

# READING AND COMPREHENSION AT THE BEGINNING OF SECONDARY SCHOOL: CONTRIBUTIONS FOR EDUCATIONAL GUIDANCE

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## Abstract

This paper develops the preliminary results of an ongoing research project that aims to characterize programs and proposals for intervention in reading comprehension (RC) and compare them with teaching practices in the first year of secondary education. Specifically, we discuss the program *Leer para Comprender* (Read to Understand), the program *LEE Comprensivamente* (READ Comprehensively), and the institutional frameworks of *Reciprocal Teaching* and the *Cultural Mediation Model* for Improving Reading: *Question-Asking-Reading*. In addition, some of the axes that can be derived from the analysis of the literature consulted are synthesized, such as: the importance of fluency in RC, the relevance of learning from the text, comprehension as a multi-componential phenomenon, and the importance of social interactions in the programs analyzed. The differences between the modalities presented by the proposals are explained, as well as their limitations in relation to the challenges involved in the management of progressively more complex texts and of a disciplinary nature in secondary education. Finally, we analyze the implications of the intervention in RC for educational guidance.

**Keywords:** Reading Comprehension, Text, Program, Secondary Education

## 1. Introduction

Reading and writing in modern societies have been characterized by their ubiquity. Much of the significant events in the lives of individuals and societies involve some kind of written documentation (Olson, 1997). Our comprehension of the world is increasingly mediated by the written word, both in its printed and digital form (UNESCO, 2013).

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The learning of reading and writing happens particularly in school and have been considered basic, instrumental school learning, and the privileged way of access to literate culture.

Likewise, particular challenges have been raised in the passage from primary to secondary education, related to the specific and increasing demands that students have for disciplinary texts and learning from them (Jetton & Lee, 2012). On the other hand, these requirements of the secondary level are coupled with some current concern about the actual educational trajectory of the students during the basic cycle. High rates of grade repetition, over-age and abandonment have been detected and, beyond these indicators, low achievement in learning (Terigi, 2007). For example, the over-age rate in our country, understood as the percentage of students whose age exceeds the theoretical age corresponding to the level they are studying (12-17 years for secondary school) reached in the year 2013 to 35.7 % of students in the basic cycle (INDEC, 2013). The over-age rate is an important indicator as it can be understood in relation to the late entry to the education system, abandonment and reentry and/or grade repetition. The other aspect mentioned, linked to learning, can be analyzed from considering some results of the last National Evaluation Operation carried out in 2013 (DiNIECE/ONE, 2013). If we consider the results of the mentioned Operation in the Language area, 25% of the students are in a low performance level. In general, these students can deal with superficial textual aspects, perform mechanical reading and partial re-reading activities to locate information in texts very frequented in the school. The percentage of students at this performance level, when it comes to the evaluation of knowledge in social sciences and natural sciences, amounts to approximately 50% of the evaluated subjects.

Additionally, the recent data published by the evaluation operation *Aprender* (In English, Learning), carried out in 2016, presents data that call for reflection on the problems that persist in the secondary level to reach the objectives set forth by the Law of National Education (Law No. 26206, 2006).

The operation categorizes the students' performance in 4 levels: Below the basic level, Basic, Satisfactory and Advanced.

According to the preliminary results, the students of 5th/6th year of secondary education only reached levels of satisfactory/advanced performance, in the area of Language, in 53.6% of the cases. In the areas of Mathematics, Natural Sciences and Social Sciences, these percentages are 40.9%, 63.7% and 58.9%, respectively (Secretary of Education Evaluation, 2017).

The data also show that low performances increase in students who have repeated 1 or 2 grades in relation to those who have never done so. Likewise, in the higher-income social strata, the percentage of students achieving better performance is higher than the middle and low-income sectors. Although the results are preliminary, from these we can infer that in the average level of education, significant inequalities persist (Secretary of Education Evaluation, 2017).

