

# Analysis of the Effect of Content Familiarity and Gender on English as a Foreign Language Reading Comprehension by Spanish University Students

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**ABSTRACT:** The aim of this paper is to explore the relative effects of gender and content familiarity on English as a Foreign Language reading comprehension. Sixty-eight elementary and intermediate level undergraduate English language students at the Faculty of Teacher Training of the University of Oviedo participated in the study. The results of the study show that gender and content familiarity significantly affected the students' overall comprehension of the texts. The study appears to reject the so-called linguistic threshold hypothesis as both the elementary level and intermediate level readers of the study could read with better understanding when the text was familiar, irrespective of their language knowledge and also seems to support the interactive view of L2 reading comprehension.

**Keywords:** reading comprehension, gender, content familiarity, language ability.

**Análisis del efecto de la familiaridad con el contenido y el género en la lectura en inglés como lengua extranjera por estudiantes universitarios españoles**

**RESUMEN:** El objetivo de este artículo es explorar los efectos relativos de género y familiaridad con el contenido del texto sobre la comprensión escrita en inglés como lengua extranjera. Sesenta y ocho estudiantes de la Facultad de Formación del Profesorado y Educación de la Universidad de Oviedo de nivel elemental e intermedio participaron en el estudio. Los resultados muestran que tanto el género como la familiaridad con el contenido tienen una influencia significativa en la comprensión del texto de los sujetos. El estudio parece rechazar la hipótesis del umbral lingüístico ya que tanto los lectores de nivel elemental como los de nivel intermedio leen mejor el texto que les resulta familiar independientemente de su conocimiento de la lengua y también apoya una consideración interactiva de la comprensión escrita en una lengua no nativa.

**Palabras clave:** comprensión escrita, género, familiaridad con el contenido, competencia lingüística.

## 1. INTRODUCTION

Foreign language reading comprehension is believed to be affected by familiarity of content or readers' prior knowledge of the content of the text, and gender. This paper aims to explore the relationship between these different factors and help better understand their role in reading comprehension. Bernhardt (2003) claims that half of the variance in second

language (L2) reading is accounted for by first language literacy (20%) and second language knowledge (30%), and includes background knowledge and gender as factors involved in the remaining variance. She shows the need for experiments that deal with the remaining 50% of the variance.

Bernhardt (2005) proposes a reading model that looks for an explanation of unexplained variance while offering a conceptualization of L2 reading that captures reading over time. She tries to devise a model able to capture interactivity and simultaneity. This model has three knowledge sources: L1 literacy, L2 language knowledge, and unexplained variance. It reflects a compensatory processing that tries to model how knowledge sources help or substitute other inadequate or nonexisting sources, that is, what they use to compensate for such deficiencies. It shows that knowledge sources are not additive, but synchronic, interactive and synergic. This model tries to recover the conceptualizations of the L2 reading process as a switching process in cognition, that is, as the learning process progresses, compensatory mechanisms vary according to the needs.

Experiments are needed to determine the validity of the model as this can only be determined through experimentation and this is the aim of our study.

## 2. SCHEMA THEORY

We concentrate in this paper on Schema Theory to show how background knowledge has an effect on both L1 and L2 reading comprehension. Although other theories also deal with this topic of discussion we have decided to focus on this theory as the literature clearly shows that a possible theoretical explanation for the influence of the content of texts on gender differences in comprehension performance can be found in Schema Theory. The role of background knowledge in language comprehension has been formalized as schema theory. Schema theory is based on the idea originally suggested by Bartlett (1932) that human memory consists of high level structures known as schemas, each of which encapsulates our knowledge about everything connected with a particular object or event. These schemas represent the general knowledge which aids the understanding of conversations and texts, as well as real-life events. A schema theory is a theory about how knowledge is represented and about how that representation facilitates the use of the knowledge in particular ways. The knowledge stored in schemata interferes with the interpretation of new information (Carrell, 1991). If new information is incomplete, the reader makes inferences on the basis of the selected schema in order to fill in the missing parts.

Studies into the schema-comprehension relationship have been conducted initially and primarily in the realm of English as a first language. Later, second language reading researchers have also attempted to examine the effect of knowledge structures on L2 readers' comprehension. The studies show clearly that background knowledge has an effect on both L1 and L2 reading comprehension (e.g. Koda, 2005).

The main results in L2 reading comprehension also point out that the cultural origin of a text affects the subject's understanding of information from the text (e.g., Al-Shumaimeri, 2005; Erten and Razi, 2009).

An important aspect to take into account is the level of influence of L2 linguistic knowledge or proficiency on L2 reading, aspect that is part of the variance in L2 reading according to Bernhardt (1991a, 2005). Some researchers show indications that a threshold in L2 knowledge must be reached before transfer of general abilities such as the use of prior knowledge can operate, this is the so-called linguistic threshold hypothesis (Martino and Hoffman, 2002).

Others reject this hypothesis and affirm that elementary level readers can read with good understanding if they focus on meaning (Anderson, 1991). Bernhardt (1991b: 35) supports this view: "We know both anecdotally and from research evidence that the linguistic system provides a necessary but insufficient understanding of the second language reading process. We have seen readers with well-developed linguistic system fail to comprehend; we have seen readers with meagre linguistic system succeed in comprehension. The explanation for these phenomena must obviously include, but go beyond, the linguistic base."

