 151$)	7.95% ($n = 12$)	$M = 59.42$ $SD = 26.23$
Average			$M = 58.99$ $SD = 17.09$

Table 5 Correlation among ratings of text interestingness by document type

Variable	1.	2.	3.	4.	5.	6.	7.
1. Individual interest	1.00						
2. Blog interestingness	0.01	1.00					
3. Essay interestingness	0.23**	0.14	1.00				
4. Newspaper interestingness	0.13	- 0.02	0.38***	1.00			
5. Public opinion interestingness	0.30***	0.29**	0.35***	0.35***	1.00		
6. Twitter interestingness	0.23**	0.16	0.09	0.10	0.13	1.00	
7. Wikipedia interestingness	0.23**	0.11	0.34***	0.40***	0.54***	0.13	1.00

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Research Question 2: interest and persistence

For Research Question 2, individual interest and situational interest were examined in association with two measures of persistence—the total number of texts accessed and time on texts. However, individual interest was not significantly related to the total amount of time students devoted to text use ($p = 0.90$) nor to the number of texts students accessed ($p = 0.13$). Moreover, correlation analysis determined that situational interest was not significantly associated with the total number of texts students accessed ($p = 0.22$). However, there was a significant association between situational interest and the total time students devoted to text use, across all texts accessed [$r(194) = 0.19$, $p < 0.01$], corresponding to a small-medium effect size. Correlations among key variables are presented in Table 6.

Research Question 3: interest, persistence, and response quality

The third research question examined the extent to which measures of interest and persistence or engagement were predictive of response quality. Four hierarchical linear regressions were run, with (a) the number of arguments, (b) the number of evidentiary justifications included in students' responses, (c) SOLO scores, and (d) the number of citations as dependent variables. All variables were standardized and tolerance and variance inflation factor (VIF) indices were examined to ensure that the assumption of multicollinearity was met (tolerance > 0.77 ; VIF < 1.31).

Number of arguments

To predict the number of arguments in students' responses, prior knowledge was controlled for in Step 1. Then, individual interest was entered in Step 2, situational interest was entered in Step 3, and measures of persistence or engagement (i.e., total number of texts accessed, time on texts) were entered in Step 4. The full model was significant [$F(5, 180) = 3.64$, $p < 0.01$, $R^2_{\text{adj}} = 0.07$], corresponding to a small-medium effect size. However, situational interest was the only significant predictor in the model. A model summary is included in Table 7.

Table 6 Correlation among key variables

Variable	1.	2.	3.	4.	5.	6.	7.	8.
1. Knowledge	1.00							
2. Individual interest	0.4***	1.00						
3. Situational interest	0.16*	0.28***	1.00					
4. Total texts accessed	0.00	0.11	0.09	1.00				
5. Time on texts	- 0.03	- 0.01	0.19**	0.43***	1.00			
6. Number of arguments	0.12	- 0.01	0.21**	0.19**	0.18*	1.00		
7. No. of evidentiary justifications	0.19**	0.08	0.26***	0.25***	0.30***	0.72***	1.00	
8. SOLO scores	0.17*	- 0.05	0.19**	0.13	0.29***	0.68***	0.75***	1.00
9. Citations	0.08	=0.06	0.15*	0.20**	0.18*	0.50***	0.47***	0.44***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 7 Predicting number of arguments

	<i>B</i>	<i>SE (B)</i>	β	<i>p</i>	Partial correlation	ΔR^2
<i>Step 1</i>						
Knowledge	0.11	0.07	0.11	0.14	0.11	
<i>Step 2</i>						
Knowledge	0.14	0.08	0.14	0.09	0.13	0.00
Individual interest	- 0.07	0.08	- 0.07	0.38	- 0.06	
<i>Step 3</i>						
Knowledge	0.13	0.08	0.13	0.11	0.11	0.04**
Individual interest	- 0.13	0.08	- 0.13	0.12	- 0.11	
Situational interest	0.22	0.08	0.22	0.00**	0.21	
<i>Step 4</i>						
Knowledge	0.14	0.08	0.14	0.08	0.13	0.03*
Individual interest	- 0.14	0.08	- 0.14	0.09	- 0.12	
Situational interest	0.20	0.08	0.20	0.01*	0.18	
Total texts accessed	0.14	0.08	0.14	0.09	0.12	
Time on texts	0.08	0.08	0.08	0.33	0.07	

$F(5, 180) = 3.64, p < 0.01, R^2_{\text{adj}} = 0.07$

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

All variables standardized

Number of evidentiary justifications

The model predicting the number of evidentiary justifications included in students' responses was significant [$F(5, 180) = 7.81, p < 0.001, R_{adj}^2 = 0.16$], corresponding to a medium effect size. In addition to prior knowledge, situational interest, time on texts, and the total number of texts accessed were significant predictors in the model. Table 8 includes a model summary.

