Anxiety and Reading Comprehension in Spanish as a Foreign Language

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Abstract: *This study explored the relationship between language anxiety and reading in Spanish. The issues addressed were: (1) the effect of language anxiety on the reading comprehension and recall of university-level language students and (2) the effect of language anxiety on the reading process itself. A total of 89 participants, all students in two different levels of Spanish at a large university, took part in the study. Two inventories assessed two different anxiety levels: the Reading Anxiety Scale and the Foreign Language Classroom Anxiety Scale. Also, an instrument called the Cognitive Interference Questionnaire was used to assess the number of off-task thoughts of each participant while reading. The reading comprehension assessment measures consisted of a written recall protocol and a multiple-choice test. The results indicated that more highly anxious students (those with high scores on both anxiety inventories) tended to recall less passage content than did those participants who claimed to experience minimal anxiety. For the type of information recalled, the relationships between anxiety and recall were less systematic. Reading anxiety affected the number of important ("High") pausal units recalled, whereas foreign language classroom anxiety affected the number of supporting ("Mid") pausal units recalled. In both cases, highly anxious learners recalled fewer pausal units. In contrast, neither reading anxiety nor foreign language classroom anxiety affected significantly the recall of unimportant ("Low") pausal units. Results from the analysis of data from the Cognitive Interference Questionnaire indicated that highly anxious students tended to experience more off-task, interfering thoughts than their less-anxious counterparts.*

Introduction

Anxiety is a complex psychological construct consisting of many variables. It is difficult to collapse them all into a single concise definition. In its simplest form, anxiety can be associated with feelings of uneasiness, frustration, self-doubt, insecurity, or apprehension and is intricately intertwined with self-esteem issues and natural ego-preserving fears. Within the context of language learning, the impact of anxiety is complex and not easily assessed. As language learners, we can all attest to some event during our learning experience when we felt anxious. The most often-cited case is that of oral performance situations, such as the infamous role-playing scenario in which two students must stand in the front of the classroom and talk on imaginary telephones about an imaginary party and plan all the details such as what they will eat and whom they will invite. Even if they rehearse ahead of time, the dialogue rarely goes as planned. Anxiety plays a significant role in affecting the outcomes (Phillips 1992; Price 1991; Young 1990).

Language teachers and educators contend that anxiety has a detrimental effect on language learning and performance (e.g., Young 1992), but some research shows that this is not neces-

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sarily true (MacIntyre 1999). As early as 1960, researchers, such as Alpert and Haber (1960), asserted that anxiety per se may not always lead to poor performance. They distinguished between two types of anxiety. Facilitating anxiety influences the learner in a positive, motivating way and is best described as enthusiasm before a challenging task. In contrast, debilitative anxiety includes the unpleasant feelings, such as worry and dread that interfere with the learning process.

Researchers generally agree that maximally effective language teaching/learning methods are those that emphasize the need to reduce the anxiety and tension that inhibit second language performance and create resistance to natural language acquisition and learning (Horwitz et al. 1986; Young 1992). At the same time, the most effective methods tend to create a certain level of apprehension for the learners that can be motivating. The objective in ridding language learning of unnecessary anxiety is to instill in students increased interest and motivation to learn the language. If students recognize their fears, they will be able to interpret anxiety-provoking situations in more realistic ways and eventually choose to approach rather than avoid an anxiety-evoking situation. Before being able to reduce that anxiety, however, we need to know in what contexts it occurs.

As previously mentioned, speaking is probably considered the most stressful of the four skills from the perspective of both second language teachers and learners (Young 1992). The amount of research in the area of anxiety and oral production attests to that. However, even though little attention has been paid to the other skills, anxiety also affects those aspects of the language learning process. One area in which little research exists is the relationship between reading in a second language and anxiety (Athey 1982; Lee 1999; Saito et al. 1999). We do know that reading in any language is a cognitively demanding process, involving minimally the coordination of attention, memory, perception, and comprehension processes. The reading process is further complicated in the second language, where there are additional factors to consider such as language ability, cultural backgrounds, and learner motivations, among others. Many students learning a foreign language experience some degree of frustration when they attempt to comprehend any but the simplest foreign language texts. This is not surprising when one considers all of the factors mentioned.

