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The role of perspective on students' use of multiple documents to solve an open-ended task

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ABSTRACT

McCrudden & Schraw (2007) show how students' interaction with a text is mediated by the instructions they are presented with. Specifically, perspective instructions prompt readers to use background knowledge to evaluate text from an assigned point of view. Research on perspective in single texts has demonstrated that readers confer relevance on text segments that are consistent with the assigned perspective (Pichert & Anderson, 1977). This work has tested the effects of perspective when reading conflicting information from multiple documents to perform an open-ended task, as well as has studied if the trustworthiness of a source exerts any influence on students' decision to use information from a particular document. Results indicate that students' reading of multiple documents is influenced by perspective instructions, which, in turn, can help students be more discriminative when deciding between more and less trustworthy documents.

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El papel de las instrucciones de perspectiva en el uso de documentos múltiples para resolver una tarea abierta

RESUMEN

McCrudden & Schraw (2007) muestran cómo las instrucciones de perspectiva asignada promueven a los lectores a utilizar el conocimiento previo cuando interaccionan con un texto. La investigación realizada en textos individuales ha demostrado que los lectores otorgan relevancia a segmentos del texto que son consistentes con la perspectiva asignada (Pichert y Anderson, 1977). Este trabajo ha puesto a prueba los efectos de la perspectiva cuando se lee información contradictoria de múltiples documentos, al igual que ha estudiado si la fiabilidad de una fuente ejerce alguna influencia en la decisión de los estudiantes de cara a utilizar la información de un documento en particular. Los resultados indican que la lectura de varios documentos se ve influenciada no sólo por las instrucciones de perspectiva, sino que también pueden ayudar a los estudiantes a ser más discriminativos a la hora de decidir entre mayor o menor credibilidad de los documentos.

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Palabras clave:

Instrucciones de perspectiva

Fiabilidad de la fuente

Comprensión de documentos múltiples

Lectura orientada a tareas.

Imagine the reader that a group of high-school students is asked to read six different texts written by different sources on the same subject (e.g. benefits and risks of transgenic foods). Then, being allowed to refer back to the documents, they are asked to write a synthesis explaining what transgenic foods are and whether they should be used in our diet, as a regular class activity. Consider the reader this second situation. A group of students of similar age is

asked to read the same set of documents. However, before they should begin to access the documents, it has been indicated to them that they should read the documents and perform their task assuming a specific point of view or perspective, that is, by imagining themselves as if being clearly in favor of the use of transgenic foods or the opposite. While they read the texts, they will be able to return cyclically to the task, and to return to the texts to keep on searching for the necessary information to answer to the question. So, students will have access to the information while they are constructing their responses to the task.

These two situations that we have just illustrated reflect tasks that students could face while reading on the internet on conflicting

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topics. That is, a) to solve open-ended tasks that demand the selection of appropriate content from related documents, b) to read and resolve the tasks under different perspective instructions and, and c) to manage more than one only document of study that may vary as regards trustworthiness. To resolve these type of situations of learning, specific competences associated with the use of textual information are required (i.e. to locate relevant information for the task; to discard information; to integrate and to reflect from the texts), that go beyond a simple vision of the reading as decoding (Hoover and Gough, 1990). Being able to use textual information, from one or several documents, it turns out to be an essential skill in the current complex educational environments, where a big availability of information exists, and in general to succeed in the adult life, as PISA frame defends (OECD, 2002, 2010).