SOLO scores

A third model was run predicting students' SOLO scores, based on prior knowledge (Step 1), individual interest, situational interest, and measures of persistence (i.e., time on texts; total texts accessed). The model was overall significant, $F(5, 180) = 6.10, p < 0.001, R_{adj}^2 = 0.12$. All of the variables entered at Step 4, except for the total number of texts accessed, were significant predictors in the model. These included prior knowledge, individual interest, situational interest, and the total time devoted to text access. A model summary is included in Table 9.

Citations

A final hierarchical regression model was run predicting the total number of sources cited in participants' responses. This model was also significant, $F(5, 180) = 3.56,$

Table 8 Predicting number of evidentiary justifications

	<i>B</i>	<i>SE (B)</i>	β	<i>p</i>	Partial correlation	ΔR^2
<i>Step 1</i>						
Knowledge	0.19	0.07	0.19	0.01*	0.19	
<i>Step 2</i>						
Knowledge	0.19	0.08	0.19	0.02*	0.17	0.00
Individual interest	0.00	0.08	0.00	0.98	0.00	
<i>Step 3</i>						
Knowledge	0.17	0.08	0.17	0.03*	0.16	0.06***
Individual interest	-0.06	0.08	-0.06	0.43	-0.06	
Situational interest	0.25	0.07	0.25	0.00***	0.24	
<i>Step 4</i>						
Knowledge	0.19	0.08	0.19	0.01*	0.17	0.09***
Individual interest	-0.08	0.08	-0.08	0.32	-0.07	
Situational interest	0.21	0.07	0.20	0.01**	0.19	
Total texts accessed	0.19	0.08	0.18	0.02*	0.16	
Time on texts	0.18	0.08	0.18	0.02*	0.16	

$F(5, 180) = 7.81, p < 0.001, R_{adj}^2 = 0.16$

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

All variables standardized

Table 9 Predicting SOLO scores

	<i>B</i>	<i>SE (B)</i>	β	<i>p</i>	Partial correlation	ΔR^2
<i>Step 1</i>						
Knowledge	0.16	0.07	0.16	0.02*	0.16	
<i>Step 2</i>						
Knowledge	0.22	0.08	0.22	0.00**	0.20	0.02
Individual interest	- 0.15	0.08	- 0.15	0.08	- 0.14	
<i>Step 3</i>						
Knowledge	0.21	0.08	0.21	0.01**	0.20	0.04**
Individual interest	- 0.20	0.08	- 0.20	0.01*	- 0.18	
Situational interest	0.20	0.07	0.20	0.00**	0.19	
<i>Step 4</i>						
Knowledge	0.22	0.08	0.23	0.00**	0.22	0.07***
Individual interest	- 0.19	0.08	- 0.19	0.02*	- 0.18	
Situational interest	0.15	0.07	0.15	0.05*	0.15	
Total texts accessed	0.03	0.08	0.03	0.73	0.03	
Time on texts	0.25	0.08	0.25	0.00**	0.23	

$F(5, 180) = 6.10, p < 0.001, R^2_{\text{adj}} = 0.12$

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

All variables standardized

$p < 0.01, R^2_{\text{adj}} = 0.07$. At Step 4, the two significant predictors were students' individual interest in the topic and the total number of texts accessed. This model is summarized in Table 10.

Alternate models For each of the target outcome variable (i.e., number of arguments, evidentiary justifications, and citations included in students' responses as well as SOLO scores), alternate models were also run, including an interaction term between individual interest and situational interest. However, in all of these cases, while the models were significant overall, the interaction term included was not significant. This was the case for the model predicting the number of arguments [full model: $F(6, 179) = 3.07, p < 0.01, R^2_{\text{adj}} = 0.06$, interest interaction: $p = 0.62$]; the number of evidentiary justifications [full model: $F(6, 179) = 5.14, p < 0.001, R^2_{\text{adj}} = 0.12$, interest interaction: $p = 0.50$]; SOLO scores: [full model: $F(6, 179) = 5.36, p < 0.001, R^2_{\text{adj}} = 0.13$, interest interaction: $p = 0.61$]; and the number of citations [full model: $F(6, 179) = 2.95, p < 0.01, R^2_{\text{adj}} = 0.06$, interest interaction: $p = 0.88$] in students' responses.

