Informative Narrative Texts Do Not Reduce Our Comprehension: a Pilot Study on the Effects of Type and Structure of Texts

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Abstract

In this study, we analyze comprehension and metacomprehension differences between expository (EX) and informative narrative (IN) texts when answering different questions following Kintsch's comprehension model (textbase/situation model). 88 participants read different expository texts and answered multiple-choice questions. Expository texts were presented in two formats (EX/IN). Statistical models showed no interaction between structure of text and type of text, but a statistically significant effect of text structure. Results are discussed according to previous research.

Keywords: comprehension, expository texts, informative narrative texts, performance

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Reading comprehension and metacomprehension in expository and narrative texts is a very relevant and extensive field of research for instructional contexts (e.g., Britt et al., 2017; Dunlosky & Rawson, 2012; Graesser, 2007; Graesser et al., 2002; Graesser et al., 2007; Graesser & McNamara, 2011; Golke et al., 2019; Kintsch, 1988; León et al., 2019; McCrudden & Schraw, 2007; Olmos et al., 2016; Van Dijk & Kintsch, 1983; Wolfe & Mienko, 2007; Wolfe & Woodwyk, 2010). Reading comprehension can be understood as a higher order and complex process in which readers construct mental representations of the texts they are reading, generating inferences, integrating information of the texts with their prior knowledge, and forming reading goals related to the reading situational context (e.g, Britt et al., 2017; McCrudden & Schraw, 2007). Many students can show difficulties in their reading comprehension processes, so it is very important to detect these potential sources of difficulties and to correctly develop their comprehension competences and skills in order to have an efficient functioning in the instructional and work contexts (van den Broek & Espin, 2012). In addition, metacomprehension skills are also relevant for readers, as they determine the ability of the readers to judge their own degree of comprehension from texts, directly conditioning their ability of learning from reading (Dunlosky & Rawson, 2012; León et al., 2019).

Regarding to the differences between expository and narrative texts, it is commonly known that narrative texts are generally better understood by readers than expository texts (e.g., Graesser et al, 2007; Graesser & McNamara, 2011), due to the more familiar content and structure of the narrative texts. This is the reason why some authors created variations of expository texts in order to make them more comprehensible. One of the most interesting approaches receives the name of

informative narrative texts, and they consists in generating a more narrativized structure in order to facilitate the readability and comprehension of expository texts for readers (Wolfe & Mienko, 2007; Wolfe & Woodwyk, 2010). According to Golke and colleagues (2019), despite of their narrativized structure, there is not much evidence about their benefits for reading comprehension. Following the authors, these inconsistencies in the informative narrative texts comprehension can be also related to a poorer metacomprehension, which is a very little studied issue that we will deeper explore in our experiment.

Therefore, in the present study, we focused on the differences in reading comprehension and metacomprehension between expository and informative narrative texts (e.g., Golke et al., 2019; Wolfe & Woodwyk, 2010). Following Kintsch's framework (1988), who proposed a comprehension model with a clear distinction between textbase and situation models of a text, the aim of this research was to study reading comprehension differences between expository and informative narrative texts when readers are asked to answer different kinds of questions, namely as textbase questions and mental model questions. As far as we know, these differences between both kinds of questions have not been explored yet in combination with reading comprehension differences between expository and informative narrative texts in the scientific literature. In addition, as proposed by Golke et al. (2019), metacomprehension items were also tested for each question of the texts.

Method

Participants

Participants were eighty-eight psychology students (age range: 20–23 years) enrolled at the Universidad Autónoma de Madrid.

Materials

Four different expository and informative narrative texts were used as the experimental stimuli. These texts were extracted from Golke et al. (2019), but they were originally created by Wolfe and Woodwyk (2010). We translated and fitted them into Spanish to be applied in our experiment. They consisted in two different expository texts that were presented in two formats, a normal expository text and an informative narrative one. The informative narrative ones consist in narrativized versions of the original expository texts. The topics of the texts were the *human circulatory system* and *hormones and their effects on the human body*. Texts were 900-1100 words long in their different versions.

