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Local Coherence in Persuasive Writing: An Exploration of Chilean Students’ Metalinguistic Knowledge, Writing Process, and Writing Products

Soledad Concha¹ and Jeanne R. Paratore²

Abstract
This study focused on 12th-grade Chilean students’ ability to produce locally coherent persuasive texts and on the cognitive basis that underlies this ability. All the participants wrote persuasive texts and answered a test of recognition of incoherent sequences. A subsample wrote another persuasive text while thinking aloud and had a semistructured interview about the text composed. Quantitative and qualitative methods were used to analyze local coherence (LC) in students’ writing and the relation between products and students’ ability to recognize, explain, and self-regulate LC. The majority of students composed texts that were mostly coherent although ideas were presented in long unstructured sequences that did not use the more sophisticated LC resources to construct their reasons and opinions in writing. Findings suggest an association between being able to recognize incoherent sequences, using

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more sophisticated LC resources in writing, and being able to explain and self regulate LC during writing.

**Keywords**
connectives, rereading, self regulation, metalanguage, cohesion

The current Chilean Spanish language curriculum for High School Education aims to develop students’ comprehension and production of complex written and oral discourse that are frequent in private and public situations in society (Ministerio de Educación [MINEDUC], 1998); specifically, 9th grade is dedicated to dialogic and informative text, 10th grade is dedicated to expository text, 11th grade to argumentative or persuasive text, and 12th grade to texts that are used in the public sphere. The declared goals include preparing students to (a) successfully communicate in different situations, (b) be able to learn from different sources of information during their lives, and (c) actively participate in the social, political, economic, and cultural realms of society (p. 35).

The curriculum’s Fundamental Objectives emphasize students’ ability to organize their ideas, to write coherently and cohesively, and to adapt to the audience and context of communication (MINEDUC, 1998). The curriculum Programs, on the other hand, provide details about the linguistic features of each of the above mentioned types of texts. For example, the 11th-grade Program (MINEDUC, 2000) mentions the kinds of connectives that are typical of persuasive texts and should be used to coherently relate parts of discourse (causal, consecutive, adversative). Students should understand the meaning and function of these resources, recognize them, and use them to construct their reasons and opinions through writing, in order to rationally (their term) influence their readers (p. 80).

Unfortunately, there is scarce evidence available to determine whether the Chilean curriculum has been successful in developing students’ ability to communicate coherently through persuasive writing (Parodi, 2000). To the best of our knowledge, no evidence is available of Chilean students’ knowledge of persuasive writing coherence, or of the strategies they use to achieve local coherence (LC) during writing.

Learning more about writing with LC and its cognitive basis is not just relevant for the Chilean academic community. Studies done in the United States and abroad have found that writers of different ages and backgrounds can fail at establishing appropriate relations between old and new information in writing (Amengual, 2002; Bereiter & Scardamalia, 1987; Wikborg, 1990).
Nonetheless, there has been limited study of this problem that could inform writing education. Studies in LC have mainly described the concept from a textual perspective as well as from a cognitive perspective in relation to reading (Charolles, 1983; Hobbs, 1983; van Dijk, 1998); however, there is limited evidence of the exact knowledge of LC and the kind of writing process required for locally coherent writing (Couzijn, 1990; Cutchen & Perfetti, 1983; Lee, 2002; Wright & Rosenberg, 1993).

This study explored 12th-grade Chilean students’ performance in persuasive writing and the cognitive basis that underlies this performance. Because the above mentioned curriculum has a clear emphasis on communication, the exploration was narrowed to the problem of coherence. Specifically, the study investigated students’ command of the linguistic resources with which coherence can be achieved at the local level of discourse as well as the knowledge and writing process that underly locally coherent writing. This work, however, is not only concerned with the cognitive dimension of LC, but rather situates the problem in a particular cultural space. In effect, the object of study stems from a consideration of the complex conventions that rule LC in Spanish academic writing (Cuenca, 2003; Simpson, 2000), which pose the Chilean school system a big challenge in preparing our students to communicate in higher education communities.

The following research questions guided the study:

*Research Question 1:* What characteristics of local coherence are evident in 12th-grade Chilean students’ persuasive writing?

*Research Question 2:* What knowledge do they have of local coherence in writing?

*Research Question 2.1:* Do they recognize incoherent sequences in texts they read?

*Research Question 2.2:* Can they articulate their understanding of local coherence?

*Research Question 3:* What strategies do they use to achieve local coherence in their writing?

*Research Question 4:* Is there a relationship between knowledge, regulation, and local coherence in their persuasive writing?

**Theoretical and Research Rationale**

In this section, we describe the theory and research that guided this investigation. We begin with a definition of LC, followed by the characteristics of LC in Spanish academic writing and in persuasive writing. The review is
completed with theory and research that contributes to our understanding of the cognitive basis of LC in writing.

**A Definition of Local Coherence**

LC has been defined in the literature as the relationship between adjacent propositions in text (Cutchen & Perfetti, 1983; van Dijk, 1998; van Dijk & Kintsch, 1983; Wright & Rosenberg, 1993). The same phenomenon has been investigated in studies concerned with logical relations (Grize & Pieraut-Le Bonniec, 1995), relations of coherence (Knott & Sanders, 1998), sentence roles (Matsuhashi, 1981), rhetorical predicates (Durst, 1987; Jacobs, 1990; Langer, 1986), and idea coordination (Bereiter & Scardamalia, 1987).

As explained by van Dijk (1998) and theorists of text linguistics (see Charolles, 1983; Hobbs, 1983), adjacent propositions in discourse can be connected by means of textual resources as well as by topical relations. Coherence is not merely a property of texts but rather the result of a complex interaction of semantic, pragmatic, and logical principles that both writer and reader activate in order to construct a coherent meaning for texts (Lee, 2002). In fact, two propositions can be connected in the surface of text and yet hold a semantic relation that is not interpreted as coherent by the readers. As proposed by Charolles (1983), the reader, as an active problem solver, retrieves a series of concept frames to tie together the events or ideas presented by the writer. If adjacent events or ideas in text do not belong to the same frame, then the reader perceives incoherence at the local level of text. For this reason, the writer has the responsibility of guiding the reader’s inferences toward a comprehensible intended meaning (Hobbs, 1983, p.29). Moreover, the reader who is able to construct coherence between adjacent propositions will later be able to integrate these pieces to build the meaning of the whole text or the global coherence (Kintsch & van Dijk, 1978).

The concept of cohesion developed by Halliday and Hasan (1976) is closely related to the definition of LC although their description of the relationships between parts of text focuses on the semantic relations that exist within the text (p. 4) instead of involving, as well, the writer and the readers’ active problem solving in the construction of those relations, in a more cognitive stance (Lee, 2002). Particularly interesting for the present study, Halliday and Hasan (1976) provide a very relevant description of the meaning and operation of the different connectives with which parts of text can be semantically related beyond the sentence, creating the texture that characterizes cohesion. Their description emphasizes the power of connectives to create anaphoric relations that interrelate large portions of text into new structures.
Specifically, they distinguish between conjunctives that can be used to create a single whole out of several different ideas, from elementary logical relations (p. 233) marked by connectives like “and” and “or,” which do not impose much texture to the text other than the coordination between two ideas that have the same status.

As the authors explain, connectives can be distinguished that have more retrospective or retrojective power (Halliday & Hasan, 1976, p. 236) as would be the case of the adversatives (i.e. however, nevertheless), which signal to the reader that some information previously said in text has to be considered in order to understand the upcoming information. Additive connectives have primarily a projective power, especially when used to signal the reader that more information is going to come (i.e., “and then,” “also”). According to the authors, however, additive relations can create more texture if used to enumerate information beyond one sentence or even several paragraphs. For example, if a writer announces that a series of arguments or aspects will be presented and proceeds to their enumeration through a large portion of the text, marking each new element of the series with a connecting expression or a conjunctive (i.e., “in addition to this,” “another important element”).

Halliday and Hasan’s (1976) work is relevant for this study because of their description of larger portions of textual information that can be dealt with simultaneously and transformed into new structures as well as the role of connectives in marking those relations in text. From the perspective of LC, these textual resources can be taken as part of the “range of coherence-creating devices” (Lee, 2002, p. 139) that writers have available to accomplish coherence.