The set of considerations and data presented show a complex situation chart linked to the student's particular trajectories and difficulties, in addition to the poor

preparation of teachers to teach the strategies necessary for the comprehension of academic texts when the secondary level begins.

From a practical point of view and linked to the current schooling conditions of children and young people, it is important to investigate systematized proposals for intervention in text comprehension and the analysis of concrete teaching practices at the beginning of secondary school. Ness (2007, 2009), in the North American context, found that in 40 hours of classroom observation, only 82 minutes of instruction –or 3% of instructional time– was devoted to explicit teaching, modeling and scaffolding of students in text comprehension. Of that 3% instructional time, most of it was destined to answer literal questions and to request the written summary of a text.

From a theoretical point of view, research on textual comprehension and intervention for its improvement through specific programs has proliferated in the last decades. In 2000, for example, the National Reading Panel of the United States reviewed 215 studies on methods for improving textual comprehension (NRP, 2000). In 2014, Ripoll and Aguado conducted a meta-analysis considering 39 studies in Spanish concerning the effectiveness of interventions based on comprehension strategies. The authors point out that there is little or no dissemination of strategies, programs and intervention methods that have proved effective in the Spanish language. This contrasts with the Anglo-Saxon countries where evidence-based practice promotes the use of educational methods backed by research results.

The bibliographic survey allowed defining different intervention programs in RC that will be analyzed in this paper. The programs are conceived, in general terms, as organized, systematic, planned, theoretically grounded actions aimed at favoring the development of RC or addressing the difficulties detected in such development. They usually have a clear structure and include work materials to use with students and explanations aimed at educational agents who could initiate the intervention proposal. In some cases it is possible to find detailed guidelines that may be overly normative. In turn, some programs are linked to the development of RC evaluation instruments (Téllez, 2010).

## 2. Psychology and research in reading and text comprehension

Cognitive Psychology and Cognitive Psycholinguistics, which studies the psychological processes involved in the use and acquisition of language (Molinari Marotto, 1998), have allowed progress in the delimitation of the processes involved in the learning of written language. Piacente (2009) points out that, on the one hand, they have made it possible to specify the nature of this complex knowledge object by delimiting the cognitive demands involved in its learning. On the other hand, to identify the type of knowledge and skills needed to process such demands.

In this respect, the Rivière's proposal (1987) is considered pertinent, who when referring to Cognitive Psychology, maintains that it has the structure of a natural category whose limits are diffuse and its elements are not equivalent. From this consi-

deration, the author makes the following differentiation: in a narrow sense, Cognitive Psychology would include only computational models and information processing theories. In a broad sense, other theoretical models that have made contributions to the knowledge functions (Piagetian theory, the contributions of sociohistorical interactionism, among others) could be considered as Cognitive Psychologies.

Contributions of both the Cognitive Psychology of Information Processing (IP) and the sociogenetic approaches to mental functions are included in this paper. The Cognitive Psychology of IP has emphasized the study of the processes involved in reading and writing, aiming at the construction of universalist models of mental functioning. The progressive need to consider the importance of the interaction between cognitive, textual and situational factors in the processes of reading and writing has allowed a certain confluence between approaches which in principle are incompatible, such as those mentioned above (Polzelli Sweet & Snow, 2003; Silvestri, 2001).

In contemporary psychology, a strong dispute has been established between domain-general theories and domain-specific theories. The former argue that cognitive changes in one domain simultaneously affect the rest. The latter, on the contrary, consider that the human mind has specialized mechanisms for the treatment of information coming from different realms of reality, so that change in one domain does not necessarily imply change in the other. This dispute has also entailed the delimitation of specific processes related to the different domains in question (Enesco & Delval, 2006; Karmiloff-Smith, 1994).

Reading and writing began to be conceptualized as domain-specific cognitive-linguistic processes in which structures, mental representations, operations and strategies are involved. In both reading and writing, it was deemed necessary to distinguish two major sub-processes, one of a lower level –recognition and writing of words– and one of a higher level –comprehension and production of texts.