Reading multiple documents. The role of source information

Multiple document comprehension has been plausible to be supposed as mastery only conferred to some experts like historians or scientists, notwithstanding it also may play an important role in other forms of education such as distance or informal learning (Rouet, 2006). Tasks such as recognizing a counter-argument, evaluating and comparing different kind of texts are becoming common requirements for students in high-school scenarios. As a result, students are faced with this type of reading situations in which they are required to access and retrieve, integrate and interpret, reflect and evaluate information according to a higher cognitive level based on comprehending multiple texts (OECD, 2009). Apart from the classical comprehension processes that need to be activated to process textual information (Kintsch, 1998), comprehending multiple documents adds one more main step and that is *source evaluation* (Bråten, Strømsø & Britt, 2009; Strømsø, Bråten & Britt, 2010). In this case, Rouet (2006) claims that when the student evaluates and considers more than one document he or she may need to pay special attention to source characteristics (i.e.; author's identity, authority or date of publication). Consequently, one of the key skills that students are expected to develop is the ability to identify different sources/documents that may vary as regards trustworthiness. Readers will confer relevance to that content which is evaluated as reliable, whereas they should discard content from non-reliable sources.

In this regard, Strømsø, Bråten, Britt and Ferguson, (2013) have articulated the importance of *source evaluation* when interpreting the content of multiple documents. These authors have analyzed students' implicit and explicit awareness of references and source information while reading six digital texts that presented conflicting views on a Google-like environment. They also evaluated the extent to which spontaneous sourcing activity could vary according to the different characteristics of the documents and how it could be related to their use of source information in their essays. Results of this research suggested that students explicitly and implicitly paid attention to sources of documents as well as sources cited within documents. Source information was associated with its relevance in evaluating, predicting, and interpreting the content of the documents.

In addition, Strømsø et al. (2010) evaluated the way students attended to source characteristics and how this process influenced in the perceived comprehensibility of the documents. Students read seven separate texts presenting accessible source information such as date of publication, authors' name and credentials. Deep comprehension was found to be positively predicted by source awareness. The authors concluded that a reasonable level of source awareness had two main positive effects on students. On one hand, it stopped students from relating unnecessary conflicting information across texts and, on the other hand it helped students improve the integration of contents across documents.

In sum, sourcing skills are an essential component in the comprehension of multiple documents, where students are required to handle various types of documents. In these learning contexts, there is a clear need to be selective and focus on information that may be reliable and related to the task. Recent research has demonstrated that students' ability to interpret source information is not always present among youngsters (Goldman & Scardamalia 2013) and that specific task conditions, such as the type of instructions provided for reading, may influence how students discriminate the trustworthiness and relevance of the information (Macedo-Rouet, Braasch, Britt & Rouet, 2013). In this study we will precisely focus on how perspective instructions may determine how students confer relevance to specific documents and contents. We examine these issues next, which will serve as the basis for the purposes of this study.

The role of task goals: perspective instructions

Reading is a goal directed activity mediated by the role of relevant information. Selecting text content may imply a student establishing reading objectives to meet particular task demands and understand a text. McCrudden and Schraw (2007) define relevance as the extent to which a piece of information from a text is relevant at the same time to a specific task or goal. That is, a student may see himself approaching a text under a predefined strategy based on a process that may be external to the physical characteristics of a given text.

For that purpose, materials and their respective tasks could be presented to students in different ways to facilitate this process. By this regard, experimenters could adjust text structure by including pre-questions, instructions to focus on a particular segment of a text or establishing specific goals for reading. Relevance instructions, as defined by McCrudden and Schraw (2007), support students when noticing and realizing text structures and provide clear guidance and criteria applicable to a reading goal. According to McCrudden and Schraw (2007) relevance instructions may play an important role in learning from text and could be classified in four different types; *targeted segments, elaborative interrogation, purpose and perspective instructions*.

Thus, according to the goal-focusing model of relevance (McCrudden, Magliano, & Schraw, 2010, McCrudden & Schraw, 2007) readers' personal intentions function as a cue for relevance: They define what kind of information is relevant and irrelevant. Readers form goals based on their personal intentions or external instructions. The reading goal then guides the processing of text and allocation of attentional resources so that the goal is met. How the text is processed is linked to what readers learn from text.