**Characteristics of Local Coherence in Spanish Academic Writing**

It is relevant to mention here studies that describe the complexity of LC in Spanish academic writing, to illustrate the discursive conventions (Carlino, 2005) that rule LC and are part of written communication in higher education in Chile. Spanish and English writers differ in the ways in which they construct academic texts, and these differences reflect cultural and cognitive characteristics of the two academic communities (Cuenca, 2003; Simpson, 2000). While expert writers of English write paragraphs with more and shorter sentences and tend to construct a linear, deductive composition, Spanish academic writers have a more elaborate style, with longer sentences with many clauses, with which they construct more flexible structures (Simpson, 2000). According to Simpson (2000), these Spanish conventions can be perceived as
low quality by English writers who favor a more reduced and information-oriented style. Specifically related to LC, Cuenca (2003) analyzes reformulation markers in Spanish, English, and Catalan’s expository writing. In her work, reformulation is presented as a semantic category that encompasses a series of rhetorical relations, such as specification, explanation, and summary among others. Within the texts analyzed, Cuenca (2003) found that English texts “include[d] eight reformulation markers, while the Spanish and Catalan texts include[d] seventeen different forms” (p. 1080), which supports the more elaborative and complex style preferred by Spanish writers. The author also observed that the English texts typically exhibited simple reformulation connectives (e.g., “that is,” “or,” “i.e.”) in contrast to Spanish and Catalan writing, in which the language offers numerous lexical variations for each connective, and connectives tend to be more complex in terms of clausal structure. Both studies summarized suggest that proficient Spanish academic writing requires domain of a large repertoire of connectives as well as the ability to interrelate large portions of text. Such evidence could support a relevant discussion about the role of the Chilean school system in preparing students for these challenging academic conventions.

**Characteristics of Local Coherence in Persuasive Writing**

Following Crowhurst (1990), for the purposes of this work, persuasive writing will be considered as writing that takes a point of view and supports it throughout discourse. In her earlier work, Crowhurst (1981) used Halliday and Hasan’s (1976) categories of cohesion to compare 6th-, 10th-, and 12th-grade Canadian students’ persuasive writing. Results showed that older students were more able to connect parts of text by means of cohesive ties that imposed more texture and structures more typical of persuasive writing. Twelfth-grade students had a tendency to foreshadow arguments that would be developed later, to elaborate their arguments and to sum up their position at the end of the text. They imposed this internal structure to text using long-distance ties, repeating lexical items, referring to a previous item using a different word, and by using more complex conjunctives with a reference power that helped mark the structure of their argument. Regarding conjunctives, Crowhurst (1981) observed that although the same kinds of semantic relations occurred across grade levels (temporal, additive, adversative, and causal), older students went beyond the simpler conjunctives (and, also, but, so) and used a variety of conjunctives (i.e., however, in conclusion, in the first place) that enabled them to make reference to the previous and upcoming text, thus constructing internal structures by interrelating their ideas. With age, the simpler
conjunctives continued to be used but lowered their absolute number and percentage compared to the more sophisticated ones. As a concluding remark, Crowhurst suggests that future studies should go beyond the mere counting of proportion of cohesive ties and explore they ways in which writers use them.

**Knowledge of Local Coherence: Implicit or Explicit**

The fact that children develop the ability to relate ideas in writing does not imply that they are able to reflect on this knowledge or to manipulate it in order to perfect their written products. This distinction between implicit and explicit knowledge has been addressed many times in the literature although very little attention has been paid to the particular case of knowledge of LC. For example, Piaget (1976) dedicated a book to his studies on children’s cognizance, or their ability to be aware of their behavior and to explain the steps involved in it. Similarly, a central idea in Vygotsky’s (1934/1986) theory of intellectual development is the acquisition of conscious awareness and deliberate control over our mental processes.

Studies in the field of metalinguistic awareness have explored the quality of knowledge that individuals require in order to analyze and control linguistic performance. Metalinguistic awareness has been defined in the literature as the “conscious reflection on, analysis of, or intentional control over various aspects of language—phonology, semantics, morphosyntax, discourse, pragmatics—outside the normal unconscious processes of production or comprehension” (Karmiloff-Smith, Grant, Sims, Jones, & Cuckle 1996, p. 198). According to this framework, subjects’ ability to analyze and control their linguistic knowledge can have two distinct levels of performance: implicit and explicit. The former is displayed, for example, in tasks that prompt the detection and correction of grammar mistakes, activities that require revision of the knowledge of grammar but don’t necessarily involve explicit knowledge of it. The latter level is displayed in tasks like definition of words or explanation of grammatical errors and requires explicit knowledge of the units and rules of language. According to Galambos and Goldin-Meadow (1990), there is a normal course of development of metalinguistic awareness for monolingual speakers, and explicit analysis of linguistic knowledge is at the end of this path. In this framework, literacy instruction is recognized as enhancing the acquisition of explicit analysis of linguistic knowledge because it provides experience decontextualizing, identifying, and reflecting upon the different aspects of language, which in turn has a positive effect on reading and writing performance (Bialystok, 1992).
Thus the framework of metalinguistic awareness proposed by Galambos and Goldin-Meadow (1990) provides relevant tools for exploring the quality of knowledge that writers can possess about LC, although—to the best of our knowledge—their conclusions have not addressed this particular linguistic knowledge. Most relevant to this study is the relation proposed between students’ ability to verbalize their linguistic knowledge and their experiences with instruction.

Still another element to consider in relation to verbalization of knowledge is subjects’ ability to use technical language when defining concepts. This ability, which clearly results from formal instruction, does not merely affect students’ capacity to communicate their knowledge to others but also has a role in organizing their reasoning about different concepts. Although not in relation to knowledge of LC, Camps, Guasch, Millian, and Ribas (2000) as well as Dolz and Erard (2000) introduce in their work the distinction between metalinguistic activities and metalinguistic terminology or metalanguage of several concepts involved in the writing process. These authors propose that collective metalinguistic reflections—such as a discussion of these concepts guided by a teacher—provide students not only with the opportunity to reflect on their own cognition but also offer a social, communicative, and linguistic space in which specific knowledge of language and text are discussed. As a result, students acquire the specific words to talk about the knowledge and strategies they use during different writing tasks as well as the practice on how and when this kind of talk should take place. This technical language enhances students’ ability to think and talk about language elements and processes.

Having the ability to reflect about language as well as specific knowledge of metalinguistic concepts has also been related in the literature to more advanced levels of literacy required not only in school but also for active participation in society (Olson, 2009). Although it can be said that much of the advanced or academic literacy conventions must continue to develop in specific academic or professional contexts, it is also possible to distinguish some “generalizable literacy skills and practices that can be applied in a variety of contexts . . . that may be taught and assessed by schools” (Norris & Phillips, 2009 in Olson, 2009). Among these advanced skills, Olson (2009) mentions the ability to reflect on language and the mastery of metalanguage discussed in this section.

**The Process of Writing With Local Coherence**

Studies suggest that LC or “idea coordination” (Bereiter & Scardamalia, 1987) develops along with students’ capacity to keep in mind the topic of the
text and the content of the neighboring ideas during writing. In terms of
information processing demands, Bereiter and Scardamalia suggest that LC
is one of the two top priorities that writers should control during writing
together with the need to produce sufficient language to fill the perceived
social void.

Few studies have investigated the writing process that leads to locally
coherent writing; however, there is some indication that the process of writ-
ing locally coherent nonnarrative texts can be more challenging than the
process of writing locally coherent narrative texts. Bereiter and Scardamalia
(1987) observed that 5- and 6-year-old children could produce coherent nar-
native texts, which the authors attribute to the simpler processing demands
of the narrative schema. In the case of personal narratives, children must
apply to their discourse the order in which the events are represented in their
memory, thus imposing no demands on transforming the information in text.
In the case of fiction, the authors maintain that the process is simplified by
the existence of a stable representation of the narrative schema: no attention
is necessary to transform information into that framework. Interestingly, the
narrative schema is so readily available during the writing process that writ-
ers tend to apply it when the task demands the application of other academic
schemas (Durst, 1987).

