

Using rereading to deepen comprehension

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Abstract. Rereading had been commonly accepted as a useful strategy to achieve deepest comprehension, required to learn from text. However, results from research are not conclusive. So, the aim of this study was to prove the effectiveness of rereading to improve comprehension, and to create deeper and more complex representations of a text. We evaluated the rereading behaviour (number of visits to the text, and moment), and the comprehension performance of 34 secondary students before and after rereading an expository text. We used reading comprehension questions constructed to measure different comprehension levels. Based on our results, rereading proved to be effective in improving reading comprehension, as participants showed better comprehension after rereading. Moreover, a relation was found between the amount of visits to the text and reading performance for the most complex reading comprehension questions, suggesting a link between rereading and deepest levels of reading comprehension.

Keywords: reading comprehension; rereading.

Theoretical background

Nowadays, reading is one of the commonest means of building knowledge and learning, but using reading with epistemic purposes requires comprehending a text in depth. Following the classical text comprehension theory (Kintsch, 1994), readers construct a mental representation of the text, which consists of representations at three different levels: *surface level* (the easiest to construct, based on textual information; in this case, the text is processed only superficially), *textbase* (more complex, as it requires making inferences and building a global representation of the text and of its structure), and *model of situation* (involves the interaction between text information and prior knowledge; the resulting representation has to do not only with the text content itself, but also with the real *world* to which the text refers). The construction of a model of situation is what may lead to learning from text, as it implies the integration of the ideas of the text in the structured prior knowledge of the reader.

Some researches have proved that an initial reading is not enough to process a text at this level. Millis, Simon & TenBroek (1998) proved experimentally that, in fact, readers allocate their cognitive resources in processing superficial elements of the text in their first reading, and then in a second read they use fewer resources to this kind of processing, and more resources to integrate information. In line with these results Stine-Morrow, Gagne, Morrow & Herman DeWall (2004) argued that an initial reading can only be used to process the text at a “surface level”, or in a textbase level at the most, and that rereading is required to create a model of situation of the text, creating a “rereading gain” (that is, improving comprehension by rereading). However, results are not conclusive, as some researches have found no significant differences

between the comprehension achieved before and after rereading (Callender & McDaniel, 2009). So, the real effect of rereading to deepen comprehension is not yet clear.

Aim, Research questions, and Hypotheses

Based on this rationale, our general aim is to prove the effectiveness of rereading in improving reading comprehension, and specifically, in improving deepest levels of reading comprehension. Consequently, our research questions and hypotheses are the following:

- Does rereading improve comprehension? We expect to find a global improvement in reading performance after rereading.
- Is rereading useful to favour deeper comprehension levels? We hypothesize that rereading will specifically improve deeper comprehension levels.

Method

Participants, Design, and Materials

To address these issues, we used a repeated measures design. Participants were 34 final-year secondary school students attending two similar high-schools in Barcelona, Spain. We controlled *prior knowledge* (ensuring no participants were familiar with the subject of the text), and *reading comprehension ability* (using a standardized test in order to exclude poor readers to prevent decoding problems influence our data). As text presentation and data collection were done using an specific software called Read&Answer (Martínez & Sellés, 2001), we used sample material (a training text and three reading comprehension questions) to instruct participants in its workings. A similar but longer text was used in the critical trial. It was an expository text about “The Second World War”, composed by 675 words, and directly extracted from a Social Sciences textbook. The reading comprehension questions were constructed *ad hoc* in order to measure the aforementioned reading comprehension levels (Kintsch, 1994). Both multiple choice and open-ended questions were used.

Procedure

All participants performed the task individually and in the presence of a researcher. There was no time limit, but the average duration of the entire procedure was one hour.

Firstly, participants received instructions and were allowed to practise with the sample material before beginning the task, due to the usage of the software Read&Answer. This software was chosen because it registers the exact reading process that participants used, as the text is presented masked, and readers need to unmask each text passage to be able to read it. Once participants had understood the workings of the software and had practised, they go on to the critical trial.

During the first phase of the critical trial, participants had to read the text carefully, considering that they would have to answer questions about it later. When they decided they could answer these questions, they did so. During this first phase, participants were not enabled to reread the text while answering the questions. This phase finished when participants had answered all the questions. In the second phase, they were allowed to reread the text (analyzed as visits to the text) and revise and correct their answers.

Results and Discussion

Although data analyses are currently in progress, our preliminary analyses reveal some important results referring to our research questions. We first present a comparison of reading comprehension before and after rereading, and later the analysis of the visits to the text done during the second phase of the critical trial for every kind of reading comprehension questions (superficial level, textbase, and model of situation).

The comparison of reading performance before and after rereading is shown in Table 1. Significant differences were found in reading performance after rereading, both for the global comprehension score, and for the three comprehension levels independently analyzed.

Table 1: Differences in comprehension before and after rereading for different levels of comprehension

	Paired Samples Test			Df
	Mean	Std. Deviation	t	
Textbase level	-,25735	,58220	-2.577*	33
Model of situation level	-,07441	,16991	-2.554*	33
Global comprehension score	-,77294	,94325	-4.778**	33

Note: For the surface level, significant differences were found using Wilcoxon's T test ($Z=-2.879$; $p<.05$) due to nonnormality. Statistical significance: * $p<.05$ and ** $p<.01$

Regarding the analyses of the visits to the text during the second phase of the critical trial, significant correlations were found between the number of visits to the text and reading comprehension for the model of situation questions ($r=.411$; $p<.01$). More interestingly, a significant correlation has been found between the "rereading gain" for the model of situation questions and the number of visits to the text ($r=.555$; $p<.01$).

More exhaustive analyses are needed, but our preliminary results are in line with those obtained by Millis et. al (1998) and with our hypotheses, suggesting a relationship between rereading and reading comprehension, specifically in questions measuring deeper comprehension levels. These findings could prove valuable in improving educational practice, as they stress the importance of rereading to achieve deeper comprehension, which is in the basis of learning from text.

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