Mediation analysis

Building from these hierarchical regressions models, mediation analyses were run. Specifically, we examined the relation between situational interest and each outcome variable of interest, as mediated by time on texts, as a measure of

Table 10 Predicting number of citations

	<i>B</i>	<i>SE</i> (<i>B</i>)	β	<i>p</i>	Partial correlation	ΔR^2
<i>Step 1</i>						
Knowledge	0.07	0.07	0.07	0.37	0.07	
<i>Step 2</i>						
Knowledge	0.11	0.08	0.11	0.17	0.10	0.01
Individual interest	- 0.11	0.08	- 0.11	0.17	- 0.10	
<i>Step 3</i>						
Knowledge	0.10	0.08	0.10	0.20	0.09	0.03*
Individual interest	- 0.15	0.08	- 0.16	0.06	- 0.14	
Situational interest	0.17	0.08	0.17	0.03*	0.16	
<i>Step 4</i>						
Knowledge	0.12	0.08	0.12	0.13	0.11	0.05**
Individual interest	- 0.17	0.08	- 0.18	0.03*	- 0.16	
Situational interest	0.14	0.08	0.14	0.06	0.13	
Total texts accessed	0.20	0.08	0.19	0.02*	0.17	
Time on texts	0.08	0.08	0.07	0.36	0.07	

$F(5, 180) = 3.56, p < 0.01, R_{adj}^2 = 0.07$

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

All variables standardized

persistence. This model was developed based on work by Ainley et al. (1999a) on single text processing, suggesting that the relation between interest and performance is moderated by persistence, operationalized as time on texts. Baron and Kenny's (1986) four step approach to mediation was adopted. Specifically, the direct path between situational interest and each target outcome was first established (arguments: $\beta = 0.21, p < 0.01$; evidentiary justifications: $\beta = 0.26, p < 0.001$; SOLO: $\beta = 0.19, p = 0.01$; citations: $\beta = 0.15, p < 0.05$). Then, the association between situational interest and time on texts was determined to be significant ($\beta = 0.18, p < 0.01$); followed by establishing the relation between each outcome variable and time on texts, the mediator (arguments: $\beta = 0.18, p = 0.01$; evidentiary justifications: $\beta = 0.30, p < 0.001$; SOLO: $\beta = 0.29, p < 0.001$; citations: $\beta = 0.18, p = 0.01$). Given that the necessary theoretical conditions were met, mediation analyses for each outcome variable were run using the sem function in the lavaan package for R (Rosseel, 2012). Maximum likelihood estimation was used and standard errors were bootstrapped based on a 1000 cases.

Number of arguments First the number of arguments in participants' responses was modeled based on situational interest and as mediated through time on texts. The total effects in the model, including both direct and indirect effects were found to be significant [$\beta = 0.21, SE(\beta) = 0.02, p < 0.01$]. Situational interest was found to significantly predict time on texts [$\beta = 0.19, SE(\beta) = 0.06, p = 0.001$]. Moreover, there was a significant direct effect between situational interest and the number of arguments in participants' responses [$\beta = 0.19, SE(\beta) = 0.07, p < 0.01$]. However, time on texts, the mediator, did not significantly predict the number of

arguments in students' responses ($p = 0.06$), as such, the indirect effect in the model was not significant ($p = 0.12$), indicating a lack of mediation.

Evidentiary justifications In the second model, the relation between situational interest and the number of evidentiary justifications included in students' responses was modeled, with time on texts serving as the mediator. The direct path between situational interest and the number of evidentiary justifications in students' responses was significant [$\beta = 0.21$, $SE(\beta) = 0.07$, $p = 0.001$]. Likewise, there was a significant path between situational interest and time on texts [$\beta = 0.19$, $SE(\beta) = 0.06$, $p = 0.001$] and between time on texts and the number of evidentiary justifications in students' responses [$\beta = 0.26$, $SE(\beta) = 0.08$, $p < 0.01$]. The total indirect effect of situational interest on the number of evidentiary justifications in students' responses, as mediated by time on texts, was significant [$\beta = 0.05$, $SE(\beta) = 0.02$, $p < 0.05$]. In total, the effect of situational interest on the number of evidentiary justifications in students' responses was significant [$\beta = 0.26$, $SE(\beta) = 0.06$, $p < 0.001$]. See Fig. 1. The effect size for the mediation model was $R^2 = 0.13$.