Bereiter and Scardamalia’s (1987) description of the development of “idea
coordination” is part of their larger model of the writing process of novice and
expert writers. According to this model, given a familiar topic, novice writers
reduce the writing task to an automatic “downloading” of ideas from memory
(“knowledge telling”), without transforming those contents according to
semantic or pragmatic considerations. In contrast, expert writers will be able
to consider not only the content level but also the rhetorical level, referred to
as “knowledge transforming” because contents are transformed by the writer
by means of different linguistic resources in order to meet the communica-
tional needs.

Research on first and second language writing indicates that the main dif-
ference between proficient and poor writers is in their writing processes, par-
ticularly on the different strategies they utilize (Victori, 1999). Victori notes
that to apply useful strategies, writers first must have knowledge of the
requirements of proficient writing, of the demands of different writing tasks,
and of how and when to apply these strategies. In a study of 4 college-level
ESL writers, Victori found that students who performed better in essay writ-
ing (better organization, content, cohesion, vocabulary, and grammar) tended
to focus their attention on global text-level problems (e.g., coherence, idea
organization) while writing an argumentative essay. Students who obtained
lower scores on their written products focused attention on vocabulary and
grammar while writing their essays. Successful writers also had better knowledge of the requirements of proficient writing, such as the role of content, coherence, order of ideas, cohesion, and clarity, and having that knowledge correlated with the use of strategies to monitor those elements during writing. Victori concluded that less successful writers did not use strategies to monitor discourse level requirements because they lacked the appropriate knowledge about the importance of those elements.

In this section, we have reviewed studies that highlight the importance of LC for written communication, the characteristics of LC in persuasive writing, as well as in Spanish academic writing. As a whole, the reviewed studies imply that an exploration of the cognitive basis that underlies locally coherent persuasive writing should consider students’ knowledge, processes, and instruction experiences. The review also suggests that there is a research gap regarding the cognitive basis of LC that could inform writing instruction.

Method

The methodological design of the study combined qualitative and quantitative methods. This section includes a description of the participants and of how data were collected and analyzed. Procedures for data collection and analyses are included for each of the four tasks completed by participants.

Participants

Ninety-four students were recruited from two different urban public schools in Santiago, Chile. To ensure equivalent performance levels between schools, institutions were selected that had historically obtained scores on the literacy SIMCE test that were representative of their type of schooling. Regarding SES, schools in the sample represent a combination of the lower strata (low, medium low, medium). Students were recruited by convenience sampling (Kiess, 2002, p. 182) and were all Chilean, Spanish native speakers, not bilingual. Selection criteria did not include writing level, grade point average or any other criteria related to their school performance. Mean participants’ age was 17.7 years, and they ranged from 16.4 to 19.5 years. From the total number of participants, 21 (one complete class) attended school A, and 73 attended school B (three complete classes).

We chose to study monolingual speakers to control for the possibility that bilingual students could have a more explicit understanding of coherence (Bialystok, 1992). We chose Grade 12 students as focal participants because
according to the Chilean curriculum, they should have already received 1 complete year of instruction on reading and writing of persuasive texts.

**Data Sources**

Students were presented with four different tasks: a recognition test (Task 1), a writing task (Task 2), a compose with think-aloud task (Task 3), and an individual interview (Task 4). Tasks 1 and 2 were presented to all of the students who participated in the study. Tasks 3 and 4 were presented to a subsample of participants based on their performance on Task 1 (i.e., students who obtained the highest, *(high recognition)* and the lowest scores *(low recognition)*). All data collection instruments and procedures had been previously validated in a pilot study with 30 12th-grade public school students.

Task 1 presented students with 8 paragraphs involving topics that had received extensive attention in the Chilean media by the time of data collection. The choice of the topics was intended to control for students’ prior knowledge that could affect their comprehension of the paragraphs. Each paragraph included one incoherent sentence that students had to recognize.

Task 2 presented students with a writing prompt that elicited in-class writing of a persuasive text (see appendix). The writing prompt was developed following NAEP 1998 and 2002’s procedures to elicit different positions about a topic. It included a brief dialog between two people who had different positions about the same topic and a prompt that directed students to write down their own position, trying to persuade their readers about it. The topic of the prompt had received the highest score in a knowledge and interest survey that the participants took 1 week before. The idea was to control for the possibility that students would produce incoherent texts due to lack of interest and/or prior knowledge of the topic proposed (McCutchen, 1986; Piolat, Roussey, & Gombert, 1999; Stein & Bernas, 1999).

For Task 3, a second writing prompt was used that mirrored the one in Task 2. Because the purpose was to explore students’ writing process, students were trained in the think-aloud technique before writing and told that they should verbalize their thinking instead of trying to explain, evaluate, or justify it (Ericsson & Simon, 1984/1993). Immediately after Task 3, the students from the subsample were interviewed individually. The conversation focused on the rhetorical relations (Jacobs, 1990) and connectives they had actually used in their texts as well as on the possible instruction experiences they could recall, where they had acquired these resources.
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Data Analysis Procedures

**Task 1: Recognition test.** The recognition test was taken by 93 students from the 2 participating schools. Based on their scores, students were organized into three performance groups: low (from 0 to 1 point), medium (from 2 to 5 points) and high (6 points). Table 1 represents students’ distribution in the three performance levels.

**Task 2: Writing sample.** Ninety-one persuasive texts were analyzed using two coding schemes or rubrics, constructed and validated during a pilot study, considering both the reviewed literature and the actual writing samples of the students. The first rubric (Rubric 1) is based on two assumptions derived from the literature: (a) that LC is not a property of the texts but rather the result of active problem solving from the part of the reader and the writer (Lee, 2002) and (b) that LC problems cause the readers to interrupt fluent reading and to take remedial actions in order to be able to construct coherence (Wikborg, 1990). The researcher read all the writing samples before constructing the rubric and observed that there were four levels of achievement according to the ease with which coherence could be constructed by the reader. This rubric did not involve counting the number of incoherent sequences or classifying them according to the source of incoherence (i.e., wrong use of connective, reference missing). Coders were trained to focus on their own reading process to check for interruptions of fluent reading, passages that required rereading, and how those interruptions affected their ability to understand the meaning of the whole text. Samples were coded as Level 1 if the reader could not understand most of the text, as a result of frequent reading fluency breaks between ideas. Level 2 was assigned in cases where most of the text was hard to understand.

### Table 1. Distribution of Scores in Task 1, Recognition Test

<table>
<thead>
<tr>
<th>School</th>
<th>Class</th>
<th>Low (0 to 1 points)</th>
<th>Medium (2 to 5 points)</th>
<th>High (6 points)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>4</td>
<td>24</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>1</td>
<td>B</td>
<td>5</td>
<td>18</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>1</td>
<td>C</td>
<td>5</td>
<td>8</td>
<td>4</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>D</td>
<td>1</td>
<td>20</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15 (16%)</td>
<td>70 (75%)</td>
<td>8 (8.6%)</td>
<td>93</td>
</tr>
</tbody>
</table>
and thus required a considerable effort of rereading the previous idea to understand the next one. Level 3 was assigned when, although a section of the text was confusing, most of it was clear. Finally, Level 4 was assigned if there were no problems understanding the text and all of it could be read fluently.

The second rubric (Rubric 2) was based on the assumption that mature writers can use a range of coherence-creating devices (Lee, 2000) to structure their ideas in writing (Crowhurst, 1981; Jacobs, 1990), thus creating more complex ideas (Durst, 1987). Specifically, in persuasive writing they can semantically interrelate large portions of text into new wholes that give structure to text; those interrelations should be achieved with a variety of connectives, especially the more sophisticated ones (Crowhurst, 1981) with greater anaphoric power (Halliday & Hasan, 1976). As with Rubric 1, the researcher read all the samples before creating the rubric and found four levels of achievement:

Level 1: Ideas were mainly added. The connective “y” (and) predominated, together with other additive expressions (i.e., además, también (also)), in a sequence that did not reveal any effort to interrelate large portions of text into new wholes or sections.

Level 2: Additive relations did not predominate, but there was no interrelation of larger portions of text into new sections. Only elementary connectives were used (i.e., pero (but), porque (because), o (or)) to link adjacent ideas.