Research shows that indeed the viewpoint from which readers approach a text, that is, students' perspective when processing a document, plays a significant role in how they inspect the text and what information they recall after reading (Kaakinen & Hyona, 2005). One of the first major studies focused on student's perspective was the one presented by Pichert & Anderson in 1977. Sixty three college undergraduates read stories from one of two directed perspectives or no directed perspective. Students received a booklet with passages of information whose importance seemed to follow from the perspective assigned in each case. Two experiments were performed where subjects were instructed to rate the importance of the idea units in the textual information.

Pichert and Anderson in 1977 hypothesized that learnability and memorability were processes that could be influenced by the importance of the information given to students. Such effect would be mediated at the same time by perspective. Hence, as a consequence of these experiments perspective could be categorized as a reliable predictor of performance. Data also demonstrated that perspective modulated learning of ideas and recall.

According to Ramsay and Sperling (2010) the manipulation of perspective assignment of the materials may increase readers' interest in the text and to some extent; it may have a mediating effect in their recall of important information from the text. Results showed that readers rated text components as more interesting when corresponded to their assigned perspective. In the recall task, data showed that recall performance would tend to increase as a result of the perspective previously assigned.

By means of eye-tracking studies, Kaakinen and Hyönä (2007, 2008) have demonstrated that perspective instructions exert an influence on the encoding strategies skilled adult readers employ during reading. Readers are able to recognize the (ir)relevance of text segments, which influences how they allocate their visual attention. More time is spent on processing relevant segments than irrelevant segments. This suggests that readers' allocation of attention towards relevant information enhances recall, whereas less effort is spent storing irrelevant information in memory. In sum, these results clearly demonstrate that adopting a specific perspective from which to evaluate the text improves memory for relevant text content by prompting students to do more elaborate and time-consuming processes of perspective-relevant text materials.

The current study

There is a rich line of research in single text that has investigated the influence perspective instructions exert on text processing, which has been referred to as the *perspective effect* (i.e. McCrudden & Schraw, 2007). This term is used to describe differences in processing time (or in memory) between perspective-relevant and perspective-irrelevant pieces of information within a text. In this study, our main purpose is to extend the research on perspective to situations where students deal with more than one document of study (i.e. multiple documents reading). In these complex reading scenarios, would perspective effects also play a role in students' allocation of reading resources and selection of information? How would specific features of multiple documents, such as their source features and perceived trustworthiness, interact with perspective instructions? Based on these concerns, will define the main research questions of this study, which we formulate next.

First, how do perspective instructions influence the reader's behavior in multiple documents settings? More specifically, do they influence the way students' allocate their reading resources and how the select information to perform a specific task? Finally, how do perspective instructions influence students' discrimination of type of document (i.e. trustworthiness)?

Second, are high-school students aware of documents' source characteristics? Are they capable of estimating their trustworthiness based on author and content cues? To what extent does the reading of a specific document influence how readers perceive the trustworthiness of a document?

Method

Participants

They were 59 high-school school students, with a mean age of 16 years old. They were randomly distributed into three groups according to the perspective instruction. The final sample distribution was as follows: there were 20 students in the against perspective group, 19 students participated in the in-favor perspective group and 20 students participated in the *neutral feedback* group.

Students were assigned to each of the experimental conditions after being tested with a standardized comprehension test (TEC, Martínez, Vidal-Abarca, Sellés, & Gilabert, 2008) so that all groups were similar in terms of comprehension skills, and no significant differences were found among groups.

Materials

We selected six texts of approximately 300 words each on the topic of transgenic food (see table 1). They dealt with the conflicting topic whether transgenic foods should be cultivated and distributed. They varied as regards trustworthiness, with three more and the other three less trustworthy (ranking task by expert biology teachers). Trustworthiness ratings were provided by a group of biology teachers, who ranked the list of the documents selected by the researchers. A group of 10 teachers were given a list of the pre-selected documents. This list contained information about each of the documents, in a google-like fashion. That is, each document would be presented as a web link, including word cues related to the content of the text and authorship information. Thus, the presented document list contained source cues and content cues that indicated their trustworthiness and content type. Experts were asked to order them according to their trustworthiness level. Those ranked in position 1 to 3 were classified as trustworthy, whereas those from 4 to 6 were classified as untrustworthy.