In relation to the former, following Morais (1989), it can be said that “to read, is to extract from a graphic representation of language, pronunciation and meaning” (p.85). Reading is based, in principle, on the basis of the automation of basic processes, such as the identification of written words. Alegría (2006) points out that this mechanism constitutes the “cornerstone of reading” and that “higher functions can only be fully expressed when the primitive functions have been sufficiently automated” (p.108).

In the initial learning, reading of words becomes relevant. For this it is necessary to master the alphabetical principle, when it comes to alphabetic writing systems, as is the case of Spanish.

But it is not an isolated domain –the domain of decoding– since the ultimate purpose of reading is the comprehension of progressively more complex texts.

Decoding and comprehension have a complementary relationship, although they imply different underlying processes and therefore involve differential evaluation and intervention resources. Fluid reading (reading with proper speed, accuracy and intonation) is a necessary but not sufficient condition for a comprehensive reading.

Fluency is not usually considered by teachers working with older children, mainly from the last years of primary school, and with adolescents and young people in secondary school, as it is conceived as an intervention object in the first years of schooling. In addition, it is perceived as a consequence of reading and not as an essential enabling factor (Guerin & Murphi, 2015).

Reading comprehension can be understood as a mental process of constructing meaning from the content of the text. When reading a text, a diverse and complex set of cognitive operations is brought into play. Comprehension is therefore the product of a process regulated by the reader, in which there is an interaction between the information provided by the text and the knowledge of the world stored in the memory (Gottheil, Fonseca et al., 2011; Graesser, Gernsbacher, & Goldman, 1997). It is a complex process involving linguistic, psycholinguistic, cognitive, cultural and other factors related to the personal experience of the subject. It does not constitute a unitary ability but integrates different competences (Abusamra, 2010).

### 3. Method

This paper adopts a qualitative approach linked to the exegesis of texts. It is a theoretical study based on the review and critical analysis of contributions of research on a particular theme, in this case, the intervention in text comprehension (Montero & León, 2007). It begins by considering, in principle, two meta-analyses (NRP, 2000; Ripoll & Aguado, 2014) that have focused on synthesizing research on interventions to improve reading comprehension in English and Spanish. In addition, a recently published book has been considered (Jetton & Shanahan, 2012), which has based several of its chapters on searches in the ERIC and PsycINFO databases, including the following terms: comprehension, comprehension instruction, learning with text, understanding text. The review allowed to delimit the relevance of certain authors and international working groups on the subject, such as the RAND Reading Study Group (Snow, 2002, Biancarosa & Snow, 2006), the group led by Guthrie and Wigfield (Guthrie, McRae, Coddington, Klauda, Wigfield & Barbosa, 2009; Guthrie, Wigfield, & Klauda, 2012) who developed an instructional framework known as CORI (Concept-Oriented Reading Instruction), among others. Likewise, it has been possible to corroborate an extended use of the instructional framework developed by Palincsar and Brown (1984) called "reciprocal teaching". Finally, two intervention programs developed and published by research groups with development in Argentina were selected, as it was interesting to consider local production (Abusamra, Casajús, Ferreres, Raiter, De Beni & Cornoldi, 2011; Gottheil, Fonseca, Aldrey, Lagomarsino, Pujals, Pueyrredon, Buonsanti, Freire, Lasala, Mendivelzúa, & Molina, 2011).

#### 4. Results

In recent years, interventions have been designed that tend to favor the development of comprehension in the form of programs. Many of them, based on cognitive and psycholinguistic theoretical frameworks, delimit areas or skills they intend to develop through what have been called “pencil and paper exercises”. Comprehension is understood as a multi-component process and those multiple skills involved in the construction of meaning from the texts become the object of the intervention.

Intervention programs developed to promote comprehension are briefly discussed below.