Level 3: Elementary connectives and lack of interrelation between larger portions of text predominated; however, few sequences could be observed that were related with more sophisticated connectives (i.e., aunque (although), dado que (due to)), and interrelated several ideas in a new whole.

Level 4: A variety of more sophisticated connectives were used to interrelate larger portions of text, thus creating distinct sections.

All writing samples were coded by two expert coders and interrater reliability was calculated considering exact percent agreement (percentage of times in which coders assigned the same code) and adjacent percent agreement (percentage of times in which coders assigned codes that were 1 number apart). For the two rubrics, training sessions were conducted prior to coding, until at least 80% reliability was reached. Considering exact and adjacent percent agreement, reliability for Rubric 1 reached a .94 Kappa, and Rubric 2 reached a 1.0 Kappa.

Two examples are presented that illustrate coding. For each of them, some sections (S) of the text have been selected to explain coding decisions. Writing samples are reproduced verbatim.
Example 1: Rubric 1 (Local Coherence) coded in Level 1; Rubric 2 (Local Coherence Resources) coded in Level 1.

<table>
<thead>
<tr>
<th>Original</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Yo creo que es importante saber inglés sobre todo en el mundo de hoy ya que uno aunque no viaje a Estados Unidos u otros países en el cual se hable este idioma ya que uno mismo en un trabajo o en cualquier situación uno tiene la posibilidad de conocer a otras personas las cuales hablan inglés. Y a mi opinión yo creo que es muy entretenido poder entender lo qué te dicen otras personas quién no hablan el mismo idioma que uno. Aparte que todos tenemos la posibilidad de viajar y poder relacionarnos con muchas personas que no solo hablan el mismo idioma nuestro. El mismo amigo 1 quié va a trabajar en un taller mecánico no va a faltar el día que por cualquier motivo llegue alguna persona con su auto, y esta persona no hable español sino ingles y él al preguntarle algo el no le entendera y no sabrá qué hacer aparte que yo creo se va a sentir super mal por no entender que es lo que decea esta persona es por eso que yo creo que es muy necesario aprender inglés es por esto que espero que el amigo 1 entienda lo necesario que es saber un idioma distinto al nuestro sobre todo hoy en día en donde aquí mismo en Chile hay muchas personas extranjeras, las cuales el mayor tiempo uno se esta relacionando con ellos, es por esto que yo le recomiendo que estudie y aprenda un idioma distinto el cual el idioma que aprenda es muy importante que lo sepa y también es super entretenido y se valora bastante ya que no todos le interesa como a él quién piensa que no es necesario pero creo que esta muy equivocado, ya qué es muy importante saber otro o otros idiomas. Ya que son muy pocas las personas que saben otros idiomas, aparte que llaman mucho la atención para todas las personas. Que no sabe más idioma que el nuestro</td>
<td>I think it’s important to know English nowadays because although you don’t travel to the United States or other countries where this language is spoken because yourself in a job or in any situation you have the possibility of knowing other people who speak English. In my opinion, I think that it’s fun to be able to understand what other people who don’t speak your language tell you. Also that we all have the possibility of travelling of relating to many people who not only speak our same language. Friend No. 1 who is going to work in a car repair shop there will be days when for any reason a person with his car comes, and this person will not speak Spanish but English and he when he asks him something he will not understand and will not know what to do and also I think that he will feel very bad for not understanding what this person needs that is why I think that it’s very necessary to learn English that is why I hope that Friend No. I could understand how necessary it is to know a language different from ours especially nowadays where here in Chile there are many foreign people, who most of the time you are relating to them, that is why I recommend that he studies and learns a language different which the language he learns is very important that he knows it and also is super fun and is very valued because not everyone is interested like him who thinks that is not necessary but I think he is very wrong, because it’s very important to know another or other languages. Because there are few people who know other languages, also they are very appealing to many people. Who don’t know another language besides ours</td>
</tr>
</tbody>
</table>
Example 1 presents a long unstructured sequence in which ideas are mainly added. The elementary connective “y” (and) together with the expression “aparte” (also) are used to link most of the ideas, signaling the reader to continue reading. Several ideas are linked with the connective “ya que” (a more formal version of because) establishing causal relations to relate statements with their reasons (i.e., I think he is very wrong, because it’s very important to know another or other languages). The writer, however, tends to present causal relations within sequences where different reasons are added, as is the case of S2: I think he is very wrong because it’s very important to know another or other languages. Because there are few people who know other languages; also, they are very appealing to many people. Considering the predominance of additive relations, as well as lack of evidence of an effort to interrelate large portions of text into new wholes or sections with the more sophisticated connectives, this example was coded in Level 1 of Rubric 2 (local coherence resources).

Coders found this text very hard to understand. Reading was interrupted many times because frequent rereading was required in order to construct the relation between ideas. Despite rereading, many sequences could not be understood thus affecting coders’ ability to understand most of the text. In a postcoding analysis it seems clear that punctuation problems and lack of paragraphs must be involved in coders’ difficulty to construct LC, because boundaries for between ideas are quite unclear. However, there are also frequent problems in the use of connectives and rhetorical relations as well. It is the case of S1, for example, in which the writer uses the connective “aunque” (although) thus signaling the reader that two somehow contradictory ideas will be presented, but instead, links the first idea (although you don’t travel to the United States or other countries where this language is spoken) with a causal link (because yourself in a job or in any situation you have the possibility of knowing other people who speak english.). Considering that the readers could not understand most of the text, as a result of frequent reading fluency breaks between ideas, this example was coded in Level 1 of Rubric 1 (local coherence).

Example 2: Rubric 1 (Local Coherence) coded in Level 4; Rubric 2 (Local Coherence Resources) coded in Level 4

<table>
<thead>
<tr>
<th>Original</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 A medida que ha pasado el tiempo me he dado cuenta que el inglés es una herramienta fundamental para el ser humano, es cierto que el inglés nos permite tener mayor comunicación con el resto del mundo y en</td>
<td>With time I have realized that English is a fundamental tool for the human being, it is true that English enables us to have more communication with the rest of the world and when it comes to finding a job a person is</td>
</tr>
</tbody>
</table>

(continued)
Example 2: (continued)

<table>
<thead>
<tr>
<th>Original</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>el momento de buscar trabajo es más reconocida una persona que sabe inglés, pero creo que lo más fundamental es que el inglés nos “abre puertas,” a_{n}u_{n}c_{a}_{k}e no tengamos en nuestros planes viajar a EEUU si se presentara una oportunidad podríamos aceptar o quizas podríamos empezar a planear un viaje para perfeccionarnos y tal vez al recibir influencias del mundo decidiríamos quedarnos fuera del país, en resumen el inglés nos permite crecer y dejar de limitarnos.</td>
<td>more valued if he knows English, but I think that the most fundamental thing is that English “opens doors,” even though we don’t have in our plans a trip to the United States, if the opportunity comes we could accept or maybe we could begin by planning a trip for professional development and maybe as we get some influences from the rest of the world we could decide to stay abroad, to summarize english enables us to grow and to stop putting limits to ourselves.</td>
</tr>
<tr>
<td>S2 Además el inglés es una lengua universal no sólo en EEUU se habla inglés, también en Inglaterra y en otros lugares del mundo donde es una lengua alternativa como Dinamarca o Australia, por lo tanto nos permitiría relacionarnos con el resto y conocer distintas culturas y así poder hacer intercambio de ideas y conocimientos. Para mí es fundamental la diversidad porque creo que para el ser humano es muy importante recibir distintas influencias para poder tomar una postura.</td>
<td>Additionally, English is a universal language it is not only spoken in the United States but also in England and other places in the world where it is an alternative language like Denmark or Australia, therefore it would allow us to relate with others and to get to know other cultures and that way we could exchange ideas and knowledge. For me diversity is fundamental because I think that for the human beings it is important to receive different influences in order to assume a perspective.</td>
</tr>
<tr>
<td>Es cierto que muchas personas no tienen los recursos para tomar cursos de inglés por eso creo que es fundamental practicar el inglés básico que recibimos en los colegios y creo que una exelente medida es agregar el inglés como un ramo obligatorio en la enseñanza preescolar, básica y media en establecimientos de todos los estratos económicos, así personas de distintas clases sociales tendrían las mismas posibilidades y el poder de decidir tomarlas o no.</td>
<td>It is true that many people don’t have the resources to take English lessons but I think that it is fundamental to practice the basic English that we receive in school and I think that an excellent idea is to add English as a core class in preschool, elementary and high school in schools of all the different socioeconomic strata, that way people from different social classes would have the same opportunities and the power to decide whether to take them or not.</td>
</tr>
</tbody>
</table>
Example 2: (continued)