SOLO scores A third path analysis was run, with time on texts mediating the relation between situational interest and students' SOLO scores. Situational interest was a significant predictor of time on texts [$\beta = 0.19$, $SE(\beta) = 0.06$, $p < 0.001$]; in turn, time on texts was a significant predictor of students' SOLO scores [$\beta = 0.26$, $SE(\beta) = 0.06$, $p < 0.001$]. However, situational interest did not have a significant direct effect on students' SOLO scores ($p = 0.06$), indicating full mediation. The indirect effect of situational interest, mediated by time on texts, was significant [$\beta = 0.05$, $SE(\beta) = 0.02$, $p = 0.01$] as were the total effects in the model [$\beta = 0.18$, $SE(\beta) = 0.07$, $p = 0.01$]. See Fig. 2. The effect size for this model was $R^2 = 0.10$.

Citations A final path model was run predicting the number of citations in participants' responses based on situational interest, as mediated though the total

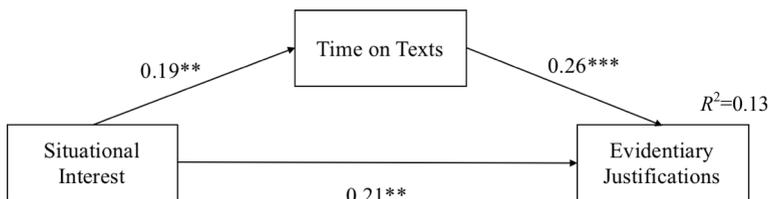


Fig. 1 Mediation model of situational interest predicting the number of evidentiary justifications in students' responses

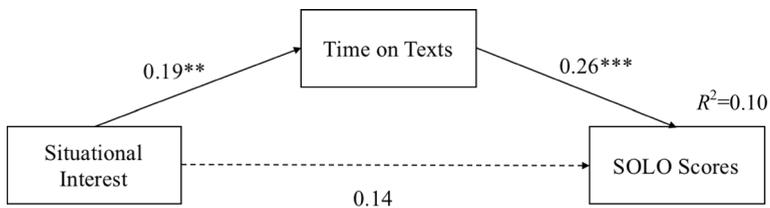


Fig. 2 Mediation model of situational interest predicting students' SOLO scores

time participants devoted to text access. The path from situational interest to the number of citations in participants' responses was not significant ($p = 0.09$). Nevertheless, there was a significant path from situational interest to total time on texts [$\beta = 0.19$, $SE(\beta) = 0.06$, $p = 0.001$] and from time on texts to the number of citations in students' responses [$\beta = 0.16$, $SE(\beta) = 0.06$, $p < 0.01$]. While the total effect of situational interest on the number of citations in participants' responses was significant [$\beta = 0.15$, $SE(\beta) = 0.07$, $p < 0.05$], individually, neither the direct $p = 0.09$) nor the indirect effects ($p = 0.06$) were significant.

Research Question 4: students' interest attributions

Overall, students rated the task as moderately interesting, $M = 4.25$, on a 7-point scale ($SD = 1.63$). Students' justifications for ratings of task interest and their relative frequency are presented in Table 2. In justifying ratings of task interest, students most commonly cited reasons associated with the task presenting an opportunity to learn something new (i.e., *learning experience*, 21.55%, $n = 78$) and the interestingness or importance of the topic of the task (i.e., *topic*, 21.27%, $n = 77$). Justifications of task interest specifically associated with the opportunity to access multiple text reflected 8.56% of the justifications students offered ($n = 31$).

Discussion

Research Question 1: association between situational interest and individual interest

The first research question examined the association between situational and individual interest. As may be expected, students' individual interest, reported prior to task completion, was significantly associated with text-based situational interest, rated during source access. However, this association was only modest. Ainley et al. (2002a) examined the association between individual interest in learning and topic interest, reflecting both individual and situational interest components. Across four models expressing the relations among variables when students read four different texts on varying topics, the association between individual interest and topic interest ranged from 0.10 to 0.38.

This magnitude of association is indicative of a small to medium effect size, similar to the size of effects found in the present study. Ainley, Hillman, and Hidi (2002b) likewise found students' topic interest and individual interest in literature to be moderately correlated. The moderate association between situational interest and individual interest found in the present study as well as in prior research (Ainley et al., 2002a, b; Chen & Darst, 2002) indicates that, beyond individual interest, situational factors may play a large part in students' experiences of interest and engagement during task completion.