There are a number of ways to approach the study of language learning anxiety, one of which is cognitive in nature. In a series of experiments, MacIntyre and Gardner (1994a, 1994b) examined the effects of anxiety on cognitive processing and have found that such effects may be quite persuasive. The cognitive perspective on language learning recognizes that human beings are limited in their attention and processing capacity (McLaughlin et al. 1983; Shiffrin and Schneider 1977). According to researchers working from such a perspective, language anxiety takes up processing capacity and thereby diminishes the amount of attention that the learner has to dedicate to the learning task itself (Eysenck 1992; Sarason 1988). For example, highly anxious readers may expend part of their mental energy thinking about things that are completely unrelated to the reading activity, such as the difficulty of the vocabulary in the text, how poorly they are doing, how their classmates are faring, or how much time they have to complete the reading. As a result, the reading process cannot take place automatically or efficiently. In contrast, a less-anxious reader does not expend energy on these task-irrelevant thoughts, and thereby has more mental energy to contribute to the reading process itself.

Using the cognitivist approach to study the relationship between anxiety and reading leads to the hypothesis that higher levels of anxiety influence the reading process in several ways. First, heightened levels of anxiety may direct attentional capacity away from the reading process. Second, anxiety may simply slow down and make effortful the application of reading processes such as letter and word recognition. Third, anxiety may influence a reader's decision-making processes, for example, decisions about meaning and strategy use.

The principal goal of this study was to confirm empirically that reading anxiety does exist as a separate and distinct phenomenon in language learning, as well as to assess its relationship to reading comprehension. The goal was not to determine the causes of reading anxiety or the effects of various methodological approaches on learners' anxiety. The following research questions guided the investigation:

1. Does reading anxiety exist as a phenomenon distinguishable from general foreign language anxiety?
2. Do highly anxious readers remember more or less content of the reading passage than their less-anxious classmates?
3. Are highly anxious readers more likely to recall certain types of information than are less-anxious readers?
4. Do highly anxious readers experience more time in "off-task" preoccupations than less-anxious readers?

Methodology

A total of 107 students studying Spanish at a large research university participated in the study. Ten participants were eliminated because they failed to complete at least one instrument. Another eight participants were excluded because they were non-native speakers of English. Thus, data for 89 participants were retained for data analysis.

Participants were divided into two levels: Level 1 was comprised of 53 students enrolled in a third-semester Spanish course; Level 2 consisted of 36 students enrolled in

an advanced oral expression course. Lee (1991) discusses the common practice of researchers equating years of language instruction with language proficiency. He suggests quantifying exposure to the second or foreign language in terms of the number of contact hours that the subjects report.

Level 1 participants reported an average of 54 hours of university-level classroom contact hours of Spanish language instruction. Level 2 learners reported an average of 216 hours of university-level classroom contact with Spanish.[1] Not only was there a large quantitative difference between the average number of contact hours for the two levels, there was also a qualitative difference. Exactly one half of the Level 2 participants reported having spent time in a Spanish-speaking country, with the time abroad ranging from one week to two years. In contrast, few of the Level 1 participants reported having spent time abroad, with the time spent ranging from one to five weeks.

The data for the study were collected during one class period. Each participant first completed two anxiety assessment scales. The first of the two scales was adapted from Zbornick and Wallbrown (1991), who conducted research with children reading in their first language. In the adapted version, a number of the original items were eliminated because they were not cognitively appropriate for university-level readers or were repetitious of other items. The revised version was validated through administration to language learners equivalent to those participating in this study and through consultation with other language specialists. The resulting 21-item Reading Anxiety Scale (RAS) was used to assess the amount of anxiety experienced by language learners within the specific context of reading in Spanish (see Appendix). The second anxiety assessment was the Foreign Language Classroom Anxiety Scale (FLCAS) designed by Horwitz, Horwitz, and Cope (1991). Its 33 items related to the level of anxiety related to language learning in general. For both scales, participants indicated the degree to which they agreed with each item on a five-point scale in the Likert format.

Each participant then read a 361-word magazine article titled "Extinción Masiva." (The passage appeared in Cambio 16 May 1996, p. 7.) After reading the article, they completed a cognitive interference questionnaire and the two reading comprehension assessment measures. The Cognitive Interference Questionnaire (Sarason 1978) revealed the degree to which the participants reported having had thoughts of various types, including those that interfered with concentration on the reading task.

The first comprehension assessment measure was a free written recall protocol in English, the native language of the participants. Research evidence (Lee 1986a, 1986b; Wolff 1987) suggests that because of potential interference from L2 production, writing recall protocols in the native

language of the L2 reader are better indicators of comprehension and memory. The second measure of comprehension consisted of 10 multiple-choice questions. Two reading comprehension assessment measures were used because multiple tasks are thought to better assess a reader's comprehension (Wolf 1993). Finally, participants completed a background questionnaire that asked them to provide information on their native language, their areas of study at the university, and the extent of their experience with Spanish and other languages.