<table>
<thead>
<tr>
<th>Original</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finalmente puedo decir que el inglés es importante en el mundo de hoy porque nos da más posibilidades de trabajo, nos permite comunicarnos y recibir influencias de distintas partes del mundo, nos abre muchas más puertas y nos permite crecer y transformarnos en personas desarrolladas</td>
<td>Finally I can say that English is important in the world today because it gives us more possibilities to work, it allows us to communicate and receive influences from different parts of the world, it opens many doors and enables us to grow and transform ourselves into developed people</td>
</tr>
</tbody>
</table>

S1 presents a general statement (English is a fundamental tool for the human being) which introduces the content of the rest of the text. This resource establishes a long-distance tie between S1 and the rest of the text (projective power) and creates a section (an introduction) although there is a punctuation problem that makes its boundary unclear. This sequence was considered evidence of an effort to interrelate larger portions of text, thus creating distinct sections (Level 4 of Rubric 2, local coherence resources). The sequence is read fluently (no reading fluency breaks) because coherence is easily constructed, which constitutes evidence for Level 4 of Rubric 1 (local coherence).

S2 begins with the linking expression en resumen (to summarize), which announces the reader that all of the above information has to be considered in order to construct coherence of the upcoming information. This sequence was considered evidence of an effort to interrelate larger portions of text, thus creating distinct sections (Level 4 of Rubric 2, local coherence resources). The sequence is read fluently (no reading fluency breaks), because coherence is easily constructed, which constitutes evidence for Level 4 of Rubric 1 (local coherence).

S3 presents the phrase “por lo tanto” (therefore), that signals the reader that the upcoming information should be taken as a consequence of everything that has been said before in the paragraph. This sequence was taken as evidence of a sophisticated link that enables the writer to interrelate several ideas in a single whole (that english is universal, that it is spoken in the USA, that it is spoken in England, that it is spoken in other countries, that it helps us relate to others, that it helps us get to know other cultures, and that it helps us exchange ideas and knowledge), transformed into a cause and consequence rhetorical relation.

Because a variety of more sophisticated connectives were used to interrelate larger portions of text, thus creating distinct sections, this example was coded in Level 4 of Rubric 2 (local coherence resources). Additionally,
because there were no problems understanding the text and all of it could be read fluently, this example was coded in Level 4 of Rubric 1 (local coherence).

To investigate the extent to which being able to recognize incoherence during reading is related to writing persuasive texts that are locally coherent or to being able to use more sophisticated LC resources, statistical correlations were calculated between scores obtained for Tasks 1 and 2 as well as between the two scores obtained for Task 2.

Task 3: Compose with think aloud. During the pilot test that preceded this work, transcribed protocols were analyzed to explore behaviors that indicated self-regulation of LC. The results showed that students rarely talked about the relations between their ideas or about the connectives they used in their texts. However, rereading out loud was observed consistently before or after the establishment of LC links. After an initial review of the transcribed protocols collected for this work, three categories of analysis were derived that represented the amount of text actually reread by the students: rereading one or more phrases, rereading a paragraph, and rereading the whole text. The three categories were initially analyzed in the 16 cases in the form of a checklist of behaviors. This first analysis did not account for frequency of rereading behaviors for each participant. The focus was to explore between-group differences in the occurrence and kinds of rereading behaviors observed. Table 2 presents the checklist of rereading instances.

A second analysis was conducted to examine the purpose or purposes behind rereading, and specifically, to determine whether students’ purpose for rereading was associated with the establishment of LC. This time, frequency of kinds of rereading was calculated for each participant. After an initial observation of the actual places where students stopped to reread, the following categories were derived:

The student stops to reread,

A. Before including a connective or logical relation within or between sentences.
B. Before including a connective or logical relation between paragraphs.
C. Within or between sentences, without the presence of connectives or logical relations.
D. Between paragraphs without the presence of connectives or logical relations.
E. Right before including a conclusion for the whole text.
F. Right after including a logical connective or “connecting phrase” in any position.
G. Before making revisions to the text.
H. When confused or out of ideas.

Figure 1 illustrates the places and frequency of rereading for each recognition group.

**Task 4: Interviews.** Following the work of Galambos and Goldin-Meadow (1990) and Vygotsky (1934/1986), interview transcripts were coded to explore students’ ability to explain their knowledge of LC, including attempts to define the concept of coherence or the meaning and function of connectives and rhetorical relations. Following the work of Dolz and Erard (2000) and Olson (2009), transcripts were coded to explore students’ ability to use specific metalanguage related to LC. Finally, following the work of Byalistok (1992), transcripts were coded to explore students’ recall of instruction experiences regarding LC. Two examples of coding are included, one from the high recognition group and one from the low recognition group. Both examples are fragments of the actual interviews.

### Table 2. Rereading During the Process of Writing, Task 3

<table>
<thead>
<tr>
<th>Recognition level</th>
<th>Student</th>
<th>Rereads one or more phrases</th>
<th>Rereads a paragraph</th>
<th>Rereads the whole text</th>
<th>Rereads the prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>High recognition</td>
<td>Col</td>
<td>X</td>
<td>X</td>
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<td></td>
<td>Cor</td>
<td>X</td>
<td>X</td>
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<td></td>
<td>Cur</td>
<td>X</td>
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<td>X</td>
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<td></td>
<td>Mor</td>
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<td>X</td>
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<td></td>
<td>Tronc</td>
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<td>x</td>
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<td></td>
<td>Ley</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td></td>
<td>DJ</td>
<td>X</td>
<td>x</td>
<td>X</td>
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<td>DS</td>
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<tr>
<td>Low recognition</td>
<td>Lar</td>
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<td></td>
<td>Marc</td>
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<td>Gat</td>
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</tr>
<tr>
<td></td>
<td>Vásq</td>
<td></td>
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</tbody>
</table>

a. Student names are pseudonyms.
**Student name:** C.C/ **Group:** High recognition (R = researcher; S = student)

**Original** | **Translation**
--- | ---
R: hay otra palabra que me interesa saber por qué la pusiste... (R reads) cuando una persona haya sufrido un abuso sexual es necesario tener solución rápida ya que obviamente ese niño no tendrá la misma acogida que (stops reading)....ese ya que, por qué lo ocupas? | R: there is another word that I want to know why you used it... (R reads) when a person suffers a sexual aggression an urgent solution is needed “ya que” (because) obviously that child will not be (stops reading) ... that “ya que,” why do you use it? |
S: puede ser como conector, quizá... sí | S: it can be like a connective, maybe... yes |
R: ya, y para qué sirve | R: ok, and what is it used for |
S: porque sino hubiera sonado (....) no tiene la misma coherencia puede ser? | S: because otherwise it would have sounded (....) it doesn`t have the same coherence is it? |
R: qué no tiene la misma coherencia | R: what is it that doesn`t have the same coherence

(continued)
S: porque suena distinto ( . . . ) es como necesario tener un conector que una las dos perspectivas en la oración . . . quizá se podría haber utilizado otro, pero en ese momento quise ocupar ese

R: ya, o sea tú dices sirve para unir, para que tenga más coherencia?

S: sí, para eso son los conectores

R: y qué otro podrías haber utilizado en lugar de ya que?

S: a ver . . . ( . . . ) pues

R: y de qué manera se parecen esas dos palabras?

S: es que los dos son conectores . . . es que en realidad los conectores tienen todos como la misma finalidad

R: que es . . .

S: darle coherencia al texto . . . porque si no estuvieran los conectores sonaría cortado . . .

( . . . )

S: a ver . . . ( reads ) de esta manera se puede evitar que niños . . . ( stops reading ) por qué . . . porque . . . a ya . . . porque partimos hablando de por qué yo estaba a favor de la píldora . . . y si yo ya dije eso, entonces tengo que justificar por qué lo puse . . . entonces . . . si ya hice una afirmación . . . tengo que . . . aquí yo quise dar a entender de por qué yo había dicho lo anterior . . . de que la píldora era necesaria( . . . ) y acá señalé como la solución que tiene el problema . . . cuando una persona es abusada sexualmente la solución es la píldora . . . que es lo que expliqué abajo . . .