Research Question 2: interest and persistence

The second research question explored the association between both individual interest and situational interest and measures of persistence or engagement (i.e., total number of texts accessed, time on texts). In this study, individual interest was associated with neither the number of texts students accessed nor the time devoted to text use. Modeling interest across four different text topic areas, Ainley et al. (2002a) similarly did not find a significant positive association between individual interest and persistence, as assessed by time on text (correlations ranged from -0.14 to 0.10). Elsewhere in the literature, limited work has examined the magnitude of association between measures of individual interest and reading time.

The association between situational interest and persistence was more pronounced. Specifically, students' average ratings of text interestingness were found to be significantly correlated with the total time devoted to multiple text access. Ainley et al. (2002a) found the correlation between topic interest and time on texts to range from $r = 0.19$ to $r = 0.33$, indicating a small to medium effect, consistent with the effects found in this study. This pattern of findings seems to suggest that situational interest has a greater effect on reading times than does individual interest.

Generally, our findings for Research Question 2 are consistent with prior work that has found text-based interest, as an aspect of situational interest, to be associated with time on texts (Hidi, 1990; McDaniel et al., 2000; Schiefele, 1999). Further, our findings provide partial support for Ainley et al.'s (2002a) model of the relation between situational interest and text comprehension being mediated by persistence. The persistence mediation model proposed by Ainley et al. (2002a) is further explored in Research Question 3.

Research Question 3: interest, persistence, and response quality

In responding to the third research question, four models, using interest and persistence factors to predict response quality, were evaluated. Response quality was assessed by the number of arguments and the number of evidentiary justifications included in students' responses as well as by SOLO scores and the total number of citations included in learners' answers. All four of these models were significant, with situational interest and time on texts serving as significant predictors, across several outcome variables (i.e., evidentiary justifications, SOLO scores). Moreover, mediation analyses confirmed both the direct and indirect role of situational interest in predicting multiple text task performance. This seems consistent with Ainley et al.'s (2002a) model proposing persistence as a mediator of the relation between situational interest and task performance, in a single text context. It appears to be the case that interest is directly associated with response quality, perhaps due to its motivating role in stimulating task engagement. Moreover, through the time that students are willing to devote to text access, it may be that situational interest facilitates information gathering from texts.

This latter finding seems to be particularly pertinent in understanding the role of interest in multiple text processing. Tasks requiring the use of multiple texts are

often distinguished by no one text containing all of the information necessary to respond to a particular prompt and by various texts offering not only varying information about a topic but varying points of view as well (Britt, Rouet, & Braasch, 2013a, b). For instance, in this study, multiple text access was necessary for students to obtain evidence supporting as well as opposing both Morsi and el Sisi and to be able to comprehensively respond to the target prompt. As such, time on texts may be a particularly important metric to examine in association with multiple text task performance.

In addition to examining the total amount of time students devoted to text use, the total number of texts students accessed was examined as a measure of both persistence and strategy use. Not surprisingly, total number of texts accessed was significantly associated with the total amount of time students devoted to text use. More importantly, the number of texts accessed, including text revisits, was found to be a significant predictor of the number of evidentiary justifications and citations included in students' responses. While Bråten et al. (2014) examined students' self-reports of deep strategy use during task completion as a mediator of the relation between interest and task performance, in this study, the number of texts accessed served as a behavioral metric of a potentially similar construct.

Nevertheless, the total number of texts that students accessed was not found to be a mediator of performance. This may be explained in a number of ways. For one, many students in this sample accessed all six texts, at the same time that relatively few revisited texts. This may have resulted in a truncated range of texts accessed and decreased the strength of the total number of texts accessed as a mediator of performance. For another, models of multiple text use (List & Alexander, 2017, 2018) suggest that affective (i.e., interest) and cognitive (e.g., source evaluation skills) factors constitute somewhat independent contributors to multiple text task performance. It may be the case that while time on texts, as a measure of persistence, was a mediator of the relation between affective factors and task performance, the total number of texts accessed may be better conceptualized as a mediator between cognitively-based factors (e.g., students' source evaluation skills) and performance. This interpretation seems to be supported by the correlation between the total number of texts accessed and each outcome measure, but the lack of a significant association between situational interest and the total number of texts accessed.