##### ***Reciprocal Teaching by Palinscar and Brown (1984)***

One of the so-called “instructional frameworks” most cited in the specialized literature is reciprocal teaching, a term coined by Palinscar and Brown (1984) to designate a set of strategies that can be taught to students to improve their comprehension (Rosenshine & Meister, 1994).

In general terms, the reciprocal teaching refers to a methodology that emphasizes the dialogical interaction of the student or the students with the teacher or, in some cases, with another student in the role of tutor. The central idea is that the subject who manages certain strategies shapes and regulates them to bring them into play when reading and understanding a text.

The methodology proposes four central strategies that should guide interaction: on the one hand there is clarification, which consists in the elucidation of words or parts of the text that are not clear. Another strategy is the summary, which consists of hierarchizing the information provided by the text as important or secondary. The formulation of questions refers to the strategy by which questions are asked to the text, again it demands the differentiation between main and secondary ideas, and the students are given certain clues to ask, along with the indicators: who, what, where, why and when. The last strategy is called prediction, and consists of the student anticipating what will happen in the following paragraphs of the text, making inferences and valuing them.

The instructional framework of reciprocal teaching is based on contributions from cognitive psychology and historical-cultural psychology. This influence is expressed in the following assumptions:

- All psychological processes first appear on an interpersonal and then intrapersonal level, hence the deeply dialogical character of the proposal.
- The most capable teacher or student serves as a scaffolding for the comprehension process, that is to say, reciprocal teaching is intended to be a zone of proximal development that mediates what the student cannot do only at present but can do it in the future.
- The activities of reciprocal teaching are proposed in context, i.e. that they are carried out with a certain clear purpose for the teacher and the student(s) and that this is done with complete texts that are significant for the actors.

***A mediational cultural model of reading instruction: Cuestión-Preguntar-Leer (Question-Asking-Reading) (Griffin, Díaz, King & Cole, 1989, quoted in Cole, 1999)***

At this point, an intervention experience is recovered to favor comprehension from the theoretical approach of Cultural Psychology. It is presented by M. Cole (1999) in his book Cultural Psychology. While reference is made to works from the 1980s and 1990s, they are interesting in that they conceive reading as a joint activity in which the way adults organize a “cultural medium for reading” is central.

This is a non-compulsory after school activity called *Colegio de Campo de Cre-cimiento* (Growth Field College). The aim is for children to participate in an activity that involves reading before they can read independently (progressive transfer of responsibility). It is about creating a structured medium for the development of reading that serves as scaffolding for children’s participation even before they can read. The activity involved 24 children divided into two groups of 12 each. Half of the children “fit into the clinical definition of students with learning difficulties”. Potentially interesting texts were selected for them. A procedure based on a set of tools, roles and division of tasks was used, inspired by the reciprocal teaching procedure of Palinscar & Brown (1984). Each role corresponded to a hypothetical part different from the whole act of reading. Cole (1999) represents the activity through the expanded mediational triangle proposed by Engeström (1987, 2001).

The global *Cuestión-Preguntar-Leer* structure included:

- Conversation about goals (long, medium and short term): debate on the various reasons that the children could have for wanting to learn to read.
- Distribution of roles (printed in cards): Each participant is responsible for playing at least one role in the entire activity. The person who asks about words difficult to pronounce; the person who asks about words difficult to understand; the person who asks about the main idea of the passage; the person who decides which subject will answer the questions asked by others; the person who asks about what is going to happen next.
- Silent reading. Distributing the text of the day, one paragraph at a time. The participants (including the instructor, a competent reader, usually a college student, and the children) read in silence.
- Performing the roles.

Cole is interested in the texts, the cards with roles and the selective disturbance of the fluid functioning of the Asking-Reading script. He focuses on the in situ process of coordination and incoordination around the scripted activity as a key source of data on the ability of individual children to internalize the roles contained in it.