( . . . )

R: dime una cosa . . . por qué tú sabes esto? por qué tú sabes cómo se ocupa la palabra de esta manera, ya que, o pero . . . y lo que significan . . .

S: because it sounds different ( . . . ) it's like necessary to have a connective that links both perspectives in the sentence . . . I may have used another one, but I chose that one

R: ok, so you say it's used to link, to give more coherence

S: yes, that's what connectives are for

R: and what other word could go there instead of “ya que” ( because )?

S: let's see . . . ( . . . ) “pues” ( because )

R: and what do those two words have in common?

S: that both of them are connectives . . . all connectives have the same purpose

R: and that is . . .

S: give coherence to text . . . without connectives it would sound fragmented . . .

( . . . )

S: ok . . . ( reads ) this way you can avoid that children ( stops reading ) . . . why? . . . because . . . ok . . . because . . . ok . . . because I started talking about why I agreed with the morning after pill . . . and if I already said that, then I have to justify why I put it there . . . then . . . if I already made a statement . . . I have . . . here I wanted to make clear why I had said that . . . that the pill is necessary ( . . . ) and here I presented the solution to the problem . . . when a person suffers a sexual aggression the solution is the pill . . . that is what I explained later . . .

( . . . )

R: tell me something . . . why do you know this? Why do you know how this word is used, “ya que” or “pero” ( but ) . . . and what they mean ( . . . )

S: I have learned it

R: you have been taught?

S: yes

( continued )
S: es lo que he aprendido
R: te lo han enseñado?
S: sí
R: o sea el profesor te ha así paso a paso te ha dicho . . .
S: acá no. Lo aprendí en el preuniversitario, es que ahí nos hacen conectores . . .
R: pero aquí no te los han enseñado nunca?
S: no sí, sí me los han enseñado (. . . .) fue en segundo medio en que vimos conectores y los vimos bien . . . fue con una profesora que ya no está . . . y ella nos dio la partida de por qué usarlos y todo el asunto... pero ahora ya este año como que lo hemos ido más . . . aquí no los hemos visto . . . pero nos hemos ido afirmando ya los que hacemos preu

R: so your teacher has like this step by step told you . . .
S: not here. I learnt it in “preuniversitario,” there they teach connectives . . .
R: so they have never taught you this at school
S: yes, yes they have (. . . .) it was in tenth grade that we saw connectives and we saw them well . . . with a teacher that is no longer here . . . she gave us the start on how to used them and all . . . but now this year we have seen them more . . . here we haven’t . . . but those of us who do preu have become more solid

In this sequence, the student uses metalanguage (conector, coherencia) during her explanations. She also displays an ability to explain the concept of connective in her own words (it’s like necessary to have a connective that links both perspectives in the sentence; without connectives it would sound fragmented), as well as knowledge about their meaning (R: and what other word could go there instead of “ya que” [because], S: let’s see . . . (. . .) “pues” [because]). When asked to analyze the relations between her ideas, she mentions rhetorical relations of problem and solution (and here I presented the solution to the problem), and statement and justification (and if I already said that, then I have to justify why I put it there). Finally, regarding instruction experiences, she recalls a 10th-grade teacher who presented connectives (it was in 10th grade that we saw connectives and we saw them well . . . with a teacher that is no longer here . . . she gave us the start on how to use them and all) and the experience of the “preuniversitario” that she refers to as the opportunity where this knowledge became more solid (but those of us who do preu have become more solid).
Student name: Lar./Group: Low Recognition (R = researcher; S = student)

<table>
<thead>
<tr>
<th>ORIGINAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>R: ok . . . (reads) debido a la tremenda responsabilidad que las puede marcar por el resto de su vida (stops reading). Esa palabra “debido a,” qué significa?</td>
</tr>
<tr>
<td>S: que ellas . . . se preocupan mucho de no quedar embarazadas para no vivir marcadas . . . que son muy jóvenes ( . . . )</td>
</tr>
<tr>
<td>R: ya . . . y qué significa “y”?</td>
</tr>
<tr>
<td>S: otra cosa . . . aparte</td>
</tr>
<tr>
<td>R: ya . . . otra cosa . . . para qué la uses tú</td>
</tr>
<tr>
<td>S: para xxxx . . . lo último</td>
</tr>
<tr>
<td>R: y esa palabra “y” se parece de alguna manera a “ debido a”?</td>
</tr>
<tr>
<td>S: no</td>
</tr>
<tr>
<td>R: no se parecen . . . y si yo te dijera que todas esas palabras pertenecen como a una clase, a un tipo de palabra . . . sabes qué clase es esa?</td>
</tr>
<tr>
<td>S: no</td>
</tr>
<tr>
<td>R: una última pregunta. Por qué tú ocupas esas palabras? de dónde las sacaste?</td>
</tr>
<tr>
<td>S: más fáciles, no sé</td>
</tr>
<tr>
<td>R: alguien te las enseñó?</td>
</tr>
<tr>
<td>S: no</td>
</tr>
<tr>
<td>R: y por qué las ocupas?</td>
</tr>
<tr>
<td>S: más fácil pa entenderme</td>
</tr>
<tr>
<td>R: como para entenderte . . . lo que quieres decir?</td>
</tr>
<tr>
<td>S: sí</td>
</tr>
<tr>
<td>R: entonces . . . nadie te las enseñó nunca?</td>
</tr>
<tr>
<td>S: no, leyendo . . . no sé . . . a veces pregunto qué significa tal cosa . . . como las palabras extrañas para mi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TRANSLATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>R: ok (reads) “debido a” (due to) the huge responsibility that can affect their lives forever (stops reading). That word “debido a,” what does it mean?</td>
</tr>
<tr>
<td>S: that they . . . worry too much of not getting pregnant so they will not be affected . . . they’re too young ( . . . )</td>
</tr>
<tr>
<td>R: ok . . . and what does “y” (and) mean?</td>
</tr>
<tr>
<td>S: another thing . . . different</td>
</tr>
<tr>
<td>R: ok . . . another thing . . . what do you use it for?</td>
</tr>
<tr>
<td>S: for xxxx . . . for the last thing</td>
</tr>
<tr>
<td>R: and that word “y” (and), is it in any way similar to “debido a” (due to)?</td>
</tr>
<tr>
<td>S: no</td>
</tr>
<tr>
<td>R: they are not alike . . . and what if I tell you that all of those words belong to a class, a type of word . . . do you know that type of word?</td>
</tr>
<tr>
<td>S: no</td>
</tr>
<tr>
<td>R: one more question. Why do you use those words? Where did you get them from?</td>
</tr>
<tr>
<td>S: they’re easier, I don’t know</td>
</tr>
<tr>
<td>R: did anybody teach them to you?</td>
</tr>
<tr>
<td>S: no</td>
</tr>
<tr>
<td>R: then how come you use them?</td>
</tr>
<tr>
<td>S: it’s easier to make myself understood</td>
</tr>
<tr>
<td>R: to make yourself understood . . . what you want to say?</td>
</tr>
<tr>
<td>S: yes</td>
</tr>
<tr>
<td>R: then . . . nobody taught them to you ever?</td>
</tr>
<tr>
<td>S: no, reading . . . I don’t know . . . sometimes I ask what does that mean . . . like the words that are strange to me</td>
</tr>
</tbody>
</table>

In this sequence, the student does not use any metalanguage and appears to be unaware or somehow unable to analyze the connectives the researcher points to during the interview. In effect, when asked about the meaning of the
connective “debido a” (due to) in his text, he focuses on the meaning of the sequence (That word “debido a,” what does it mean? S: that they . . . worry too much of not getting pregnant so they will not be affected . . . they’re too young) instead of in the target word. When the researcher repeats the question, this time in relation to the connective “y” (and), the student provides an answer that seems to relate to the function of the target word (R: ok . . . and what does “y” (and) mean? S: another thing . . . different). He also seems unaware that both words in his text belong to a certain class or type of word (R: and that word “y” [and], is it in any way similar to “debido a” [due to]? S: no) or about their specific function in text (R: Why do you use those words? (. . .) S: they’re easier, I don’t know (. . .) R: then how come you use them? S: it’s easier to make myself understood). Finally, when asked about instruction experiences, he cannot recall any and reports that he learnt the target words from reading (R: then . . . nobody taught them to you ever? S: no, reading . . . I don’t know . . . sometimes I ask what does that mean . . . like the words that are strange to me).