Research Question 1 determined that individual interest and situational interest were associated only to a moderate extent. Research Question 3 established that while situational interest had an effect on metrics of multiple text task performance, individual interest did not. Based on Hidi and Renninger's (2006) definition of situational and individual interest, it may be the case that while individual interest has an effect on the types of tasks that students elect to seek out or complete (i.e., predisposition to re-engage), situational factors dominate during the completion of a particular task. Research Question 4 provides insights into why students may find multiple text tasks to be inherently interesting and ideas for how to stimulate interest during multiple text use. Examining reported explanations for task interest suggests that providing students with controversial or challenging tasks may be a mechanism for fostering interest. This is similar to notions of cognitive interest, or interest

arising from learning, introduced by Kintsch (1980a, b). At the same time, tasks that are too challenging for learners may serve to demotivate students or may impinge on student interest (Stoller, Anderson, Grabe, & Komiyama, 2013). Indeed, challenge as both a motivating and demotivating aspect of task completion was reflected in students' explanations for task interest. For example, while one student reported: *I thought it was interesting to be challenged to write a fact-based opinion paper based off of a few provided sources*; another explained: *I didn't find this task interesting because it was so difficult for me*.

This study expands our understanding of the association between interest and task performance in at least four ways. First, this study examines a broad repertoire of outcome variables as indicative of students' task performance. Second, this study documents a direct effect of situational interest on multiple text task completion as well as an indirect effect, as mediated through the time participants are willing to devote to text access. Third, this study explores interest and persistence as manifest during an academic task, typical of the types of activities students are regularly asked to complete in school. Fourth, this study adopts a qualitative approach to examine how students understand interest as arising during multiple text use.

Limitations

A number of limitations associated with this study must be acknowledged. First, participants in this study represent a sample low in both prior knowledge and individual interest in the target topic. Strømsø, Bråten, and Britt (2010) examined the role of topic interest in students' multiple text use. Topic interest was not found to be a significant predictor of task performance when additional cognitive variables were entered into the model. One explanation posited by Strømsø et al. (2010) was that, given their sample's moderate interest in the topic, interest did not play a sufficient role in multiple text comprehension. In this study too, the limited effect of individual interest on multiple text task performance may be explained, in part, by limitations in students' topic interest. It may also have been the case that our measure of interest, assessed at the domain level, was insufficiently aligned with the topic of the task to capture students' individual interest in a way that may have had a bearing on task performance. This may also have been why individual interest was correlated with students' ratings of individual texts' interestingness only to a moderate extent. Future work should consider the extent to which high levels of individual interest may be facilitative of multiple text task performance and may result in the emergence of greater situational interest during task completion.

Second, in this study, behavioral metrics of multiple text use (i.e., time on texts, total texts accessed) were used as indicators of cognitive factors (i.e., persistence). Such behavioral indicators have similarly been used in prior research (e.g., Ainley et al., 2002a; Bråten et al., 2014; Wiley et al., 2009) and may be considered preferable to students' self-report. Nevertheless, these require that we infer an association between time on texts and total number of texts accessed and persistence. It is certainly possible that time devoted to text access also corresponded to reading difficulty or that the total number of texts students accessed reflected navigational disorientation. In particular, while revisiting texts

was considered to be a measure of deep-level strategy use, this was an interpretive inference based on prior work (Goldman et al., 2009; Lawless & Brown, 1997). Rather than engaged in deep-level strategy use, students revisiting texts may rather have been seeking to accumulate as much information as possible, reflecting lower level strategy use, or selecting a limited number of texts to focus on, rather than seeking to integrate multiple sources of information (Bråten & Strømsø, 2011). Future work should consider these behavioral indicators, not only in relation to task performance, but also as they relate to students' reported cognitive processing during task completion. Moreover, alternate multiple text use metrics, such as the variety of indicators that can be computed based on data on students' text revisits, should be evaluated through qualitative methods, to establish interpretive validity and to determine the most precise metrics to employ.

Third, interest has been defined as always directed toward an object, topic, or activity (Krapp, 1999). In this study, individual interest was examined as directed toward the task topic, while situational interest was assessed in reference to library texts. However, there were likely many other interest-inducing objects inherent in the multiple text task students were asked to complete, including some of those introduced in response to Research Question 4. Future work should explore additional person-object interest relations. This would include considering the role of individual interest when directed toward multiple text task completion or situational interest directed toward response composition.

In this study, both individual interest and situational interest were expected to have a positive effect on persistence and performance. However, better disentangling the effects of these on task completion may come from examining instances when these two forms of interest are misaligned (e.g., when students read uninteresting texts on a topic of interest). Future work would serve to contribute both to understandings of engagement and motivation during multiple text task completion and to conceptualizations of the nature of interest in complex tasks.

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