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Helping to Understand and Teaching to Understand: Two Instructional Approaches for Elementary Education Students

Ayudar a comprender y enseñar a comprender: dos planteamientos instruccionales para los estudiantes de educación primaria

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Abstract

Reading academic texts is a highly demanding experience which requires that one not only comprehends what one reads, but also learns from it. These demands become increasingly common starting in intermediate-level elementary courses. As a consequence, students have to acquire new strategic resources that consist of performing mental actions oriented towards a specific objective (such as selecting only information that meets a certain criterion) in light of certain cues (e.g., a textual expression such as "the primary cause is …). We need to understand this challenge in order to provide the instructional support that students require. For this reason, the objective of this paper is to identify the needs of students to use such reading strategies, based on the review of our previous studies. Basically, we show that students find it more difficult to process meta-textual cues to mobilize their strategic courses of action than deploying such courses of action: that is, there is a dissociation between the sensitivity to the cues and the ability to perform the course of action linked to them. They also experience difficulties in remembering reading objectives when they have to select information in accordance with meta-textual cues. This evidence leads us to differentiate between two instructional approaches for students: the first is aimed at *helping* the students *to understand* the text they are reading, while the second is aimed at *teaching them to understand* any text. Finally, we clarify when and why the former approach could be particularly useful.

Keywords: academic expository texts, difficulties, reading comprehension, strategies, teaching

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Resumen

Leer textos académicos es una experiencia altamente demandante, ya que exige no solo comprender lo que se lee, sino también aprender de ello. Esta exigencia se vuelve cada vez más común desde los cursos intermedios de la enseñanza primaria. Consecuentemente, los estudiantes deben adquirir nuevos recursos estratégicos, que consisten en llevar a cabo acciones mentales guiadas por una meta explícita (por ejemplo, seleccionar solo la información que cumpla con un criterio determinado) ante la presencia de ciertas claves (por ejemplo, una expresión textual como "la primera causa es…"). La adquisición de estos recursos representa un reto que debemos entender bien para proporcionar el apoyo instruccional necesario. Por esa razón, este artículo busca identificar algunas de las necesidades que experimentan los estudiantes en el uso de estas estrategias de lectura, con base en algunos de nuestros estudios previos. Básicamente, mostramos que los estudiantes presentan más dificultades para procesar las claves textuales que guían sus acciones estratégicas que para llevarlas a cabo: es decir, hay una disociación entre la sensibilidad a las claves y la capacidad para ejecutar el curso de acción ligado a ellas. Además, presentan dificultades para recordar las metas de lectura cuando deben seleccionar la información de acuerdo con ellas. Estas evidencias nos llevarán a diferenciar dos planteamientos instruccionales: el primero pretende *ayudar* a los estudiantes, durante la lectura, *a comprender* el texto que están leyendo; el segundo está destinado a *enseñarles cómo comprender* cualquier texto. Finalmente, clarificamos cuándo y por qué *ayudar a comprender* podría ser especialmente útil.

Palabras clave: comprensión lectora, dificultades, enseñanza, estrategias, textos académicos

Academic expository texts are specifically designed to provide their target audience—usually students—with richer and more complex views of the world than those they had before they began reading them, thus leading them towards a highly demanding experience that requires that they not only *understand* but also, and essentially, *learn* from what they read, which is something that begins to become more common during the intermediate years of elementary education (Best, Floyd, & McNamara, 2008; Chall, Jacobs, & Baldwin, 1990; Duke, 2000; Hall, Sabey, & McClelland, 2005; Saenz & Fuchs, 2002; Williams & Pao, 2011).

There is broad consensus that dealing with academic texts is one of the most important challenges of literacy (Snow, 2002), insofar as it requires skills that are very different from those needed to understand everyday texts and narratives (Duke & Roberts, 2010; Meyer, 1975; Snow & Uccelli, 2009). Students must therefore acquire a set of new cognitive resources, such as comprehension strategies (McNamara, 2007) that they should learn to deploy when coming across appropriate *cues* (Graesser, 2007).

Based on our previous work, the aim of this paper is specifically to identify some of the needs and possibilities of students to act strategically when faced with academic texts and, in accordance with this knowledge, suggest the most appropriate instructional support to meet them, which leads us to differentiate between the two types of approach that give the paper its title: *helping to understand* and *teaching to understand*. The former entails *guiding* students *during the reading of specific texts* so that they can benefit from *them*; while the aim of the latter is to *explicitly teach* students how to deploy the strategic resources needed to *approach any text* on their own.