***Program Leer para Comprender (Read to Understand) (Abusamra, Casajús, Ferreres, Raiter, De Beni & Cornoldi, 2011)***

It is an instrument to develop comprehension based on a multi-componential model of text comprehension that recognizes different areas organized in three major cores:

- Core related to content (including basic skills): includes areas of basic text outline, facts and sequences, and lexical semantics.
- Core related to the preparation (including processes of information integration): includes areas of syntactic structure, textual cohesion and inferences.
- Core related to metacognition (which focuses on monitoring and control skills): includes areas of text intuition, flexibility, and errors and inconsistencies.

These three cores converge in two other areas: text hierarchy (linked to the differentiation of main and secondary aspects), mental models and the constitution of the ability to understand texts.

A program has been designed for children between 9 and 12 years old and another program for the first three years of secondary school (1st, 2nd and 3rd).

The program selectively works on 11 areas. It is considered that to develop a complex skill it can be productive to operate in parallel –but independently– on some components. The ideal frequency of intervention is twice a week, 40 minutes each time. The training scheme can be applied individually or collectively. The general modality foresees an individual work phase and a group discussion phase on the results and difficulties of the tasks.

***Program LEE comprensivamente (READ Comprehensively) (Gottheil, Fonseca, Aldrey, Lagomarsino, Pujals, Pueyrredón, Buonsanti, Freire, Lasala, Mendivelzúa and Molina, 2011).***

It is a training program whose main objective is to learn, incorporate and reinforce reading comprehension strategies in 3rd and 4th grade children. It can be used in other levels according to reading competence, which is why it has been included in the corpus of analysis since in practice we have observed that it is possible to use it at the end of primary school and even at the beginning of secondary school.

There are two characters who will make a journey to learn to understand while enjoying reading: Leo and Lea\*. It is organized in 16 work units called stations, structured with the same format and sequenced in order of difficulty. Each unit is organized around three stages, according to the moment in which they work: “Before reading”, “Active reading” and “After reading”.

Each unit is organized from four axes, namely: vocabulary, monitoring or self-regulation of comprehension, production of inferences and comprehension of the text structure.

Unlike the previous one, it does not propose the parallel development of different components, but rather it organizes sequences in which different abilities linked to the axes proposed by the program can be developed simultaneously –from the reading of a brief text.

Analysis of intervention programs and literature related to them allows defining relevant themes for addressing educational guidance in secondary education with regard to promoting text comprehension, namely:

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\* Translator’s Note: it is a play on words in which the names of the characters Leo and Lea can be translated literally as “I read” and “you read”, respectively.

*a. Reading fluency (RF) and its consideration as a multidimensional construct that maintains complex relationships with reading comprehension (RC)*

Although many of the proposals for intervention in TC (Text Comprehension) do not include tasks related to RF, all converge in pointing out that it is a necessary but not sufficient condition for the reader to construct meaning by interacting with written material.

González-Trujillo, Calet, Defior and Gutiérrez-Palma (2014) point out that there is a lack of consensus in the definition of fluency. They developed a scale in Spanish that allows examining it as a multidimensional construct. Besides speed and precision, prosody is considered. The latter includes four main dimensions: the volume of reading, associated with the intention of the text; the intonation of different types of sentences; the pattern of pauses; and the segmentation of the text into significant blocks. Also, the authors indicate that studies analyzing the relationships between RF and RC indicate a relationship between fluency and prosodic reading, as well as a causal relationship between prosodic reading and reading comprehension.

In a recent article, Guerin & Murphi (2015) point out that prosody is a central element of fluency. It is a term used to describe how subjects who read fluently use accent, tone and intonation to communicate the meaning of what they are reading. Instruction focused on the prosodic characteristics of reading is recognized as an important part of programs that tend to strengthen adolescent reading skills. Studies indicate that there is a strong correlation between oral prosody and silent comprehensive reading. Wharton-McDonald & Swiger (2009) point out that automatic word recognition and fluency are requirements for comprehension. Rasinski and colleagues (2005) reported that fluency accounted for 28% of the difference in comprehension in one of their studies.