Scoring and Data Analysis Procedures

Using Johnson's (1970) pausal breath unit analysis, trained native speakers of Spanish divided the reading passage into pausal units. A pausal unit is one that has a pause at each end during normally paced oral reading. After a delay of several weeks, they arranged the pausal units hierarchically into three levels, according to their saliency to the message of the text. Those classified as high-level units represent central ideas and contribute significantly to the main idea of the passage. Mid-level idea units are supporting details that are semantically important to the message of the text. The low-level units provide additional information that is semantically rather unimportant and could be omitted without significantly altering the message of the passage. The passage contained a total of 47 pausal units: 18 high-level units, 16 mid-level units, and 13 low-level units.

Each participant had two anxiety scores: (1) the Reading Anxiety Scale rating and (2) the Foreign Language Classroom Anxiety Scale rating. Participants whose individual mean score on each of the scales was one or more standard deviations above the total mean were classified as "hi-anxiety," and those whose mean score was one or more standard deviations below the mean on each of the scales were "lo-anxiety." The rest were considered to be "mid-anxiety." While this placed the majority of the students into the mid-anxiety category, using the distribution of the scores away from the mean was more informative than using the 25th and 75th percentiles as cut-off points for several reasons. First, it locates individuals within the total possible range of scores in a distribution, regardless of whether or not the data are normally distributed. Second, it increases the potential for comparison with other populations. Table 1 summarizes the number and percentage of students who were placed in each anxiety category.

Each participant also had a set of five reading-related scores : (1) multiple choice assessment score (the number of correct responses), referred to as MC, (2) the number of central (high-level) pausal units recalled from the reading passage, referred to as "High," (3) the number of supporting (mid-level) pieces of information recalled from the reading passage, referred to as "Mid," (4) the number of

"unimportant" details (low-level pausal units) recalled from the reading passage, referred to as "Low," and (5) the total number of pausal units recalled from the passage, referred to as "Total." These five scores served as the dependent variables. In addition, each participant had a cognitive interference score that also served as a dependent variable.

To determine the existence of any significant main effects for proficiency level and anxiety level, or their interaction on reading comprehension, the data were submitted to a series of two-way analyses of variance (ANOVA). To assess the interaction between anxiety level and proficiency level on the number of off-task thoughts experienced by the participants in the study, their scores on the cognitive interference questionnaire were also submitted to a series of two-way ANOVAs.

Results and Discussion

Research Question 1

Analysis of the RAS data revealed that the mean anxiety score for the entire group of 89 participants was 47.4 (SD = 11.05). With a possible range of scores from 21 to 105, the actual range for the participants in this study was 24 to 81. The 21 items had significant part–whole correlations with the total scale, and the inventory had a mean item–total correlation of .54. This number suggests that the RAS reliably and validly measured reading anxiety.

The mean and standard deviation scores on the FLCAS were similar to those found in previous studies. (Aida 1994; Horwitz 1986, Saito et al. 1999). The possible range of scores was 33 to 165. With the present sample of 89 participants, scores ranged from 38 to 164. The mean FLCAS score for the entire group was 85.69 (SD = 28.13). As with the RAS, the 33 items in the FLCAS had significant part–whole correlations with the total scale. The mean item-total correlation was .71. High item–total correlations strongly suggest an internal consistency to the inventory.

The FLCAS showed somewhat greater internal consistency than the RAS, perhaps because it has been administered in a number of separate studies to a large number of students, and has undergone various adaptations. In contrast, the RAS has never been applied to a foreign language population prior to this study. Nonetheless, the RAS identifies reading anxiety as a distinct variable in foreign language learning and correlates positively with the scores on the FLCAS for the entire group of 89 participants, as well as across both levels. This suggests that learners with higher levels of foreign language anxiety also tended to have higher levels of foreign language reading anxiety and vice versa. A correlation coefficient of .70 indicates that the two instruments share approximately 49% of the variance. Thus, approximately 51% of the variance is not shared

between the two measures. This provides preliminary support for the existence of Spanish reading anxiety as a phenomenon related to but distinct from general foreign language anxiety, a finding that is congruent with the results of research conducted by Saito et al. (1999). The intercorrelations of the anxiety instruments used in this study are presented in Table 2. Interpreted within this context, the RAS provides useful information on specific anxiety reactions. [2]