We will first attempt to clarify three interrelated questions: (1) What is being strategic when reading expository texts and how does this challenge differ from others that form literacy as we currently understand it? (2) Of what do the strategies involved consist? and (3) What evidence is there to justify the proposed approach we advocate (helping to understand)? The article concludes by proposing a specific example which *helps to understand*.

The Development of Literacy

Reaching a high level of achievement in complex domains, such as reading, is a long-term process (Ericsson & Lehmann, 1996) in which different challenges of a cumulative nature have to be addressed in succession. This implies that whether one overcomes each of them, and in the appropriate time, can have consequences on subsequent development, giving rise to the well-known Matthew effect (Stanovich, 1986). In this context, one of the most important contributions that educational research can make is to clarify the nature of these challenges, which means identifying the *core skills* to tackle them, the *level of mastery* that one must reach in these skills, and in which period-phase-moment these skills become decisive to address common school tasks. Fully acquiring each core skill at the right time and at the appropriate level could be understood as a *key* that unlocks possibilities for growth *in the literacy process*: those who achieve that can not only benefit from what they read, but also improve as readers; while those who do not lessen their possibility of improving, consolidating, or even generating new resources to the same extent. A model that specifies the nature of each challenge would allow us to anticipate and adjust to the needs of students throughout their education.

There are four challenges in this respect. The first and most obvious is *learning to read*, on which there is a broad consensus with regard to all the aspects mentioned: which *skills are critical* (phonological awareness, acquisition of the rules that link phonology and orthography), when the *necessary mastery* is usually achieved, and the consequences (risks) of not acquiring them in the *appropriate period* (Caravolas et al., 2012; Compton & Pearson, 2016; Cuetos, Rodríguez, Ruano, & Arribas, 2007; Cuetos, Ramos, & Ruano, 2002; Jiménez & Ortiz, 2000; Perfetti & Adlof, 2012).

Likewise, and it is this on which we have been working for the last 20 years, we should also add and differentiate three other consecutive challenges that are essentially linked to comprehension and learning from texts. The first of these consists of *matching written comprehension with oral comprehension* of common everyday content: stories, simple instructions on what to do, or descriptions of what is happening. Therefore, following the *Simple View of Reading* (Gough, Hoover, & Peterson, 1996; Gough & Tunmer, 1986; Hoover & Gough, 1990), since reading comprehension is equal to the capacity for oral comprehension multiplied by decoding (RC = OC x D), reaching equalization (RC = OC) requires a decisive achievement: that the ability to recognize and access the meaning of written words (decoding) is efficient enough as not to divert cognitive resources from the process of comprehension. This is an achievement that requires a prolonged period of regular contact with the written word (García & Cain, 2014).

Therefore, it is reasonable to think—and we are collecting the data that could demonstrate this (Calvo, 2021)—that if a student in the early grades (or older students with problems in processing written words) habitually experiences their reading comprehension to be less than that when listening, he or she will tend to move away from reading. In contrast, those who quickly match oral and written comprehension can venture into reading a large proportion of the texts that they come across, which will eventually increase their ability to cope with new demands.

A second challenge is that mentioned at the beginning of this paper: learning from reading. It is understood that reading accounts or simple descriptions that confirm, reshape, or imperceptibly enrich our previous view of the world is not the same as reading expository texts designed to modify that view (Snow & Uccelli, 2009), which requires strategic reading, as we will discuss below. Obviously, meeting this new challenge can become particularly difficult if a learner still has to devote cognitive resources to efficiently decode the written word.

Lastly, and in another an inevitably imprecise transition, we should note a final challenge: reading multiple texts to achieve a very precise learning goal that is set in advance, either by the reader themself or by external agents or circumstances (Anmarkrud, McCrudden, Bråten, & Strømsø, 2013; Goldman, 2015; McCrudden, 2018). For example, a reader may wish to differentiate between the late and early Middle Ages and, with that

objective in mind, reads various texts aimed at explaining specific questions such as how cities and markets emerged, how agriculture was transformed from the 11th century onwards, or what the role of guilds was in economic activity during the 14th century. The reader may find information that answers their initial question in these texts, although none of them is expressly aimed at answering it, but instead address other unrelated matters.

Faced with this challenge, the reader has to work with even more specialized resources than those that would be used to tackle a simple academic text (Britt, Rouet, & Durik, 2018; McCrudden, Magliano, & Schraw, 2010, 2011; McCrudden & Schraw, 2007, 2010). Such a reader would thus have to draw up a relatively precise reading *plan* that includes not only the *objective* pursued, but also an idea of the *means* at their disposal: a number and the type of texts they will consult and how they will analyze them: "Do I read all the texts exhaustively and then choose what interests me from each of them?", "Do I take an initial idea from each text and then selectively go into them more deeply?".

