Narrative and Expository Text Reading Comprehension by Fourth Grade Spanish-Speaking Children

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Abstract—This work aims to explore the factors that have an incidence in reading comprehension process, with different type of texts. In a recent study with 2nd, 3rd and 4th grade children, it was observed that reading comprehension of narrative texts was better than comprehension of expository texts. Nevertheless it seems that not only the type of text but also other textual factors would account for comprehension depending on the cognitive processing demands posed by the text. In order to explore this assumption, three narrative and three expository texts were elaborated with different degree of complexity. A group of 40 fourth grade Spanish-speaking children took part in the study. Children were asked to read the texts and answer orally three literal and three inferential questions for each text. The quantitative and qualitative analysis of children responses showed that children had difficulties in both, narrative and expository texts. The problem was to answer those questions that involved establishing complex relationships among information units that were present in the text or that should be activated from children's previous knowledge to make an inference. Considering the data analysis, it could be concluded that there is some interaction between the type of text and the cognitive processing load of a specific text.

Keywords—comprehension, textual factors, type of text, processing demands

I. INTRODUCTION

THIS work aims to explore the factors that have an incidence in reading comprehension process, with different type of texts: narrative and expository. The studies of text comprehension have generally divided texts into two types: narrative and expository. Expository texts are written with the goal of trying to communicate information to readers, whereas narrative texts are written more to entertain than to inform (Weaver & Kintsch, 1991).

Traditionally, narrative texts have been considered easier to read than expository texts (Flesch, 1951). Indeed, research has found that expository texts use to pose more comprehensions problems than narrative texts.

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In a study that explores the linguistic features of temporal cohesion that distinguish variations in temporal coherence among different text genres, Duran, McCarthy, Graesser, and McNamara (2007) found that there is a difference to process narrative and science texts in terms of temporal coherence. They focus on the temporal coherence by developing a scale that was assessed not only by human experts but also by using a computational tool (Coh-Metrix) that analyzed text cohesion. The results showed a correlation between text readability and temporal cohesion corresponding to human interpretations of temporal coherence. Although this research underscores the importance of temporal features as an implicit and viable cue for facilitating the coherent interpretations of a text, these results contribute to a large body of research that posits that reading comprehension is an interaction between the text base and a reader's general knowledge (situation model). Moreover, this study provided evidence that all genres contained a significant number of distinct features. These findings are relevant to reading comprehension, because temporal features, that are specific to a particular genre, may contribute to the activation of effective reading strategies. For example, science texts, which are predominantly written in the present tense with few temporal markers, naturally guide a reader to the detailed, local content information that is necessary to make good bridging inferences (Otero et al., 2002). Narratives, on the other hand, which are most often written in the past tense with many temporal markers, may contribute to the more global inferences that good readers often make. However, even if it is considered that temporal relationships are also influenced by causal links between events, this study did not assessed the argument structure of texts.

Another study that explored text difficulty as a possible factor affecting metamemory [5] accuracy during comprehension was developed by Weaver and Bryant [6]. The study manipulated type of text, level of text difficulty and type of questions. The results suggested that the variation of metamemory performance as a function of text type may have been influenced by text difficulty, and not only by the text type. Indeed, when text difficulty was controlled, the interaction between text type and question type disappeared.

In a recent study with 2nd, 3rd and 4th grade Spanish speaking children, it was also observed that reading comprehension of narrative texts was better than comprehension of expository text [7].

The purpose of this study was to examine the relationship between letter naming, isolated word recognition, word reading in text, and reading comprehension, which are all considered critical variables for reading fluency. The analysis of the variation of this relationship in the earliest years of primary school was undertaken. The results of this study show a difference among groups in all the variables: children´s performance increased throughout the school years. In fourth grade, children reached the highest scores in word reading in texts. Although there were no differences in the amount of words read in one minute between narrative and expository texts, there were differences in comprehension: it was higher in narrative texts than in expository texts. These findings could also indicate that the variation in reading comprehension might be affected by text variables.