Research Question 2

Descriptive statistics for the comprehension measures appear in Table 3. The data indicate that the participants in this study recalled a relatively low number of pausal units from the text. As a group, they recalled an average of 6.5 pausal units, or 14% of the total number. Level 1 participants recalled an average of 10%, and Level 2 participants recalled an average of 20% of the total number of pausal units. Although less than 20% of the total pausal units were recalled, this was not surprising. Carrell (1985) reported 17% to 28% recall with high-intermediate ESL students, and Lee and Ballman (1987) reported a similar mean percentage of 19% to 23% recall for beginning language learners reading an intermediate-level expository passage in Spanish. [3]

Intercorrelations of the reading comprehension assessment measures appear in Table 4. There were significant positive correlations between all comprehension measures for the participants as a group. However, the coefficients of correlations between multiple-choice (MC) and the other comprehension assessment measures were rather low. The highest of these coefficients was only .33.

There were fewer significant positive correlations for Level 1 than there were for the entire group of participants as a whole. MC did not significantly correlate with either High or Low. For Level 2, there were even fewer significant positive correlations, with only three measures showing significant positive correlations: High, Mid, and Low with Total. Again, the correlation coefficients between MC and the other comprehension assessment measures were very low. These results correspond to Oh's (1990) findings that sentence verification score and multiple-choice score demonstrated insignificant or small correlations with the other reading comprehension measures, including written recall scores for high, low, and total idea units. This raises the possibility that the two comprehension assessments used in this study — the written recall protocol and the multiple choice test — tapped rather different aspects of reading comprehension for the participants in this study. This possibility will be explored in more detail later.

The results of the ANOVAs for the total number of pausal units recalled in the written recall protocols revealed significant main effects for level and for reading anxiety, but

Table 1

PARTICIPANTS' ANXIETY RATINGS

	Lo-Anxiety (%)	Mid-Anxiety (%)	Hi-Anxiety(%)
RAS			
Group	15 (16.85)	58 (65.17)	16 (17.98)
Level 1	9 (16.98)	30 (56.60)	14 (26.42)
Level 2	6 (16.67)	28 (77.76)	2 (5.56)
FLCAS			
Group	20 (22.47)	52 (58.43)	17 (19.10)
Level 1	13 (24.53)	28 (52.83)	12 (22.64)
Level 2	7 (19.44)	24 (66.67)	5 (13.89)

RAS = Reading Anxiety Scale
FLCAS = Foreign Language Classroom Anxiety Scale

Table 2

INTERCORRELATIONS OF ANXIETY MEASURES

	RAS	FLCAS
Group[a]		
RAS	1.00	
FLCAS	70**	1.00
Level 1		
RAS	1.00	
FLCAS	84**	1.00
Level 2		
RAS	1.00	
FLCAS	37*	1.00

[a] Group refers to both levels together.
*p < .05
**p < .0001
All are two-tailed tests of significance
RAS = Reading Anxiety Scale
FLCAS = Foreign Language Classroom Anxiety Scale

not for their interaction: $F (1,83) = 10.24, p < .05; F (1, 83) = 6.30, p < .05$. Significant main effects also were found for level and foreign language classroom anxiety, but not for their interaction: $F (1, 83) = 24.16, p < .0001; F (1,83) = 3.77, p < .05$. In other words, results indicated that highly anxious students tended to recall overall less passage content than those participants who claimed to experience minimal anxiety.

The ANOVAs for the number of correct responses on the multiple-choice assessment revealed significant main effects for level: $F (1,83) = 8.12, p < .05$, but not for either

type of anxiety or for the interaction between level and either type of anxiety. The results for the multiple-choice data did not correspond to the findings for total number of pausal units recalled. Anxiety did not significantly affect the number of correct multiple-choice responses in a systematic way. However, the more-advanced students tended to have more correct multiple-choice responses than the less-advanced students.

The conflicting results may be attributable to the type of information included on the multiple-choice assessment. Of the 10 multiple choice questions, two referred to information that was contained in high-level pausal units, five referred to information from mid-level pausal units, and three referred to information found in low-level pausal units. This focus on less "important" information probably influenced the participants' ability to respond correctly, since it may have assessed more the readers' ability to recognize certain text details from the options given in the multiple-choice questions than their comprehension of the text. This lack of a clear pattern in student responses to the multiple-choice assessment also tends to suggest the superiority of written recall over multiple-choice as an assessment instrument (Lee 1986b; Wolf 1993).