Also, as they read each document, they have to *retain* this plan in their working memory and make decisions about where to stop and where not to, which means making *judgments of relevance*, constantly distinguishing between their personal objectives and those of each text they read.

Obviously, it does not seem to be feasible to engage in such sophisticated processes without having acquired the core skills of the previous challenges: (1) learning to read, (2) efficiently recognizing written words so that oral and written comprehension are equal, and (3) operating strategically. This latter challenge does not become accessible until secondary or even university education (Braasch, Bråten, & McCrudden, 2018; Florit, Cain, & Mason, 2020; Goldman, Lawless, & Manning, 2013; Kiili, Bråten, Kullberg, & Leppänen, 2020; Paul, Cerdán, Rouet, & Stadtler, 2018).

The Meaning of Being Strategic When Reading Expository Texts

After having looked at the four challenges that allow us to summarize the process that leads to mastery of reading, we will focus on the challenge of reading to learn. Basically, learning new content by reading involves three complementary processes: (1) knowing what the text says, (2) coactivating what one already knows and what one has retained from the text to identify discrepancies and gaps, and (3) resolving those discrepancies/gaps by creating a new view that integrates what one knew and what one obtained from the text (for a similar synthesis of processes, see Mayer, 2010 or Mayer & Alexander, 2016). Because of their complexity, each of these processes requires the use of specific strategies on the part of readers that have to be understood as *courses of action* that are performed intentionally considering conditions or *cues* that must be interpreted correctly (Graesser, 2007). That is to say, every strategy has two components, as we will see below: the actions that the reader performs and the cues that indicate when to carry them out.

What Courses of Action Become Necessary?

As already noted, understanding and learning from an academic text is a very demanding task, since these texts address unfamiliar topics and present a large volume of information, which is therefore usually organized in a logical or formal way (as an explanation, a comparison, etc.). For example, if a text is organized as a systematic comparison between two phenomena, readers—recognizing that pattern—should set themselves the task of *reading to identify differences*. This means that, while extracting the meanings from each word and sentence, they will simultaneously and essentially try to discover whether they demonstrate how those phenomena differ,

thus attributing an order to all the selected information in their mind in accordance with the adopted criterion. This complex activity is called the structure strategy (Meyer, Brandt, & Bluth, 1980). Similarly, in order to fully identify these differences, it may also be necessary to synthesize or summarize the entire volume of information that refers to each of them; a reader proceeding in this way would be using what is known as macrorules (van Dijk, 1980; van Dijk & Kintsch, 1983).

However, knowing what the text says does not necessarily lead to this knowledge modifying the initial view of the reader, unless the ideas extracted from the text and this initial view coexist (there is a coactivation) in the working memory (van den Broek & Kendeou, 2008). But first, the reader must consciously access their own view, which, unless it is fully formed, must be defined after a specific process of realization and reformulation (Chi, 2008; Karmiloff-Smith, 1992). In any case, the more specific the contrast between the two representations (what one knows and what is understood), the more a gap or inconsistency between them can be identified, from which a precise objective can emerge that justifies the reading[1]. All of this work involves a high level of metacognitive activity through which one *self-evaluates* the level of understanding achieved and plans the subsequent steps to take[2]. In more specific terms, it is not the same to say to oneself "Well, I'm going to see what the Middle Ages were", as to assume this other aspiration: "I had the idea of an obscure period [realization], but as far as I can see, that only corresponds to one of the two periods in that stage [self-evaluation: identification of discrepancies], so I'm going to see exactly what the difference is between those two periods [planning: objective]."

Finally, reading the text should serve to arrive at a view that satisfactorily integrates what was thought and what was read; this requires creating self-explanations and logical inferences that connect elements from the text with what was already known: "That dark world that I imagined was partly true, but it gradually faded away as the productivity of the land increased and it was possible to feed entire cities."

To conclude this section, it should be noted that all of this mental activity also arises from the communicative experiences of everyday life already mentioned. However, and herein lies the difference, in these cases the information is usually so familiar ("Peter began to tremble, he could not speak and he could not run") that the overall idea that summarizes what we read ("Peter was afraid") is imposed on us without any conscious effort. It also happens that, when faced with a story, we imperceptibly organize the information as an overall relationship between problems and solutions experienced by the protagonist: "Peter sees a wolf and, filled of fear, his solution is to hide in a jar." This outline is also imposed on us without any cognitive awareness or cost, since it is part of the everyday use of language. Of course, in these same everyday experiences, the gap between what we read ("Peter—whom I admire because of what I have read about him—is afraid") and what we know can be so small ("I thought that being afraid was for cowards") that it can be resolved automatically ("Everyone is afraid of something").