Table 1.
Distribution of texts

DOCUMENTS	TYPE	SOURCE CUES	CONTENT CUES
MINISTERIO	Trustworthy_Against	Ministry	Risks of transgenic foods
OMS	Trustworthy_Favor	World health Organisation	Benefits of transgenic foods
WIKIPEDIA	Trustworthy_Neutral	Wikipedia	Transgenic Foods
RINCÓN VAGO	Untrustworthy_Against	Lazy's Corner	Disadvantages of transgenic foods
JONATHAN'S BLOG	Untrustworthy_Favor	Jonathan	Advantages of transgenic foods
ZONA DIET	Untrustworthy_Neutral	Zona Diet	Transgenic Foods

The documents also varied as regards level of agreement towards the topic: 2 in favor, 2 in opposition and 2 neutral. To determine the position of the document, a careful content analysis was carried out by the authors of this paper. Any document that contained key words signaling the authors' position towards the issue of transgenic food (i.e. such as risks, benefits, advantages, disadvantages) would be classified either as an against document or an in-favor document. These word cues should be presented both in the title and body of the text. Neutral documents were those that just informed about the characteristics of transgenic foods, without including evident arguments that specified a clear position towards the topic of transgenic foods.

Tasks

We created *three conditions* that varied according to the perspective assigned to students. The main task consisted on solving an open-ended question by providing an answer to the convenience of using transgenic food, from the perspective of a green activist (against condition), from the perspective of a businessman who owns a company of transgenic food (in favor condition) and to generally justify the convenience of using of transgenic food (neutral condition), for a class activity demanded by their teacher. Thus, whereas the against and in-favor condition asked the students to write the answer by imagining themselves being one of the perspective-characters assigned in the corresponding instructions, in the neutral condition students were not asked to adopt a specific perspective, but were demanded to read the documents and write the corresponding task as a regular

class assignment. Students would have the documents available while performing this first on-line task.

We also developed a *trustworthiness ranking task* to be completed before and after the experiment. This task was exactly the same as that performed by the experts. Students were presented with a list of the six sources. They contained source cues and content cues that indicated their trustworthiness and content type. Students were asked to order them according to their trustworthiness. Those ranked in position 1 to 3 were classified as trustworthy (coding value 1), whereas those from 4 to 6 were classified as untrustworthy (coding value 0).

The six texts and the task were presented to the students using the *Read&Answer* software, which presents the texts and the corresponding related task on the computer screen and allows the registration of on-line behavior. *Read&Answer* has been successfully used in previous studies and has provided valuable data on students' question-answering behavior and task-oriented reading patterns (Cerdán & Vidal-Abarca, 2008; Cerdán, Vidal-Abarca, Martínez, Gilabert, & Gil, 2009; Vidal-Abarca et al., 2011).

Read&Answer presents readers with a screen showing the full text. All text except the unit currently selected by the reader is masked. Readers unmask a unit by clicking on it; when they unmask another unit, the first one is remasked. In the present experiment information was divided and presented to students paragraph by paragraph. Thus, a textual unit would be equivalent to one textual paragraph. Readers can access the task screen from the text screen. The task screen is divided into two parts, the upper part for the question and the lower part for the answer. A simple interface allows the reader to move from one question to another and from the question screen to the text screen, and vice versa. *Read&Answer* allows the presentation of more than one text. In this experiment, students first accessed a table of contents which included the specific instructions for reading and for performing the task, depending on the experimental condition. In addition, students could view a list of documents presented as a google-like display. This list of documents provided students with content and trustworthiness cues, which could guide students' decision to access and read specific documents for longer or not. From this main screen, students could either go directly to the task screen or navigate across the six documents.

Procedure

The experiment lasted three sessions. In session 1 participants were assessed on reading skills and performed the trustworthiness ranking task. In session 2 students performed the experiment, which was conducted using *Read&Answer* (Vidal-Abarca et al., 2011), software that presents the texts and task on the computer screen using a masking procedure that allows the registration of the reading behavior.