Research Question 3

The ANOVAs indicated that reading anxiety affected the number of important (high-level) pausal units recalled: $F (1, 83) = 7.24 = p < .05$. Foreign language classroom anxiety affected the number of supporting (mid-level) pausal units recalled: $F (1, 83) = 3.17, p < .05$. However, neither type of anxiety affected the number of semantically "unimportant" (low-level) pausal units recalled. In other words, participants who scored higher in reading anxiety tended to recall fewer important (high-level) pausal units than did their less anxious counterparts, whereas foreign language classroom anxiety was not systematically related to the

number of high-level pausal units recalled. In contrast, reading anxiety did not significantly affect the number of supporting (mid-level) pausal units recalled. However, the more highly anxious participants tended to recall fewer mid-level pausal units than did their less-anxious counterparts. Finally, neither reading anxiety nor foreign language classroom anxiety affected significantly the recall of semantically "unimportant" (low-level) pausal units.

It was expected that anxiety would be more detrimental to the recall of main ideas than to the recall of supporting details. Remembering important information would seem to be more demanding and require more mental capacity, since in the processing of important information, participants must organize, interpret, and interrelate the information. Recalling main ideas may also demand a certain degree of sensitivity to organization of the text, whereas remembering supporting details does not (Oh 1990). Anxiety further demands mental capacity. Therefore, participants with higher levels of anxiety were expected to have greater difficulty in remembering important pausal units from the text. With the exception of the lack of a clear pattern for the multiple-choice assessment scores, this was borne out in the present study.

Research Question 4

While information concerning the amount of information recalled is informative and helpful when investigating the relationship between anxiety and reading comprehension, an additional question that arises is: Where in the reading process does anxiety have the greatest influence? One possibility is its effect on the readers' ability to concentrate on the task at hand. Negative expectations, concerns about oneself, the situation at hand, and potential consequences are expected to impede performance because of the high priority for attention that such cognitive information demands (Hamilton, 1985). A direct result is that participants with high levels of anxiety are more likely to activate task-irrelevant information and that this activation, in turn, prevents them from processing information from the text or their long-term memory, since the mental capacity of an individual is limited.

The results of the ANOVAs assessing the interaction between anxiety level and proficiency level on the number of off-task thoughts experienced by the participants in the study indicated that regardless of level or type of anxiety, highly anxious individuals experienced more cognitive interference than their less-anxious counterparts: F (1,83) = 6.66 = p < .05; F (1,83) = 9.37, p < .05. Thus, it can be concluded that anxiety does affect the reader's concentration on a reading task. Highly anxious readers were more distracted by interfering thoughts and were less able to focus on the task at hand, which in turn affected their comprehension of the reading passage. Oh (1990) also found a significant relationship between cognitive interference and several measures of anxiety with Korean students as they read a text in English, with more highly anxious readers experiencing more cognitive interference.

Conclusion

The present study suggests that reading anxiety is a separate and distinct phenomenon in language learning. The lack of interactions of main effects in all data analyses also shows that level and anxiety are independent effects on reading comprehension.

The findings of this study should be interpreted with caution for several reasons. First, they depend on the relia-

Table 3

DESCRIPTIVE STATISTICS FOR READING COMPREHENSION ASSESSMENT

Measure	Possible Range	Mean (%)	Standard Deviation	Range
Level 1				
MC	0–10	6.34 (63.40)	1.57	2-9
High	0–18	1.42 (7.89)	1.50	0-8
Mid	0–16	1.57 (9.81)	1.55	0-6
Low	0–13	1.72 (13.23)	1.77	0-5
Total	0–47	4.70 (10.00)	3.65	0–15
Level 2				
MC	0–10	7.25 (72.50)	1.71	4–10
High	0–18	3.28 (18.22)	1.88	0–8
Mid	0–16	2.94 (18.38)	1.72	1-7
Low	0–13	3.00 (23.08)	1.93	0-7
Total	0–47	9.22 (19.62)	3.74	4–18

MC = multiple-choice assessment score

bility and validity of the instruments used. All instruments were found to be reliable. However, the RAS was originally designed for children reading in their native language. The adapted version that was used for the present study needs to be verified through its inclusion in further research. A second limitation of the study relates to the reading text used. The text was selected because the topic was considered to be of general interest to university students and not entirely unfamiliar to them. The observed relationship between anxiety and L2 reading was possibly influenced by the subject matter of the text or by its level of difficulty for the readers. In their research with learners of French, Japanese, and Russian, Saito et al. (1999) found that students' levels of reading anxiety increased with the perceived difficulty of the reading in the foreign language. Finally, the fact that the allotted reading time of the experimental passage was not included in the analysis is a possible limitation. Eysenck and Calvo (1992) suggest that anxiety has a detrimental affect on task performance due to a reduction in spare processing capacity, but that highly anxious individuals will compensate for their lack of processing efficiency with lengthened processing time. Therefore, a decrease in processing efficiency will not affect perform-

ance as much if the individual has additional time to complete the task. Reading time was not treated as a separate variable in the present study, so no conclusions can be drawn regarding its effects.