What Cues Stimulate Strategic Courses of Action?

As we have stated, all of the strategic activities mentioned (selecting, synthesizing, organizing, self-evaluating, making inferences, creating self-explanations) form two types of skills that should be differentiated (Graesser, 2007). On the one hand, there is the mastery itself to deploy each course of action, and, on the other, the

1. It is also possible that this objective or goal is in the mind of the reader from the start, but this will probably require the reader to have a great deal of prior knowledge about the subject or to assume the objective that someone else (e.g., a teacher) is proposing.
2. Self-evaluation is also important during the development of processes other than coactivation, but, because of its complexity, it is here that self-evaluation becomes decisive.

ability to pay attention to a range of cues that inform the reader whether or not to implement these courses of action. Therefore, returning to the example used previously, the effort to structure the information in the text as a comparison between two historical periods can be stimulated by at least three very different types of cues[3]:

– The most obvious are instructions that an external agent (our teacher, for example) might give us before or during the reading: "Now let's look at three differences between the two stages of the Middle Ages." These instructions, once received as such, could be converted by the reader into their objective for the subsequent reading, from which they will select and organize the relevant information. There is ample evidence that giving such instructions aids and facilitates comprehension (see, for example, McCruddeen & Straw, 2007).

– Another type of cues are certain expressions that form part of the text and are called rhetorical cues or devices. So, when a student reads "Let's look at these three differences [about the Middle Ages]" at the beginning of a paragraph, they can assume that this statement does not refer to the world addressed in the text, the Middle Ages, but rather to the text itself that they have in their hands and, specifically, to how it has been designed by its author (Lemarié, Lorch, Eyrolle, & Virbel, 2008). Once the reader has identified the metacommunicative nature of this expression (Givón, 1992), they will be able to reveal the intention it contains ("three differences will be mentioned") and, more importantly, they will be able to transform that message into an instruction that, when made their own, will sound like a personal objective for their imminent reading: "I will read the text to find them". To do all of this requires specialized linguistic knowledge that can be referred to as rhetorical competence (Sanchez & Garcia, 2009; Sanchez, Gonzalez, & Garcia, 2002), knowledge of markers (Oakhill, Cain, & Bryant, 2003), or sensitivity to cues (Brooks, Spurlin, Dansereau, & Holley, 1983), and that can be understood as part of so-called *academic language* (Snow & Uccelli, 2009; Uccelli et al., 2015), a predictor of comprehension of expository texts (see, for example, the study by Meneses et al., 2018, with Chilean students).

– A third type of cue arises when it is the reader who identified their *dissatisfaction* with what they are obtaining and actively seeks a way to overcome that by recalling previous successful experiences, ("I'm going to make a comparison"), which turns reading into a problem-solving process (Britt et al., 2018).

It should be noted that the result of processing these three very different cues is exactly the same ("I'm going to look for differences"), but the process that leads to it is not. For this reason, a reader may behave strategically in the face of one type of cues, but not in the face of others. Specifically for this reason, their growth as a reader involves extending this sensitivity to all relevant cues, particularly those that are part of the expository texts themselves, since these are the ones that will enable them to autonomously perform each of the different courses of action mentioned: for example, "in short" invites us to read what follows in order to create a summary, "the second cause" suggests how to organize what we read, "it is usually thought that ... but" guides us in our self-evaluation to identify gaps/errors in our previous conceptions, "we could state as an example ..." gives us the opportunity to explain ourselves and resolve the gaps/discrepancies identified.

Considering this framework, we have conducted several experiments to try and clarify what students need in order to act as we have just described, which, as we will see, justifies the type of approach that we call helping to understand.

3. These three types of cues can trigger any of the courses of action involved in the other strategies that have been mentioned.

Evidence for the Notion of Helping to Understand

Cues and Courses of Action: Where do the Difficulties Lie?

The distinction between cues and courses of action as components of a strategy is useful to us in trying to discover where the problems of less proficient students lie. Do they have problems in both components of a strategy? And if not, there are still two additional questions: Is the problem that they do not know how to implement the strategic courses of action or rather that they do not know when to do so? Which cues are more accessible and which are less accessible?