Participants were presented with a main instructions page where they read the task according to the assigned perspective. The six documents were listed below in a google-like display, and students were told to select and read the sources that helped them answer their question. Students could access the documents and a task screen to answer the assigned question. Students were placed no

time limit, and were allowed to read the texts and perform the task at their will, without any pre-defined order for these actions. In session 3, which took place two days on average after the main session, participants performed the same trustworthiness ranking task as the one in session 1.

Analysis and Results

Impact of perspective instructions on students' behavior in multiple documents settings.

We first analyzed a set of measures that reflected students' reading behavior in a multiple document setting, under the influence of different types of instructions and different types of documents varying on level of trustworthiness.

Reading times analyses. We analyzed reading times (in seconds) for the following situations (see table 2): reading times in the different texts according to their perspective (i.e., in favor texts, against texts and neutral texts) and trustworthiness (i.e., trustworthy and untrustworthy texts). These variables should shed light on students' preferential processing of the different texts according to the assigned perspective and estimated level of trustworthiness.

We performed one multivariate Anova (I.V: *Perspective*, D.V: *time in favor, against and neutral texts*). In favor texts were read for longer by students in the in favor condition, $F(2, 56) = 3.55, p < .05$, *partial* $\eta^2 = .11$ (favor > against, $p < .05$). Against texts were read similarly by students in the against and neutral condition, and both of them longer than students in the in favor group, $F(2, 56) = 5.55, p < .01$, *partial* $\eta^2 = .17$ (against > favor, $p < .05$; neutral > favor, $p < .01$) No significant differences were found for the neutral texts.

A second multivariate Anova (I.V: *Perspective*, D.V: *time in trustworthy and untrustworthy documents*) analyzed the effects of perspective on students' discrimination of trustworthiness. Students in the against condition focused more on trustworthy documents, $F(2, 56) = 2.75, p = .07$, *partial* $\eta^2 = .08$ (against > neutral, $p = .08$). For untrustworthy texts, both students in the in favor and neutral group read them more than to those in the against group, $F(2, 56) = 7.85, p < .01$, *partial* $\eta^2 = .22$ (favor > against, $p < .05$; neutral > against, $p < .01$).

Selection behavior. We also computed students' selection of documents to perform the on-line task, by considering the percentage of total texts visited and the percentage of texts visited that was: a) related to the assigned perspective (i.e., against, for the against group; in favor, for the in-favor group; and neutral, for the neutral condition); trustworthy or untrustworthy (see table 3). Similarly to reading times, the analysis of students' visits to documents would show if students prioritized the documents to read according to some criteria, such as perspective-relatedness or trustworthiness, which are the main variables in this study.

We found significant differences for the *number of total texts visited*, $F(2, 56) = 6.78, p < .01$, *partial* $\eta^2 = .20$ (against > favor, $p < .05$, favor > neutral, $p < .01$). That is, those who accessed a higher percentage of texts were students in the against condition, followed by students in the neutral condition. The group that accessed a smaller percentage of documents was the in favor condition.

Table 2.

Mean and standard deviation of reading time measures (in seconds), as a function of type of perspective instruction

	Time against		Time favor		Time neutral		Time Trust.		Time Untrust.	
	M	SD	M	SD	M	SD	M	SD	M	SD
Against	102452	78799	48675	50283	128290	124291	225561	127245	53857	60519
Favor	39341	73974	109932	103503	97652	100256	141872	193641	145866	137211
Neutral	116797	77843	84566	75613	108444	80806	127691	89003	182116	106188

Table 3.