Results

This section includes the results derived from the different analyses. Results are organized by each of the four research questions.

Research Question 1

What characteristics of local coherence are evident in 12th-grade students’ persuasive writing?

The majority of students wrote persuasive texts that were considered mostly coherent by the expert coders, which is reflected in the average results of Rubric 1: in a scale of 1 to 4, the mean score was 3.03 with a standard deviation of .55. As described by level 3 of Rubric 1, very few sequences in the texts were harder to understand and caused interruptions to fluent reading. In other words, the majority of texts had minor LC problems but coders were still able to construct text coherence.

On a scale of 1 to 4, the mean score for Rubric 2 was 1.82, with a standard deviation of .67. Scores for Rubric 2 were significantly lower than results of Rubric 1 for each one of the four classes. Table 3 presents the results of the t tests.

These results suggest that, although writing was mostly coherent, the majority of students did not interrelate larger portions of text into new wholes, in order to give structure to their persuasive texts, neither did they use a variety of the more sophisticated connectives (with greater anaphoric power).
In other words, products of writing did not resemble mature persuasive writing, since LC was mainly achieved with long unstructured sequences of reasons, linked by elementary connectives, which related only two adjacent ideas instead of having the retrospective or projective power to form sections.

A positive statistic correlation was found between the mean results of Rubrics 1 and 2 (.369, \( p < .01 \)), which indicates that those texts that exhibited a stronger command of LC resources were also considered to be more coherent by the coders. This is an interesting finding for this study because it suggests that readers value texts that use more sophisticated LC resources, which probably facilitate their job of constructing text coherence.

**Research Question 2**

What knowledge do students have of local coherence in writing?

Results for this research question have been derived from Tasks 1 (recognition of incoherent sequences) and 4 (interview post composing out loud).

**Research Question 2.1**

Do they recognize incoherent sequences in texts they read?

Students’ scores in Task 1 ranged from 0 to 6, with a standard deviation of 1.53. The majority of students (75%) demonstrated a medium ability to recognize incoherent sequences (2-5 sentences). Few students (16%) demonstrated a low ability (low recognition group, 0-1 sentence), and still fewer (8.6%) had a high ability (high recognition group) to do so (6 sentences).

**Research Question 2.2**

Can they articulate their understanding of local coherence?

Students in the two recognition groups differed in their ability to explain their knowledge of LC. In general terms, high recognition students were
more able than the low recognition students to explain the relations between
the ideas in their writing, as well as the meaning and function of coherence
and of the connectives they had included. Specifically:

Low recognition. Six of the 8 students could explain only one of the rela-
tions of coherence the researcher pointed to during the interview. For the rest
of the relations they said they could not explain. Within the given explana-
tions, 2 were very superficial (e.g., “two ideas that talk about the same thing”) and 3 exhibited a deeper insight into the rhetorical relation between ideas (e.g., “a good and a bad thing about the morning after pill”). Regarding meta-
language, only 2 of the 8 students referred to the concept of coherence when explaining why they had established a relation between ideas. One of them used the technical word “coherencia” and the other used a less specific term, “sentido” (sense). One student used the technical word “conectores” (con-
nectives). Six of the 8 students gave a few correct definitions of connectives, which were either general (e.g., “the word ‘porque’ is useful when you’re explaining), or pointed to synonyms (e.g., “aunque” [although] is like “pero” [but]), or pointed to the specific function of the conjunctive ( e.g., “aunque” makes it clear that you are giving a negative opinion). The same students gave several incorrect definitions as well ( e.g., “aunque” [although] means the same than “dado que” [due to]). In 2 of these cases, incorrect answers were given for connectives which had been correctly explained before.

Seven of the 8 students did not remember receiving explicit instruction on LC. When asked about how and when they had acquired the connectives and relations used in their texts, they said they acquired them because they were common in conversations and books. They also referred to conjunctives as “crutches” that they always used because they helped them continue writing.

High recognition. Although the 8 students made some mistakes when explaining the meaning and function of connectives, they were all able to provide several correct explanations as well. Only 1 of the 8 students provided explanations that mirror the superficial explanations obtained from students in the low recognition group ( e.g., “this sentence introduces another aspect of the problem”). The rest of the students were able to analyze deeper into the rhetorical relation between the two ideas in question ( e.g., “the first sentence restricts the next statement,” or “the first paragraph presents a problem and the second presents a solution”).

Five of the 8 students recalled being instructed on LC. All of them used metalanguage ( e.g., “conectores,” “coherencia,” “cohesion”) within their explanations (e.g., “connectives are used to link ideas, to give coherence, and they have specific functions, like maintaining the topic, changing the
topic, or adding information’’). Three of them mentioned a teacher they had in 10th grade who had given them lists of connectives organized in categories, and cloze technique exercises in sentences. The same 3 students claimed to have supported this knowledge with instruction from ‘‘preuniversitarios’’ they were currently attending. Their responses indicate that methodologies in preuniversitarios mirror the kind of instruction given by the 10th-grade teacher. The remaining 2 did not refer to the teacher or to preuniversitarios, but they also recalled lists of connectives and cloze technique exercises. Only 1 of the 3 students who said had not been instructed, used some technical expressions (‘‘idea principal’’ (main idea), ‘‘incoherencia’’ (incoherence), and ‘‘contexto’’ (context). Both the students that recalled instruction and those who did not, explained that they used the relations and connectives discussed because they were common in conversation in and out of school. Table 4 summarizes the results of Task 4.

Research Question 3

What strategies do they use to achieve local coherence in their writing?

Results do not suggest any kind of strategic behavior in the low recognition group related to the establishment of LC. In the high recognition group, on the contrary, results reveal that students had a tendency to reread and that rereading was associated to establishing LC relations within or between sentences and paragraphs. There were clear between group differences regarding rereading the text written so far. Results of the Mann-Whitney test show statistically significant differences in the mean rank of rereading behaviors between the two groups, favoring the high recognition group (.005). Only 4 of the 8 students in the low recognition group were observed rereading, and only once during the writing process. One of them reread the text written so far, while the remaining 3 only reread the prompt. Results of the Mann-Whitney test are summarized in Table 5.

Seven of the 8 students in the high recognition group were observed rereading. Within group differences were found regarding frequency of rereading; specifically, 4 of the students reread with moderate frequency (2-3 times) while the remaining 3 did so with higher frequency (6-11 times). Results point to an association between rereading and the establishment of LC relations. In the high recognition group, 39% of the total rereading instances occurred before the inclusion of a connective between or within sentences, and 24% also occurred within or between sentences but without the presence of a connective. With less frequency, students stopped to reread between paragraphs (6% before the inclusion of a connective and 6% without the inclusion of a
Table 4. Ability to Explain Knowledge of LC by Recognition Group

<table>
<thead>
<tr>
<th>Coding criteria</th>
<th>Low recognition group</th>
<th>High recognition group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain relations between ideas in their writing</td>
<td>The majority of students could explain only one of the relations in their writing. Explanations did not reveal an insight into the rhetorical relation between ideas in their text.</td>
<td>The majority of students provided several explanations that revealed a deeper insight into the rhetorical relation between ideas in their text.</td>
</tr>
<tr>
<td>Explain meaning and function of coherence and connectives included in their writing</td>
<td>The majority of students gave some correct and some incorrect definitions of the connectives used in their texts. Definitions were either very general, or pointed to synonyms or to the function of connectives.</td>
<td>The majority of students provided several correct definitions of the connectives used in their texts, although some of their definitions were incorrect. Definitions were more specific, supported by the technical language.</td>
</tr>
<tr>
<td>Use of metalanguage within explanations</td>
<td>Only 1 of the 8 students used the term “coherencia” (coherence), and 1 student used the word “conectores” (connectives).</td>
<td>All of them used metalanguage within their explanations.</td>
</tr>
<tr>
<td>Recall of explicit instruction on LC</td>
<td>7 of the 8 students could not remember receiving explicit instruction on LC. All the students reported that they used relations and connectives because they were common in books and in conversations.</td>
<td>5 of the 8 students recalled receiving explicit instruction on LC. Both the students that recalled and those who did not recall explicit instruction on LC, reported that they used relations and connectives because they were common in conversations.</td>
</tr>
</tbody>
</table>

connective), before including a conclusion (9%) or reread the whole text (6%) before making revisions not related to LC. Taken together, 60% of the rereading behaviors occurred in association to connectives, 55% of them before and 6% after the inclusion of a connective.
Is there a relationship between knowledge, regulation and local coherence in their persuasive writing?