We have carried out several experimental studies in which we try to answer these questions for the specific case of the *structure strategy* (selecting and organizing information), but the conclusions of which, we believe, could also be applied to the other strategies. In one of these studies (Sánchez, García, & Bustos, 2020), we compared the performance (assessed by means of a summary) of 340 students at the end of elementary education when reading a text under four sets of experimental conditions: with oral cues, written cues, oral and written cues, or no cues. The text, entitled *El Mediterráneo se muere* (The Mediterranean is dying), contained a large amount of new information and could generally be conceived as a causal explanation of the possible degradation of the sea, in which three causal factors were identified. Based on this structure, the overall ideas to be selected and synthesized were those that referred to each of the three factors and their consequences (e.g., "A lot of garbage is dumped in a small sea"). In addition to selecting these contents, a good summary should show that the causal relationships between these ideas have been understood, so, by calculating the number of ideas and the number of causal links, the maximum score that could be obtained was 8. The subjects were also assessed on four additional tests that evaluated their reading comprehension, word reading level, prior knowledge, and rhetorical competence.

More specifically, the experiment contrasted the impact of hearing "LET'S SEE now, in this paragraph, A SE-COND CAUSE, very different from the previous one"[4], with the effect of reading the statement "To that we must add a second cause", taking as a reference the performance achieved under two control conditions: that of giving no help and that of providing both at the same time[5]. The oral guides do not differ from the written ones in the terms of the regulating message they contain, but they are different (as we have tried to show in the previous example) regarding characteristics such as prosody or eloquence, which facilitates the processing of the oral version. Thus, with prosody, the speaker makes it clear that they intend to regulate the listener and not to inform them about the world, which facilitates the immediate identification of that message as an instruction. Also, since oral guides are more explicit, it may be easier to reveal the communicative intention they contain. Finally, because prosody directly expresses how valuable it is to the speaker what they are saying, the receiver may attach the same value to what they hear, which may help them to motivationally engage in following it.

With this framework and design, we would expect to find that the oral condition would be superior, which would confirm the hypothesized dissociation between cues and courses of action, but what is really relevant is to know under what conditions this superiority disappears and, therefore, when students are able to benefit from the written cues as they do from the oral ones. Reaching that point is what provides the reader with one of the keys that allow them to explore texts on their own and grow as a reader.

4. In this statement, words in upper case indicate that they are pronounced with greater intensity, and words broken down into syllables represent a slower rate of diction.
5. It should be underlined that the oral and written guides followed the usual way in which they are stated by teachers when they explain or are presented in textbooks, something that we have verified with the observational studies and the analysis of school texts that we have conducted (García, Montanero, Lucero, Cañedo, & Sánchez, 2018).

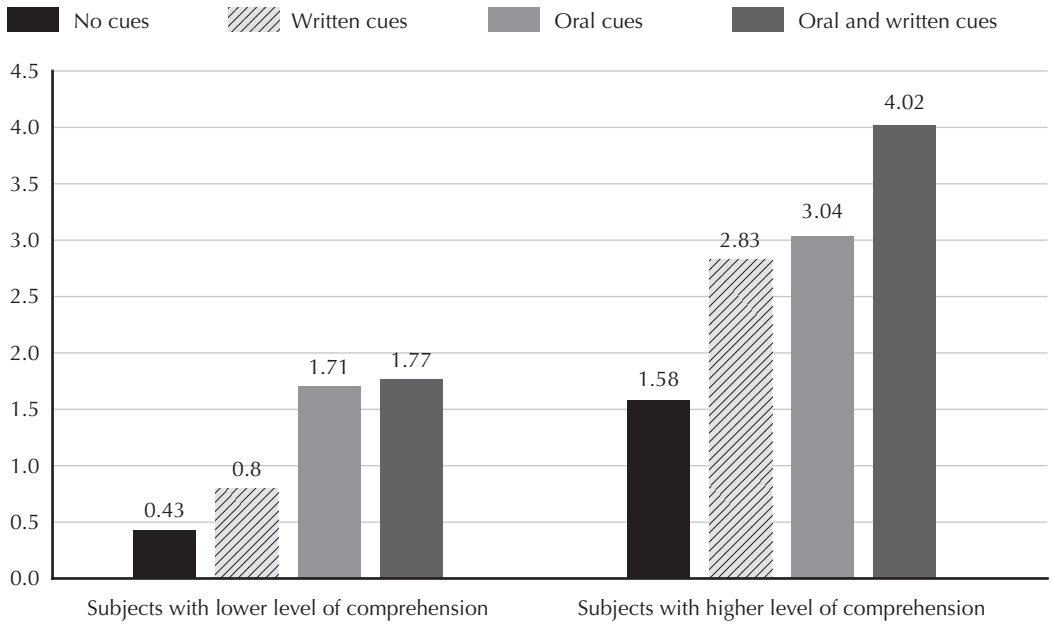

Figure 1. *Quality of the summary of a text (number of overall ideas and causal links) in four different reading conditions according to the cues received, differentiating between subjects with different levels of reading comprehension.*

Source: Prepared by the authors, based on Sánchez, García, & Bustos (2020).