However, these results derived from the research have not significantly impacted on practices, as it is often uncommon to observe interventions in classrooms that attempt to guarantee improvement in reading fluency among adolescents.

*b) Academic language and reading comprehension*

Vocabulary is an area considered as a priority in reading comprehension studies and in intervention programs that aim to promote or improve it.

Jetton and Lee (2012) argue that the vocabulary used in disciplinary texts typical of secondary school may be difficult for adolescents to understand for two reasons. First, because the words that students could normally know and use in their everyday language have specialized meanings in the texts of the different disciplines. Second, disciplinary texts contain a highly specialized vocabulary relevant to the discipline but infrequent in everyday contexts. For example, the concepts of meiosis and mitosis in biology. Likewise, the authors reflect on the high level of abstraction that the disciplinary vocabulary implies, as well as a certain impersonal and authoritarian tone that is usually used in the texts to generate objectivity and credibility, which may be unattractive for the adolescent reader.

Uccelli and Meneses (2014) indicate that the development of language (which is obviously not reduced to vocabulary) during preadolescence has received scant at-

tention due to the belief that the process of language development is mainly limited to the first years of life. They argue that while recent studies begin to identify preadolescence as a stage of significant growth in academic language skills, some experts have emphasized that this construct has so far only imprecise or reductionist definitions. Therefore, they raise the importance of making progress in the identification of key academic language skills (KALS), which include but goes beyond vocabulary. This becomes relevant to expand knowledge about language development and to provide evidence that clarifies the relationship between language and reading comprehension and, in this way, to design pedagogical interventions that improve the comprehension of academic texts.

The KALS construct has allowed to specify a set of trans-disciplinary language skills that correspond to recurrent linguistic resources in academic texts, but infrequent in everyday language (Uccelli & Meneses, 2014; Snow & Uccelli, 2009).

*c) The multi-componential conception of comprehension as the basis for the construction of intervention proposals*

The intervention programs considered, based on the contributions of Cognitive Psychology and Psycholinguistics, adopt a focus of comprehension that emphasizes their multi-componential nature. That is, multiple processes and skills are involved. These are operationalized within the programs in the various activities that are proposed to the subjects to improve their performance in comprehension tasks. In its review, the National Reading Panel (NRP, 2000) specifies, for example, seven important strategies to promote the development of RC: the monitoring of one's own comprehension, cooperative learning, graphic organizers, instruction on the structure and content of narrative texts, the answer to questions, generating questions and the summary.

*d) The importance attributed to the interactions and the format they assume in the intervention programs*

In the review, an instructional framework that is usually taken up is the so-called "reciprocal teaching", originally proposed by Palincsar and Brown (1984). It implies the establishment of a dialogue between teacher and students in relation to a written text that is intended to be understood. Meaning is built collaboratively through four main activities: summarizing, clarifying, formulating questions and predicting. These activities acquire value insofar as they imply the development of specific comprehension strategies. In principle, two strategies are transversal to the whole development of the activity: one is the understanding of the purpose of reading and the other is the activation of relevant prior knowledge. It is also mentioned the realization of inferences, the differentiation between main and secondary ideas, the critical evaluation of the internal consistency of content and the monitoring of one's own comprehension.

The programs analyzed differ in the importance attributed to the format of social interactions (between teacher and students and/or between peers) during the comprehensive reading. In some cases they only introduce general indications linked to the importance of establishing an adequate rapport and differentiating an individual

work moment from a collective one that works more as a space for review of the exercises solved than as a space for joint implementation of an activity.

In other cases, the very structure of the intervention is organized around exchanges, although without ignoring the processes or strategies whose development needs to be promoted.