Mean and standard deviation of selection behavior, as a function of type of perspective instruction

	% Total Texts		% Perspective visits		% Trust		% Untrust.	
	M	SD	M	SD	M	SD	M	SD
Against	66.6	31.9	67.5	29.3	80.0	27.3	46.6	41.0
Favor	45.6	26.5	52.6	35.2	31.5	30.3	59.6	36.1
Neutral	74.1	26.7	82.5	29.3	68.3	31.4	80.0	25.1

We also considered the *percentage of perspective-related texts* and *percentage of trustworthy and untrustworthy texts*. We performed Anovas, with independent measure Perspective and dependent measures the above variables. Results were significant for *percentage of perspective-related texts visited*, $F(2, 56) = 5.54$, $p < .01$, *partial* $\eta^2 = .17$ (against>neutral, $p < .05$, favor>neutral, $p < .01$). Results were also significant for *percentage of trustworthy texts*, $F(2, 56) = 15.03$, $p < .01$, *partial* $\eta^2 = .36$ (against>favor, $p < .01$, favor>neutral, $p < .01$). And for *Percentage of untrustworthy texts*, $F(2, 56) = 5.62$, $p < .01$, *partial* $\eta^2 = .18$ (neutral>against, $p < .01$). That is, in general having a perspective helped students allocate their reading resources on the corresponding documents. In addition, whereas students having a perspective focused more on the more trustworthy documents, those in the neutral condition tended to select more the untrustworthy ones.

Task analysis. In relation to the main experimental task (i.e., on-line task), we analyzed from which sources students had extracted the information included in their answers. Thus, we considered the the number of ideas from: a) perspective-related texts; from trustworthy and from untrustworthy documents (see table 4). These variables would allow us test if the perspective effect would also play a role in students' selection of ideas for the main task, as well as check if students would apply a trustworthiness criteria when deciding which information to include in their on-line task. Students in the in favor condition included more perspective-related ideas than those in the neutral condition, $F(2, 56) = 7.25$, $p < .01$, *partial* $\eta^2 = .10$ (favor > neutral, $p < .05$). Students in the against condition included more ideas from trustworthy sources than those in the in favor condition, $F(2, 56) = 5.35$, $p < .01$, *partial* $\eta^2 = .16$ (against>favor, $p < .01$). Finally, students in the neutral condition included more ideas from untrustworthy documents than those in the against condition, $F(2, 56) = 7.26$, $p < .01$, *partial* $\eta^2 = .19$ (neutral> against, $p < .01$).

Table 4.

Mean and standard deviation of type of ideas in task, as a function of type of perspective instruction

	% Perspective ideas		% Trust.		% Untrust.	
	M	SD	M	SD	M	SD
Against	1.5	1.4	2.3	1.6	.95	2.3
Favor	2.7	2.7	.74	1.0	2.8	2.6
Neutral	1.3	1.7	1.3	1.8	4.4	3.2

Analysis of students' discrimination of sources

In relation to the second research question of this study, we also analyzed if students' were able to differentiate the six multiple documents according to reliability cues present in a google-like display, before and after the experiment. For this purpose, we checked whether the experts' classification matched students' classification of sources. This would be an indicator of students'

awareness of document characteristics. For this purpose we performed trustworthiness ratings analyses. We considered students' ratings to each of the source, before and after the experiment. Having these indicators at two different moments in time (i.e. before and after accessing the contents) could also shed light on the possible influence of content information in the formation of students' trustworthiness judgements.

We performed chi-square tests, with students' rankings to each of the source (trust, 1; untrustworthy, 0) before and after the experiment (moments 1 and 2). We found significant differences for the following untrustworthy sources: *Blog moment 1*, $p < .01$; *Blog moment 2*, $p < .01$; *Lazy's Corner 1*, $p < .01$; *Lazy's Corner 2*, $p < .01$. In these, students' classifications matched those of the experts, and the majority of participants deemed them as untrustworthy, especially after the experiment.

We also found significant differences for the sources: *OMS in moment 2* and *Ministerio in moment 2*. These two trustworthy sources were not significantly differentiated by students before the experiment. It was only after the interaction with the contents that students could correctly classify them. Please note that this did not happen for the untrustworthy sources.