Figure 1 shows a summary of the main results after dividing the sample by the median according to the subjects' performance on a comprehension test. Among the less proficient subjects, an ANOVA test showed differences in the quality of the summary (overall number of ideas and causal links) between the participants assigned to the different conditions, $F(3,183) = 9.31$, $p < .01$, partial $\eta^2 = .13$. Specifically, the less proficient subjects were able to benefit from the oral cues ($p < .01$, Cohen's $d = .82$), but not from the written ones, a condition in which they performed as well as those in the condition *without help* ($p = .25$). It should be noted that combining the oral and written cues did not provide any advantage over providing only oral cues ($p = .99$), reinforcing the role of the oral cue.

The summary prepared by the subjects with higher levels of comprehension was also affected by the reading condition, according to an ANOVA test, $F(3, 176) = 11.15$, $p < .01$, partial $\eta^2 = .16$. However, these students performed equally well when guided by written rhetorical cues and by the oral guides ($p = 1$), outperforming the condition *without help* in both cases ($ps < .05$, Cohen's $d = 0.68$ and 0.75). This result has an unmistakable Vygotskian quality, as it could lead us to believe that these students are acting by themselves, deciphering textual cues, as they had been doing during the joint readings with their teachers. However, if the data we have collected on educational practices are representative (Sánchez, García, & Rosales, 2010; Sánchez & García, 2015; Rojas, Meneses, & Sánchez, 2019), it is unlikely that the students receive the type of oral aids used in the experiment. Instead, in order to explain the growth of the students as readers, we have to consider that it is regular contact with texts, helped in a non-specific way by their teachers through questions they ask them, explanations they give them when they make mistakes, or tasks such as summarizing, which lead them to gradually pay attention to these expressions embedded in the texts and discover their value.

This overall result has certain implications with respect to understanding the needs of the students. The first is that there is indeed a dissociation between sensitivity to cues and the ability to carry out the course of action linked to them. This means that the less proficient students in this sample have resources that they

do not always know how to use because they are not sensitive to (and do not correctly interpret and evaluate) relevant cues such as the rhetorical devices in the texts or, as was more predictable, more subtle cues such as the difficulties they experience during reading.

This oral superiority disappears when students become more proficient in reading[6] and, particularly when their performance on the rhetorical proficiency test exceeds around 35% success (Sanchez et al., 2017). In fact, regression analyses conducted with different samples and materials reveal that rhetorical competence has a specific impact on students' performance that goes beyond that exerted by general comprehension skill, reading fluency, prior knowledge, or working memory (García, Bustos, & Sánchez, 2015; García, Sánchez, Cain, & Montoya, 2019; Sánchez & García, 2009, Sánchez et al., 2017, 2020).

As a consequence, we may conclude that a response in line with the needs of less proficient learners would be to provide cues they can identify, such as a teacher's verbal instructions during reading. This idea takes on particular significance if we consider that data from other studies suggest that full interconnection between the two skills requires a process of acquisition that takes many years of experience with expository texts (García et al., 2019; Sánchez et al., 2020; see also the data in Figure 1).

The Distance Effect

Being sensitive to textual cues is obviously not an all-or-nothing matter. We have data that show that when the task or text is less demanding (instead of offering an explanation for a phenomenon, the advantages and disadvantages of measures taken to solve a problem are listed), even fourth- and fifth-grade students benefit from the presence of organizational cues (as *a second advantage*) and can autonomously act strategically by selecting and organizing the appropriate information (Ferreira, 2018). But what is interesting in this study is that this success only occurs if there is a short distance between the presence of the cue and the paragraph in which the corresponding content is included (one paragraph), but if that distance is extended with another paragraph containing filler content, the readers lose the ability to select and organize the corresponding ideas. That means that their problem here was not that they failed to process the cues and convert them into reading objectives, but that they were unable to retain that goal when they had to use it to consult a large volume of information. This distance effect disappears in students in sixth grade and the first year of secondary education.

How can we explain that there is a distance effect in young learners and that it disappears in older ones? The answer can be found by considering the processes that students have to carry out (Sanchez et al., 2020) and which we have listed in Table 1.

6. It should be noted that, in the condición *without help*, the performance of higher level students is very limited, confirming once again that the presence of cues is decisive with texts that provide new and complex information (Britton & Gülgöz, 1991; Degand & Sanders, 2002; Kintsch & Yarbrough, 1982; Meyer et al., 1980; McNamara, Kintsch, Songer, & Kintsch, 1996; Sanders & Noordman, 2000).