### 5. Implications for educational guidance

An issue to be addressed refers to how this set of knowledge –mainly from research– can be updated in the design of psychoeducational interventions in the school context. That is, how can the educational psychologist design interventions that promote the learning of reading and writing and prevent possible difficulties in the process when developing her/his work in a school?

To begin, it is possible to establish some general lines of action related to literacy, which can be derived from the role, functions and responsibilities of the Educational Advisor (EA), as referred to in Provision 76/08 (Modality of Community Psychology and Social Pedagogy). This is interesting because the Educational Psychologist (hereinafter EPs), in the role of EA, can integrate the so-called School Counseling Teams (SCT), whose action is specified in the aforementioned provision.

A first issue that can be pointed out is linked to the intervention of the EA in the collective construction that implies the Institutional Project. Here the key is the possibility of becoming someone capable of making literacy visible as a process registered in the framework of this Project. This implies understanding the central role of learning to read and write for the promotion of enriched educational trajectories. In turn, it involves assuming a perspective of the process (not a learning process that happens from one moment to another) and co-responsibility (responsibility is distributed, not encapsulated in the figure of a particular agent, although there may be different levels of responsibility).

A second issue refers to the level of knowledge that the EPs has of the current Curricular Designs for the level at which she/he will intervene, specifically in the area of Language Practices. Here the intervention can assume the format of cooperation with other agents in the critical analysis and the implementation of the mentioned Designs.

Thirdly, collaborative work with directors, teachers and family is essential for the creative design of literacy proposals that attend to the particularities of the educational community –mainly that of the subjects of learning– and that favors the reflection on the practices and the results obtained from them.

Tellez (2004), a professor in the Department of Research Methods and Diagnosis in Education at UNED, presents three main modalities of intervention of the EPs in the teaching and learning processes of reading and writing: infusive, additive and intermediate intervention strategies.

Infusive strategy implies that the intervention in reading and writing is included in the curriculum as part of the lesson planning and in each of the subjects and areas of

knowledge. It involves working on the institutional project and lesson planning, so it requires teamwork. Therefore, a transversality of the procedural contents is needed, which is linked to a collaborator-dynamizing model.

One of the advantages of this working methodology is that the problem of transference is avoided, both by the teacher and by the students, since it favors the use of strategies in specific contexts.

The difficulties are related to the lack of concrete programming to follow and the need to arrive at a shared work plan which requires a high level of motivation and involvement of teachers, as well as high training requirements.

Instructional frameworks such as Reciprocal Teaching and Question-Asking-Reading, which do not have a pre-established sequence of activities or working materials, are possible to articulate with infusive-type strategies.

The additive strategy refers to the application of a specific reading and/or writing program, at a given time, in a way that parallels the dynamics of the classroom. According to Repetto (2003):

“In educational guidance, a program is understood as any preventive, evolutionary, educational or remedial activity that, theoretically based, systematically planned and applied by a group of professionals in a collaborative way, aims to achieve certain objectives in response to the needs detected in a group within a context...” (p. 295)

The advantage of this work methodology is that it allows giving theoretical foundation to the intervention and offers a designed sequence of activities oriented towards the achievement of the proposed objectives. In addition, it makes it possible to organize and use time better, devoting most of it to achieving the program objectives.

Disadvantages refer to the difficulty of transferring learning to other contexts other than that in which such learning has taken place. On the other hand, the application of the program is usually restricted to a specialized professional or to some teacher. This makes it difficult to involve other agents in the process and, consequently, there is little incidence in the overall dynamics of the institution.

As a result, their integration into the curriculum is difficult. In relation to students, the saturation of school hours makes it difficult to devote a specific time to the implementation of these programs. The Program *Leer para Comprender* and the Program *LEE* are clearly examples of this intervention strategy.

The intermediate strategy seeks to go from the application of the program towards curricular infusion. It starts from the application of the program. This is complemented by working groups in the institution to encourage reflection and assessment of the activities carried out. Participants in these groups are those who apply the program and other teachers interested in incorporating new strategies to the daily dynamics of the classroom.