Discussion

The main purpose of this study was to extend the research on perspective to situations where students deal with more than one document of study (i.e. multiple documents reading). The analyses of perspective instructions in single text has a rich tradition, and it has been referred to as the *perspective effect* (i.e. McCrudden & Schraw, 2007). When dealing with documents under different perspective instructions, it has been demonstrated that students allocate their reading resources differently to perspective and perspective irrelevant text (Kaakinen & Hyönä, 2005). This has consequences on students' reading behavior and on memory for specific text content (Kaakinen & Hyönä, 2007). Given that the effects of perspective have so far been tested in single-document settings, in this paper we wondered if perspective effects would also play a role in students' allocation of reading resources and selection of information behavior when dealing with multiple documents.

Complementary, we also aimed to analyze students' capability of differentiating documents of different nature. When reading multiple documents there is a clear need to be selective and focus on information which may be reliable and related to the task. Recent research has demonstrated that students' may have difficulties interpreting source information (Goldman & Scardamalia, 2013) and that specific task conditions, such as the type of instructions provided for reading, may influence how students discriminate the trustworthiness and relevance of the information (Macedo-Rouet, Braasch, Britt, & Rouet, 2013).

The analyses of reading times in the different texts according to their perspective and level of trustworthiness should shed light on students' preferential processing of the different texts according to the assigned perspective and estimated level of trustworthiness. Results indicated that students read the information assigned to the respective condition for longer, and on the other hand perspective helped students focalize their reading on trustworthy documents. This was especially apparent in the against condition.

We also analyzed students' selection behavior, that is, which kind of texts they accessed during the experimental task. It would show if students prioritized the documents to read according to some criteria, such as perspective-relatedness or trustworthiness. In this case, we found that students having a perspective selected trustworthy documents in a greater extent, and that students in the neutral condition (i.e. those without explicit guidance to read the documents) accessed a greater deal of untrustworthy documents. This could be an indicator of the effectiveness of having specific

instructions to process a document, according to the goal-focusing model (McCrudden & Schraw, 2007).

To test the effects of perspective, we also analyzed from which sources students had extracted the information included in their answers, by considering the origin of each of the ideas included in their tasks. The inclusion of perspective-related ideas was especially apparent in the in favor group. In addition, students in the against condition included more ideas from *trustworthy sources* than those in the in favor condition, whereas those in the neutral condition focused more on *untrustworthy ideas*.

In general, perspective instructions seemed to favor students' selection of information by helping students discriminate between relevant and irrelevant documents and ideas. In addition, perspective instructions seemed to also favor students' differentiation of trustworthy vs. untrustworthy texts. In contrast, a more general guidance to approach the task (i.e. neutral condition) made students be less selective as regards which information to attend while reading and which information to include in the final task. These results replicate the findings found for perspective instructions in single-text situations (Kaakinen & Hyönä, 2005, 2007) and they also demonstrate how having a specific guidance to read a set of texts may also help students better attend to source cues (Macedo-Rouet et al., 2013).

Our results also indicate that high-school students are able to identify sources as untrustworthy without accessing the contents, by analyzing the source and content cues that are normally present in document titles. Therefore, high-school students can be aware of sources when dealing with multiple documents (Strømsø et al., 2013). Nevertheless, this study has also demonstrated that students are not always capable of identifying the characteristics of documents in advance (Goldman & Scardamalia, 2013) and that task instructions can mediate how students confer relevance and trustworthiness to specific documents or not (McCrudden & Schraw, 2007). In fact, students having a perspective were more discriminative than those who did not. In addition, when rating the more trustworthy documents, students needed the interaction with the task (i.e., reading the documents) to correctly identify them. In sum, it seems that high-school students are in general aware of source information. However, task instructions can mediate how students rate documents and decide which documents to focus on. This paper has precisely focused on the role of specific perspective instructions when dealing with conflicting topics.

This research has some limitations. First, it has not been measured the extent to which students are capable of identifying and integrating the different arguments that are included in the documents. Second, the assignment of perspective did not consider students' preferences as regards the topic dealt with in the documents. Future research should help to clarify these issues as

well as the effects of other types of instructions when reading multiple documents.