Currently, the studies have considered different mechanisms to explore the level of comprehension: literal and inferential questions. To process the information in a text in order to generate a mental mode, there is a former literal dimension. This surface level is considered to pose fewer requirements to working memory because the subject has to recognize and reproduce information that is explicit within the text. On the other hand, inferential questions tempt to assess the ability to generate more challenging inferences. This dimension is more demanding because the subject has to relate information that it is not always explicit within the linguistic structure of a text. Moreover, most of the comprehension strategies to answer inferential questions focus on the subjects' previous knowledge –relations could be abstract, span large distances in the text, causal connections, etc. [8], [9].

Nevertheless, it seems that not only the type of text but also other textual factors could account for the variation in comprehension depending on the cognitive processing demands posed by the text. Even when narrative texts can be considered simpler texts, containing fewer words per sentence, more common words, and simpler words, this can be variable. In fact, there are narrative structures that have complex coherence-building connections such as distant causal relations or psychological motivations related to protagonists' goals.

II. THE PURPOSE OF THE STUDY

This study explored the effects of type of texts –narrative and expository- and their level of complexity on the comprehension of both, literal and inferential questions.

It seems that the narrative texts, where inferential questions imply to understand the psychological intentions of characters, pose more difficulties than those ones in which the actions of characters are evident. Concerning the expository texts, the lineal structure seems simpler to understand than an overlapping structure.

In order to explore this assumption, three narrative and three expository texts were elaborated with different degree of complexity. To establish the level of complexity of texts, we considered 3 factors: length, syntactic complexity and text organization.

Overall then, our goal in this paper is to assess the level of comprehension of fourth-grade Spanish speaking children considering the different variables manipulated in the study: type of text, level of difficulty and type of question.

III. METHOD

A. Participants

The study participants were a group of 40 fourth-grade Spanish-speaking children (17 female and 23 male) from Córdoba, Argentina.

B. Tasks and Materials

Children were asked to read 3 narrative and 3 expository texts and answer orally three literal and three inferential questions for each text type. All the assessments were carried out by trained testers and were administered during the second semester of fourth grade. All were tested in a quiet location in their schools.

The battery of administered texts is described hereafter:

Narrative Texts: This set of materials consists of a series of printed narrative passages, each of which increases in difficulty. The texts were selected among the topics teachers consider during fourth-grade training. All the texts were analyzed considering length, amount of content words, syntactic complexity and structure.

Narrative Text 1 (N1): length: 121 words; content words: 69; UT: 13; subordination index: 0,3. This text has a canonical structure considering the categories of Stein & Glenn [10] and the category "intent" presents empirical actions.

Narrative Text 2 (N2): length: 119 words; content words: 55; UT: 12; subordination index: 0,5. The category "intent", in this text, supposes psychological intentions.

Narrative Text 3 (N3): length: 112 words; content words: 52; UT: 10; subordination index: 0,4. The categories "intent" and "resolution", in this text, suppose psychological intentions.

Expository Texts: This set of materials consists of a series of printed expository passages, each of which increases in difficulty. The texts were selected among the characteristic topics of fourth-grade curricula. All the texts were analyzed considering length, amount of content word; syntactic complexity and structure.

Expository Text 1 (E1): length: 115 words; content words: 67; UT: 12; subordination index: 0,5. This text has a lineal organization of the information [11].

Expository Text 2 (E2): length: 126 words; content words: 68; UT: 11; subordination index: 0,5. This text has an overlapping organization of the information.

Expository Text 3 (E3): length: 121 words; content words: 64; UT: 10; subordination index: 0,5. This text has a lineal organization of the information.

Reading Comprehension Assessment

Each of the three narrative and expository texts was followed by questions presented and responded to orally. This subtest contains both 3 literal and 3 inferential comprehension question types for each text. The children were instructed to

read a passage, listen to the question presented by the examiner, and then respond orally in their own words. The raw score was determined by the number of questions answered correctly.