Table 1
What strategic readers do

1. TPohey have to process the rhetorical cue (e.g., "a second advantage") to transform it into an objective for reading (e.g., "I have to look for a new advantage").
2. They have to *keep* that objective active in their working memory while reading and extracting information from the words and sentences of the text.
3. They have to *assess* whether or not *the information* they are extracting is consistent with the goal they have set (for example, "is this an advantage?").
4. If this assessment of the content extracted is positive, the process concludes by selecting it, and if it is negative, the reader will have to make a new decision as to whether or not to continue processing and assessing the following segment of the text. This is a double operation that will be repeated until they find what they are looking for.

Source: Prepared by the authors.

In the previous study we saw the specific problem of being *blind* to textual cues (i.e., to process 1 in Table 1). However, the data from this second study enable us to identify a more general problem that lies in the fact that all of these processes, since they are not automatic, consume memory and motivational resources, which are, by definition, limited. As a consequence, by repeatedly carrying out these extraction-evaluation-decision cycles, there is a corresponding increase in the probability of one of their components becoming particularly demanding at certain times and thus saturating the capacity of the working memory, which will tend to occur more frequently the less competent the reader is. Furthermore, if the reader experiences a large number of times that they do not find what they were looking for and must start a new cycle with new segments, this experience will tend to reduce their engagement with the task by increasing their disappointment and frustration (Pekrun, Frenzel, Goetz, & Perry, 2007).

This same conclusion is gleaned from one final study which we would like to mention (Sánchez, García-Rodicio, & García, 2021), in which students from the fourth grade of elementary school to the first year of secondary school were asked to read five different texts to look for possible factors on which breaking the record for the marathon race would depend. To do this, they had to select a maximum of six factors from 12 different ideas presented in the texts. The subjects were tested both on their understanding of the content of these 12 ideas (by means of a multiple-choice test) and on their ability to select the factors (by means of an essay that they had to write while reading). In addition, the subjects were assigned to two conditions according to the order in which they had to read the texts: text 1, 2, 3, 4, and 5 versus text 1, 4, 5, 2, and 3.

The most important result for this paper is that the younger students (fourth and fifth grade) were able to identify more factors in the earlier texts than in the later texts, while the older students (sixth grade and first year of secondary education) identified the same number of factors in both the earlier and later texts. The data show again, therefore, that although the younger students were able to operate with the contents of the texts by paying attention to their objective/criteria, they nevertheless experienced difficulties in maintaining that objective active while comprehending and selecting information across the whole set of texts. However, there was no ordering effect in the measure of content comprehension, that is to say, they understood the contents of the first and last texts equally well[7]. This result is important for two reasons: it excludes the possibility that students simply abandoned the task once they got past the first few texts, and it also shows that fourth- and fifth-grade students find it more difficult to assess what they understand to see if it is consistent with a criterion of relevance (in this case, being a decisive factor to improve a sports record) than merely to understand what they read.

7. This result suggests that it is possible to understand content and not select it.

Helping to Understand Versus Teaching to Understand

Looking at all the results obtained together, and returning to the objective of this paper (What do students need to be strategic and learn from academic texts?), the data inform us that some students have resources that they do not always bring into play, either because (1) they do not know when they are relevant or (2) they have difficulty handling so many different actions at the same time (extracting the meaning, selecting it according to a criterion, persevering with that criterion) just when they are learning to perform them. This conclusion is consistent with what Gersten, Fuchs, Williams, and Baker (2001) suggest in a review of teaching reading comprehension strategies: students with difficulties possess the tools required to process the information, but may not know when to use them in pursuit of an objective. The data we have summarized support this idea by offering a specific explanation and the evidence to support it.

Therefore, students in intermediate grades may need *support* that is based on their possibilities (by providing them with oral cues they can manage) and which meets their needs by helping them to complete the critical processes mentioned in Table 1, while creating a context that gives them the confidence that they will be able to achieve what is intended (see an example in the appendix).

This support could include moments to become aware of the processes that are being performed together: "We are going to see a new solution in this paragraph. Note that, if it says *in addition*, what it is telling us is that we are going to be able to understand a new solution that, remember, is not going to be found immediately. And, if we were looking for causes, it would mean that we are going to see another new one that is in addition to the previous ones." After this realization (and thanks to it), control could be transferred to the students in accordance with the Vygotskian view on the acquisition of higher mental processes (Vygotski, 1995).