There remains little doubt that anxiety influences all aspects of the language learning process and reading comprehension is but one aspect of many open to investigation. Such findings contribute to our understanding of what occurs in the second language classroom and fill in a number of gaps in our current knowledge base. There are several theoretical and instructional implications that can be drawn from this study.

Given the fact that anxiety can influence reading, it might be expected that theoretical models of the reading process would incorporate such a component and would give it due emphasis in recognition of its presumed importance. Some first language reading models have been constructed in such a way as to draw attention to the significance of anxiety in the reading process, but beyond appearing as a "box" in the figure depicting the model, anxiety receives little elaboration or explication (Mathewson 1985, 1994; McKenna 1995; Ruddell and Speaker 1985).

Further studies are needed to gain a greater under-

Table 4

INTERCORRELATIONS OF READING COMPREHENSION ASSESSMENT MEASURES

Measure	MC	High	Mid	Low	Total
Group					
MC	1.00				
High	.25*	1.00			
Mid	.28*	.41**	1.00		
Low	.24*	.35*	.41**	1.00	
Total	.33*	.77**	.77**	.77**	1.00
Level 1					
MC	1.00				
High	.20	1.00			
Mid	.33*	.30*	1.00		
Low	.23	.35*	.42*	1.00	
Total	.33*	.71**	.75**	.81**	1.00
Level 2					
MC	1.00				
High	.08	1.00			
Mid	.04	.25	1.00		
Low	.09	.10	.22	1.00	
Total	.10	.67**	.70**	.67**	1.00

*p < .05
**p < .0001
All are two-tailed tests of significance
MC = multiple-choice assessment score

standing of the role of anxiety in the L2 reading process. It is important to understand the processes of thinking and feeling that occur as a reader interacts with a text. Such an understanding will contribute to a more detailed elaboration of reading models and also provide insight into the development of effective reading instruction programs within the foreign language curriculum.

While this study did not focus directly on language instruction, the findings lend support to several current instructional practices. First, even beginning language learners can comprehend at least portions of authentic texts, making them sources of what has become known as "comprehensible input." Second, learners should be exposed to authentic texts in ways that reduce their anxiety to minimal levels so that they do not feel tension that inhibits second language performance and creates resistance to natural language acquisition and learning.

There are few empirical studies that investigate the effectiveness of anxiety-reducing strategies. Even so, language specialists have developed L2 teaching methodologies that are designed to create a low-anxiety environment for learning (Young 1999). In the context of reading, Lee (1999) provides suggestions for restructuring instructional practices in specific ways to reduce anxiety during the reading task. Further research into the relationship between anxiety and reading will provide more insight into how this can best be done.

To conclude, it is evident that cognitive and linguistic variables alone do not make up a complete picture of the language learning process. By the same token, anxiety is only one of many factors that can influence L2 reading. For this reason, a continued interest in research on affective variables in L2 acquisition is crucial. Such research will offer professionals the insights they need to make well informed curricular and research decisions and thereby increase the effectiveness of L2 learning.

Notes

1. While the questionnaire asked participants to include the hours for both high school and university courses, only university hours were used to calculate the average number of contact hours. This is due to incomplete information from the participants regarding the number of hours spent in high school, as well as the disparity among high school programs, which makes generalizations difficult.

2. It is important to note that the correlation coefficient for Level 2 learners was considerably lower than it was for Level 1 learners. This could be attributed to the difference in language learning experiences between Level 1 and Level 2. Potentially, the greater amount of experience that the Level 2 learners had not only within the language classroom environment, but also with reading in Spanish, may have influenced their responses on the RAS. This will be examined in future studies.

3. In both cases, the researchers used idea unit analysis rather than pausal units. Carrell (1985) defines idea units as consisting of "a single clause (main or subordinate, including adverbial and relative clauses)" (737). According to Lee and Ballman (1987), idea units correspond either to "individual (simple) sentences, basic semantic propositions, or phrases" (110).

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