Among the advantages, it should be noted that this strategy favors the transfer, since it is possible to start using the program materials to gradually include those ma-

materials with which teachers work in their classes. Programs can become a mediator of learning for both teachers and students.

Another interesting work methodology to improve text comprehension in the school refers to the intervention based on projects (Diseño Curricular para la Educación Primaria, 2008). A project means a sequence of teaching situations that extend over time (one or two months or even a whole quarter) with a daily or weekly frequency and involve the development of a tangible final product. It can start from the collective elaboration of a project linked to literacy (for example, reading and writing horror stories or fables to produce a book to be presented at a school or cultural event). This project could be developed transversally in different courses and interventions could be based on current knowledge about reading and writing. Learning spaces can be designed linked to a single course or shared between different courses, which may even take place outside the classroom.

### 6. Discussion and conclusions

Studies on text comprehension made in the last decades fundamentally pick up the contributions of Cognitive Psychology and Psycholinguistics, which conceive it as a multi-componential construct. From the results obtained in numerous investigations, intervention proposals have been designed pursuing the objective of developing text comprehension in subjects with or without difficulties.

In the programs described, the role of vocabulary, prior knowledge, inferences and metacognition is emphasized, in accordance with research on the subject. However, they differ in different ways: in the way activities are organized and sequenced (for example, by “areas”, homogeneous in content, linked to the processes to be developed or by “stations”, heterogeneous in content, in which various cognitive processes are used “before”, “during” and “after” reading a text), in the role attributed to social interactions during the development of the proposal, in the mode of administration, among others.

The research that focuses on the learning made by adolescents from the texts raise questions about the way in which the different strategies or processes that are developed through the programs are put into play when it comes to addressing disciplinary texts characterized for its highly specialized and technical nature. Another central aspect is related to the specificity of the school context and the possibilities and limits when using the programs in this area.

Intervention modalities such as those described by Cole (1999) or the “Reciprocal Teaching” model (Palincsar & Brown, 1984) can easily be recontextualized in high school lessons. In this sense, it is an objective of the research in which this paper is recorded to analyze comparatively the set of proposals organized in the form of programs that aim at the development of RC and everyday classroom practices at the beginning of secondary school. In research carried out by Ness (2007) it was found

that only 3% of the instructional time was devoted to explicit teaching, modeling and scaffolding of students in text comprehension in the usual school classes.

Reading is a complex human activity that requires specialized forms of interaction for learning. It has been considered to involve the mastery of decoding processes at the same time as the construction of meaning from the text.

Research related to intervention programs in TC allows defining some challenges related to teaching.

The teaching of reading does not end when students demonstrate reading a text aloud correctly. Someone can decode fluently but not at all understand what they read. The development of comprehension implies the participation of high order processes such as the syntactic and semantic elaboration of sentences, the integration of information, the realization of inferences, and non-automatic processes involving a great amount of cognitive resources.

However, learning to read fluently is far from being a secondary learning. Fluency is not usually considered by teachers working with older children, mainly from the last years of primary school, and with adolescents and young people in secondary school, as it is conceived as the object of intervention in the first years of primary school. It is also perceived as a consequence of reading and not as an essential facilitator (Guerin & Murphi, 2015).

On the other hand, when children start secondary school, the development of language has not yet been completed. Learning from the proper texts of the different disciplines implies mastery of many skills linked to academic language, which must be taught.

Finally, the review emphasizes the importance of the format adopted by interactions between teachers and students and/or between peers in the learning and teaching of comprehensive reading, understood as a process of problem solving. As Cole (1999) points out:

“...we believe that the success of adults' efforts depends crucially on how they organize a 'cultural medium for reading' that has the properties of culture that I have been emphasizing here: it must use artifacts (mainly text, but not only text), it must be proleptic, and must orchestrate social relations to effectively coordinate the child with the mediation system to be acquired” (p. 240).