Conflict of interests

The authors of this article declare no conflicts of interest.

References

- Bråten, I., Strømsø, H., & Britt, A. (2009). Trust matters: Examining the role of source evaluation in students' construction of meaning within and across multiple texts. *Reading Research Quarterly*, 44, 6–28.
- Cerdán, R., & Vidal-Abarca, E. (2008). The effects of tasks on integrating information from multiple documents. *Journal of Educational Psychology*, 100(1), 209.
- Cerdán, R., Vidal-Abarca, E., Martínez, T., Gilabert, R., & Gil, L. (2009). Impact of question-answering tasks on search processes and reading comprehension. *Learning and Instruction*, 19(1), 13–27.
- Goldman, S., & Scardamalia, M. (2013). Managing, Understanding, Applying, and Creating Knowledge in the Information Age: Next-Generation Challenges and Opportunities. *Cognition & Instruction*, 31, 255–269.
- Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and writing*, 2(2), 127–160.
- Kaakinen, J. K., & Hyönä, J. (2005). Perspective effects on expository text comprehension: Evidence from think-aloud protocols, eyetracking, and recall. *Discourse Processes*, 40, 239–257.
- Kaakinen, J. K., & Hyönä, J. (2007). Perspective effects in repeated reading: An eye movement study. *Memory & cognition*, 35, 1323–1336.
- Kaakinen, J. K., & Hyönä, J. (2008). Perspective-driven text comprehension. *Applied cognitive psychology*, 22, 319–334.
- Kintsch, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge university press.
- Macedo-Rouet, M., Braasch, J. L., Britt, M. A., & Rouet, J. F. (2013). Teaching fourth and fifth graders to evaluate information sources during text comprehension. *Cognition and Instruction*, 31, 204–226.
- Martínez, T., Vidal-Abarca, E., Sellés, P., y Gilabert, R. (2008). Evaluación de estrategias y procesos de comprensión: El test de procesos de comprensión. *Infancia y Aprendizaje*, 31, 319–332.
- McCrudden, M. T., & Schraw, G. (2007). Relevance and goal-focusing in text processing. *Educational Psychology Review*, 19, 113–139.
- McCrudden, M., Magliano, J., & Schraw, G. (2010). Exploring how relevance instructions affect personal reading intentions, reading goals and text processing: A mixed methods study. *Contemporary Educational Psychology*, 35, 229–241.
- OECD (2002) *Programme for International Student Assessment: Sample tasks from the PISA 2000 assessment of reading, mathematical and scientific literacy*. Paris: OECD
- OCDE (2010). *Panorama de la educación: Indicadores de la OCDE 2010. Informe español*. Ministerio de Educación de España.
- Pichert, J.W. & Anderson, R.C. (1977). Taking different perspectives on a story. *Journal of Educational Psychology*, 69, 309–315.
- Ramsay, C.M., & Sperling, R. A. (2010). Designating reader perspective to increase comprehension and interest. *Contemporary Educational Psychology*, 35(3), 215–227.
- Rouet, J.F. (2006). *Comprehending Multiple Documents. The Skills of Document Use: From Text Comprehension to Web-Based Learning*. Mahwah, NJ: Erlbaum.
- Strømsø, H., Bråten, I., & Britt, A. (2010). Reading multiple texts about climate change: The relationship between memory for sources and text comprehension. *Learning & Instruction*, 20, 192–204.
- Strømsø, H.I., Bråten, I., Britt, M.A., & Ferguson, I. (2013). Spontaneous Sourcing Among Students Reading Multiple Documents. *Cognition & Instruction*, 31 (2), 176–203.
- Vidal-Abarca, E., Martínez, T., Salmerón, L., Cerdán, R., Gilabert, R., Gil, L., ... Ferris, R. (2011). Recording online processes in task-oriented reading with Read&Answer. *Behavior Research Methods*, 43(1), 179–192.