Intervention aimed at *teaching to understand* puts students in a very different situation, because it leads them to think about the reading process itself. So, when teaching the *structure strategy* for example, it would be necessary to explain to them how *all* texts are organized and how they can be aware of how the text they have before them is organized. Therefore, during these training sessions, the focus is primarily on the processes of the student and secondarily on the content of the texts used (which, on the other hand, are not usually part of the textbooks being studied in each subject). This option undoubtedly has advantages, since what is learned can be used with any text in the future (Eason, Goldberg, Young, Geist, & Cutting, 2012; Hebert, Bohaty, Nelson, & Brown, 2016; Meyer et al., 1980; Williams, 2018), but we have to admit that what is learned in this approach, which is inevitably decontextualized, can be difficult to retain and transfer to other reading experiences. Also, the less proficient the students are, the more effort or cognitive load will be required from them in training and the subsequent application of what they have acquired. A greater cognitive load, when they already have a considerable one, may not be the best option. Finally, *teaching to understand* requires teaching reading strategies one at a time: that is, teaching a new strategy is not started until the previous one has been mastered. This limitation does not occur when *helping to understand*, because the support provided allows the students to deploy all of their resources simultaneously, which has been shown to be more effective (Gersten et al., 2001; Reutzel, Smith, & Fawson, 2005).

It may be that solution is, as noted above, to begin by helping to understand, then gradually becoming aware of the role of the help and, finally, dedicating time to systematizing this awareness, adopting the perspective of teaching to understand. However, at a later stage, it may be necessary to dedicate some time to provide help once again in order to consolidate and generalize the achievements made.

At the beginning of this paper, we said that we have to a good understanding of the students' challenge in order to be able to help them. We have seen that expository texts require the reader to interconnect complex forms of thinking (reasoning, decision-making, and problem-solving) with equally complex forms of language, which is a huge qualitative leap, and we can only be amazed that we are attempting to do this for the entire population.

Never before have we attempted, as we are *now* doing, to teach the *whole* population such a complex skill as comprehension and learning through texts. Faced with this challenge, we need to have knowledge and make improvements in educational practice, although assuming that what is already being done day after day with all students is the most relevant of what we can do. Based on this assessment, we can and should promote improvements such as those advocated here, being aware that these improvements will be slow and will require certain conditions (Sánchez & García, 2015).

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Appendix

Example of joint reading or helping to understand: it is understood that only the aids that seem necessary can be provided, which includes the possibility of reducing the number of them as the students increase their resources and their ability to autonomously deploy the processes involved. It is also easy to imagine that, once acquired by the student, they can be helped to become aware of them.

Help	Processes mobilized by the help	Examples of how to provide help
Help 1 "It is known that ..., but ..."	An objective is proposed that arises from contrasting what the student already knows (by making it explicit) and what they are going to read. From the start, this help facilitates them to coactivate the two representations (that of the reader and that proposed by the text) and the consequent identification of discrepancies in the form of gaps or errors.	- *It is known that* (makes the students' previous idea explicit): "When we are told about the Middle Ages, the idea comes to mind of a dark period of great poverty, and in which there are only a few castles and many villages, instead of the splendid cities and palaces that we associate with the Roman world. This idea that you have is logical, since it corresponds to the early centuries, in which the decadence with respect to the previous period was at its highest." - *But* (a discrepancy or error is noted): "But the Middle Ages were not always like that and, in fact, they were changing and moving towards our present world, which you will not be able to understand properly without understanding those changes." - *Objective*: "We are now going to read this text to understand how this change occurred and, in order to do that, we are going to differentiate between two stages: the High and Low Middle Ages."
Help 2 Structure	This help facilitates the overall process of knowing "what the text says" promoting the *structure strategy*.	"We are going to find three differences. And now, specifically, we are going to see the first of them in this paragraph."
Help 3 Selection criteria	With this help, the criteria are provided to select what is relevant according to the objective set.	"Read it carefully until you see exactly what it was that changed in the second period compared with the first."
Help 4 Macro-theme	This help identifies the macro-theme on which the overall idea that has to be developed is based in order to be summarized.	"I'll give you a hint: that change had to do with the way of life."
Help 5 Update of objective and structure	The same sequence of helps is reiterated in each segment of the text so that the objective can be maintained.	- "We have seen the first difference. Let's see the second." - "Remember that the idea is for you to identify what changed" - "I'll give you a hint: it has to do with the political organization." [The process would continue in a similar manner with the rest of the differences].
Help 6 Closure	The framework created in Help 1 is recapped as a preliminary step to promote the resolution of anticipated discrepancies that generates a profound comprehension of the text.	"We were seeking a more accurate idea of what the Middle Ages were like. What have we learned? ... Do we still see it as very different to our era? …" "I'll ask you a question: What would have happened to our world if the agricultural revolution had not occurred (or cities had not arisen)? (...)"

Source: Prepared by the authors.