A clear relationship was found between being able to recognize incoherent sequences and having a stronger command of the LC resources typical of more mature persuasive writing. This association is supported by a positive statistic correlation (.396, \(p < .01\)) between the mean scores from Task 1 (recognition of incoherence) and Rubric 2 (local coherence resources). Interestingly, no statistical correlation was found (.093) between the mean scores of Task 1 and Rubric 1 (local coherence). This indicates that for this study, being able to recognize incoherent sequences did not relate to the ability to produce a coherent piece. Table 6 summarizes these results.

The results also reveal associations between being able to recognize incoherent sequences, being able to regulate LC during writing (through rereading) and being more able to explain knowledge of LC. Students in the low recognition group not only could recognize fewer incoherent sequences during reading (Task 1), but they were also less able to articulate their knowledge about LC (Task 4), and did not tend to reread during writing (Task 3). Students in the high recognition group were able to recognize most incoherent sequences during reading, were better able to articulate their knowledge of LC, and were observed rereading before establishing LC relations within and between sentences and paragraphs.
Discussion

LC is not merely a property of text, but rather the result of a complex interaction between reader and writer (Lee, 2002). That is why an analysis of students’ command of LC should not focus on the mere counting of proportion of cohesive ties, but rather on the ways in which writers use them in order to coherently construct their reasons and opinions (Crowhurst, 1981) as well as on the readers’ ability to construct (or reconstruct) this coherence. Findings of this study contribute with two suggestions about this complex interaction. On the one hand, results suggest that having a better command of LC resources in writing correlates with readers’ judgment of coherence, which could imply that when LC resources are used to interrelate large portions of text into internal structures (Halliday & Hasan, 1976), those ideas become clearer for the reader. On the other hand, however, the average scores of Rubric 1 (local coherence) and 2 (local coherence resources) suggest that readers were generally able to construct coherence, while most texts did not exhibit a more sophisticated command of LC resources. These results may imply that, for this study, using sophisticated LC resources in writing is not an essential requirement for the construction of LC. A possible explanation for this phenomenon is that LC could be achieved by an automatic transference of oral communication. In effect, both high recognition and low recognition students reported they had acquired connectives because they were common in conversations as well as in books. Regarding their writing process, low recognition students did not tend to reread, thus revealing that the simpler LC resources were included automatically, without a consideration of the complexities of written LC. In addition, the fact that being able to recognize incoherent sequences did not correlate in this study with being able to write locally coherent texts may imply that the majority of students did not rely on a metalinguistic knowledge of LC (in this case, the ability to analyze incoherence within a paragraph) in order to achieve LC in writing.

The evidence collected in this study reveals that the majority of students wrote texts that did not resemble mature persuasive writing (Crowhurst, 1981) because ideas were presented in long unstructured sequences, related with the more elementary connectives, rather than using sophisticated LC resources to interrelate them into new wholes or sections (Halliday & Hasan, 1976). In other words, the majority of written products did not exhibit an ability to deal with larger portions of text and transform them through rhetorical relations.

Although these findings cannot be taken as evidence of the impact of the current Chilean Spanish Language Curriculum on students’ writing, they
can be used as a basis for a discussion about students’ preparation for communicating in higher education, as part of the different situations in which students should be able to communicate, according to the curriculum (MINEDUC, 1998), by means of the more complex discourse. As discussed by Olson (2009), it is debatable whether literacy skills pertain to specific academic disciplines and their textual communities, or whether there is a certain repertoire of reading and writing skills that can be generalized to different literacy practices. The question arises, then, whether grade school can provide students with some kind of basic preparation to communicate in higher education communities, or whether students can only learn academic writing conventions in the context of higher education and its particular disciplines. Nevertheless, policy makers have the responsibility of determining “the criteria to be met in judging that one is or is not literate” (Olson, 2009, p. 147) at the end of high school, as well as who is responsible for helping students meet that criteria. In the particular case of Chile, because Spanish academic writing is so complex in terms of LC resources (Cuenca, 2003; Simpson, 2000), it could be that specific instruction on those LC conventions is needed in schools, in order to prepare students to communicate in higher education.

Results of this study also contribute to a discussion about writing education. Specifically, findings confirm prior evidence that having metalinguistic knowledge is related to literacy instruction (Bialystok, 1992) and that having command of metalanguage is associated with students’ ability to think and talk about language (Camps et al., 2000; Dolz & Erard, 2000) as well as with more advanced levels of literacy (Olson, 2009). In effect, evidence is provided that a better command of LC resources in persuasive writing correlates with students’ ability to recognize incoherent sequences during reading and is associated with having metalinguistic knowledge of LC and monitoring the establishment of LC during writing. In addition, findings indicate that such specific knowledge and more sophisticated command are associated with explicit instruction on LC, as reported by the majority of students in the high recognition group. Further studies should explore specific pedagogical methods to develop metalinguistic knowledge of LC, which should provide students not only with the ability to construct their reasons and opinions through writing but also with the ability to detect incoherent sequences during reading. Such studies should consider the suggestion that collective metalinguistic reflections provide students not only with the opportunity to reflect on their own cognition but also offer a social, communicative, and linguistic space in which specific knowledge of language and text are discussed (Camps et al., 2000; Dolz & Erard, 2000).
Appendix

Writing Prompt (Task 2):

MUESTRA DE ESCRITURA
Nombre (name):___________________________________________
Curso (class): ____________________________________________
Colegio (school): ___________________________________________

Dos de tus amigos tienen una discusión sobre la importancia de saber Inglés en el mundo de hoy. Sus ideas son las siguientes: (Two of your friends are having a discussion about the importance of learning English nowadays. Their ideas are the following:)

Amigo 1: Mira, yo no voy a gastar tiempo ni plata estudiando Inglés. Prefiero concentrarme en estudiar algo técnico que me sirva para encontrar trabajo rápido. Además, yo ya sé que voy a trabajar en un taller mecánico y para eso no sirve saber ese idioma. Por último, tengo claro que nunca voy a viajar a Estados Unidos.

Friend 1: Look, I will not waste my time or my money studying English. I prefer to concentrate on studying a technical career that will help me find a job quickly. Besides, I already know I will work fixing cars and for that English is not necessary. One last thing: I am sure I will never travel to the USA.

Amigo 2: Yo voy a estudiar Inglés de todas maneras! Así, tengo más posibilidades de que me contraten en cualquier trabajo al que postule. Una persona que sabe inglés puede acceder a toda la información de internet y se puede comunicar y hacer negocios con gente de todo el mundo.

Friend 2: Of course I will study English! That way, I have more chances of being hired in any kind of job I apply to. A person that knows English can access all the information on the Internet and can communicate and do business with people all over the world.

Escribe un texto en el que expliques tu opinión sobre la importancia de saber Inglés en el mundo de hoy. Asegúrate de dar razones y de fundamentarlas. Con tu texto, debes tratar de convencer a tu lector, de que tu opinión es la correcta.

Write a text in which you explain your opinion about the importance of knowing English in today’s world. Make sure to include reasons and to support them. With your text, you should try to persuade your reader that your opinion is the correct one.
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Notes

1. SIMCE is the Chilean national system to measure the quality of education. Though the scores of this test have been quite stable across the years, there are notable exceptions every year of public schools that obtain significantly higher scores than the mean for this type of institution.
2. As in the example, “although he was tired, he decided to attend the concert.”
3. “Preuniversitario” or “preu” refers to educational institutions that prepare students for the national university admissions test.

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