C. Procedure

Participants were tested individually in one session of 45 to 60 min. The subjects were given the verbal instructions that they were to read each passage orally and once for comprehension. Immediately after the oral reading of each text, the subjects completed the question battery. They were rated on a scale of 1-6 according to the amount of correct answers. All 6 questions on a specific passage were presented as a set, with each set being titled (e.g., "*You will now be asked some questions over the passage you have just read...*"). The order of the 3 sets was randomized, but the order of the 6 questions within the set was not randomized in order to follow the logical organization of the information given in each text.

IV. RESULTS

The quantitative analysis of children responses showed some differences between expository and narrative texts. The overall results showed also an important difference between inferential and literal answers. The Table 1 shows the Medias and the standard deviations for both, types of texts and types of questions:

TABLE 1
GENERAL COMPREHENSION MEASURES, MEDIAS AND STANDARD DEVIATIONS

Text type	Answers	Media	SD
Narrative	Inferential	6.41	1.52
	Literal	7.46	1.38
Expository	Inferential	3.37	2.34
	Literal	6.17	1.52

As we can see, considering the differences between texts, we observe that the children's performance is better for narrative texts than for expository texts. This may not be surprising since, as it was considered previously in this paper, usually, narrative texts are simpler texts, containing fewer words per sentence, more common words, and simpler words. Moreover, children are more used to read narrative texts than expository. In fact, the former text type is introduced since the first interactions in real life whereas the training to read expository type starts with the primary school.

Likewise, the total of literal answers is always higher than the total of inferential answers, which it may not be surprising since the inferential questions imply to identify connections of different level of complexity whereas the focus of literal questions is the explicit information that appears in the surface of the text and usually with a linguistic label.

The same patron is found when we consider each text individually. This tendency is illustrated in Table II.

TABLE II
COMPREHENSION MEASURES FOR EACH TEXT, MEDIAS AND STANDARD DEVIATIONS (SD)

Text	Answers	Media	SD
Narrative 1	Inferential	2.66	0.53
	Literal	2.85	0.36
Narrative 2	Inferential	2.32	0.88
	Literal	2.56	0.59
Narrative 3	Inferential	1.44	0.81
	Literal	2.05	1.07
Expository 1	Inferential	1.37	1.04
	Literal	1.95	0.67
Expository 2	Inferential	0.73	0.84
	Literal	2.71	0.60
Expository 3	Inferential	1.27	1.16
	Literal	1.51	0.98

Indeed, even when there are no always important differences between inferential and literal answers, the Medias are superior for literal ones in all the cases. Concerning the narrative texts, we can find differences as well. Interestingly, the text 3, that presents more complexity in the narrative structure, seems to pose more difficulties for inferences and the difference with literal answers is significant. Besides, the text 1, considered the simplest, presents the highest scores in both kinds of answers.

In relation with the expository texts, the text 2 presents a complex organization of overlapping that implies to "track" the information through the whole text and link units of information to successfully answer the questions. In this sense, it seems to pose more difficulties to make inferences. In fact, the media of accurate inferential answers is the lowest among all the texts.

V. DISCUSSIONS

Considering the data analysis, it could be concluded that there is some relationship between the characteristics of the text and the cognitive processing load of a specific text. Overall, it seems that text difficulties could explain the differences among comprehension performance rather than text type itself.

The results therefore support previous studies that have shown a relationship between textual features and comprehension. In fact, it is observed that children find more difficulties when the questions involve understanding psychological motivations to make the coherence connections that allow the construction of a coherent representation of the narrative text. Interestingly, regarding expository texts, it could be thought that the lack of experience in reading this text type makes it difficult for children to elaborate inferences or to remember literal information. In fact, the performance in the comprehension test was low not only when the question implies to relate the given information of the text base with

previous world knowledge but also when the topic was more complex.

In this study we measure textual variables related with comprehension of literal and inferential information. However, it is possible to think that some readers would be able to comprehend more accurately the literal information in expository texts as well as to formulate appropriate inferences because they have adequate backgrounds. In this sense, the frequency of interaction with the different type of texts could also have an incidence on the level of comprehension. Besides, the previous knowledge, related with the abilities to read genres and with the topics, might increase the amount of resources available in the working memory to monitor the comprehension process.

Future research should try to consider these variables, in order to answer problems that have a direct impact on the learning of comprehension process.

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