In this study, we created two different questionnaires for both text topics. These questionnaires were sixteen multiple-choice items long, and contained eight questions related to textbase information and eight questions related to mental model information. The order of presentation of these questions were always counterbalanced for each participant. In addition, a metacomprehension question with 7 categories followed each multiple-choice item.

Procedure

Participants were tasked to read two different expository or informative narrative texts and to answer different multiple-choice questions. Participants always received one expository and one informative narrative text. Text topic and type of text presentation was counterbalanced for each participant. Participants read the texts and answered the questions in a computerized system. Before reading each text, participants were asked to fill an open blank with all the previous information they had about the topics of the texts. After that, they read the texts and answered the different multiple-choice questions. After every question, participants also received a

metacomprehension item for that question. They had no time limitation to fulfill the experiment. The medium time they spent in the whole experiment was around one hour.

Results

Analyses of variance models were fitted to analyze the data using SPSS statistical software. Additional analyses were conducted to analyze how type of text and type of question affect the performance and the metacomprehension of test-takers.

Type of text and type of question

A 2x2 repeated measures analysis of variance model using the performance as dependent variable showed no interaction effect between type of text and type of question ($F(1,87) = .429$, MSE $= .639$; $p>.05$, $\eta^2 = .005$). However, we found a statistically significant effect of type of question ($F(1,87) = 72.819$, MSE $= 105.821$; $p<.001$, $\eta^2 = .456$), which points that participants were significantly more efficient in the questionnaire when they answered textbase questions than mental model questions. The type of text, namely expository and informative narrative texts, showed no statistically significant results.

Metacomprehension

Another 2x2 repeated measures analysis of variance model was fitted using the metacomprehension questions as dependent variable. We found a statistically significant interaction effect between type of text and type of question when analyzing these metacomprehension items ($F(1,87) = 111.713$, MSE $= 1497.375$; $p<.001$, $\eta^2 = .562$). This result points that participants showed higher metacomprehension estimations when answered textbase questions ($M=45.95$, $SD=7.85$) than mental model questions ($M=37.18$, $SD=7.75$) for the

expository text, but they reached similar metacomprehension levels when answered both type of questions (M=42.67, SD=7.65; M=42.16, SD=7.88; respectively) for the informative narrative text.

Discussion

In the present study, we tested the differences between expository texts and informative narrative texts in performance and metacomprehension using a within-subjects experimental design. Concretely, we tested such differences and its interaction with the structure of texts using Kintsch's (1988) comprehension model (textbase/situation model). Results showed no interaction effect for the performance. In front of this, the structure of text had a relevant effect in the performance of the participants, as textbase questions were easier than situation model questions. In front of this, we found an interaction effect for the metacomprehension estimations. This interaction effect showed that no differences were obtained for the structure of text (textbase/situation model) in informative narrative texts, but textbase questions were perceived easier than situation model questions in the expository text.

The results found in the present study were clear: (1) A differential metacomprehension estimation was found between types of text that depends on the text structure according to Kintsch's (1988) comprehension model (textbase/situation model), and (2) Comprehension performance in narrativized expository texts was not lower than the performance in expository texts. Moreover, we found some evidences in favor of our manipulation of the text structure as we found a lower performance for situation model questions comparing to textbase questions. Therefore, we found interesting results that could complement previous research (e.g., Golke et al., 2019; Wolfe & Woodwyk, 2010).

In conclusion, results of the present study highlight the relevance of this research line and the necessity to study the differences between expository and informative narrative texts. This is especially relevant due to researchers could take advantage of these differences in order to improve learning from reading because metacomprehension skills (and thus metacomprehension estimations) can condition the performance of students (e.g., Dunlosky & Rawson, 2012; León et al., 2019). Future research should try to disentangle the underlying processes of the results that were found in this pilot study.

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