When we look for empirical studies to clarify the previous contradictory arguments we find inconclusive results. Some L2 reading studies show that the background knowledge of the text has more effect than its linguistic complexity level on the reading comprehension of the subjects (Al-Shumaimeri, 2006; Carrell, 1991).

Kim (1995) examined these two factors simultaneously investigating the reading comprehension performance of 108 Korean high school EFL students who had studied English for 4 years. The author concluded that vocabulary difficulty and prior knowledge affected the process of reading differently. However, Chen (1995) investigated the effect of language proficiency and domain specific knowledge on the comprehension of science texts by Chinese graduate students studying in Canada. Analysis of variance revealed that domain-specific knowledge exerted strong effects on the recall of propositional information, but no significant effect of L2 language proficiency was found.

In a study of students' academic English reading proficiency, Clapham (1996) found a stronger effect of language proficiency on students' comprehension than background knowledge. Whereas poor language proficiency prevented her respondents from compensating for their lack of understanding by using an appropriate strategy, the linguistically proficient readers in her sample could "compensate for a certain lack of background knowledge by making full use of their language resources" (Clapham, 1996: 196).

This unsolved hypothesis clearly points to the need for more in-depth research into the contribution of L2 language knowledge to reading comprehension. The present study serves as one step in that direction.

### **3. EMPIRICAL STUDIES ON THE EFFECT OF GENDER AND CONTENT FAMILIARITY ON READING COMPREHENSION PERFORMANCE**

Dornyei (2005) claims that gender affects every aspect of the language learning process. Some L1 studies from the late 1990s observed gender differences in achievement test performance at the college level. These studies found a relationship between gender differences and specific passage content (e.g. Doolittle and Welch, 1989).

These conclusions have been recently confirmed. O'Reilly and McNamara (2007) explored whether there were any gender-differences on measures of cognitive ability and

science achievement among 1,651 male and female high school students. They found that males scored higher than females on measures of science knowledge, state science test, and passage comprehension.

Empirical investigations on L2 reading approach whether gender interacts with other variables to account for differences in reading comprehension performance with adults at various levels of language acquisition. Bügel and Buunk (1996) carried out a study on gender differences in L2 reading comprehension among intermediate secondary-level Dutch students. Their hypothesis was that the topic of a text is a significant factor with regard to sex differences in foreign language reading comprehension performance. Their theoretical basis is in schema theory. They claim that schema theory can explain why text content can influence the sexes in giving different responses to different reading comprehension questions. Their justification is that since males and females have different interests, they read different topics which eventually results in having different schemata.

Authentic texts from newspapers and magazines were used. One was a neutral text and there were five “male” and six “female” texts. Multiple-choice questions were formulated as measures of reading comprehension. They used as measures of prior knowledge academic subject choice, reading habits, self-reported knowledge and interest concerning the text topic. They found that prior knowledge and topic were related to reading performance among intermediate secondary-level Dutch students. Males scored significantly better on the multiple choice comprehension items for essays about laser thermometers, volcanoes, cars, and football players. Females achieved significantly higher scores on the comprehension tests for essays on text topics such as midwives, a sad story, and a housewife’s dilemma.

Bügel and Buunk (1996) included a gender-neutral passage in their FL study, and they found that males performed significantly better than females on the gender-neutral text. Bügel and Buunk (1996) concluded that the topic of the text contributes to sex differences in foreign language reading comprehension and that differences between the sexes in prior knowledge contribute to gender differences in foreign language reading comprehension.

Brantmeier (2002) found no significant difference in the performance of males and females on two reading passages. The two passages were authentic narratives one on a “male” topic (a boxing match) and another on a “female” topic (a frustrated housewife). The participants were advanced level students. The comprehension assessment tasks were multiple choice as well as written recall.

However, in another study using the same texts and the same assessment tasks with intermediate level L2 learners of Spanish, Brantmeier (2003a) found significant interactions between readers’ gender and passage content with comprehension. She found that intermediate level males outperformed their female counterparts on both written recall and multiple-choice assessment tasks on the “male” passage while females outperformed males on both assessment tasks on the “female” passage.

Brantmeier (2003c) investigated gender differences by text topic with native Spanish speakers studying intermediate level English as a Foreign Language (EFL). She utilized the same reading passages and comprehension assessment tasks as Brantmeier (2002, 2003a). Results showed no significant relationship between gender and topic familiarity; however, females scored higher on recall than males for the “female” passage on a housewife. That is, there was a significant relationship between gender and passage topic on the recall assessment task. This finding is again found in Brantmeier (2004a) with advanced male and

female L2 readers at the university using two different authentic violence-oriented texts and a written recall task and a multiple-choice test as assessment methods, and in Brantmeier (2004b) with readers at the intermediate level of language instruction, using written recall and multiple choice as assessment methods of reading comprehension.

Al-Shumaimeri's (2005) examined gender differences in reading comprehension in relation to the familiarity of gender-neutral texts. He examined the differences between Saudi tertiary level male and female students of English as a foreign language in the comprehension performance of gender-neutral texts. 132 male and female university students studying English at the intermediate level participated in this study.

This study divides their readers into levels of general L2 proficiency according to their instruction level (lower and higher-ability students), that is on the basis of the assumption that students at a higher level and year of study would have gained more exposure to the language and acquired more language skills.

He used two texts from a reading textbook. As familiarity measures, the participants were asked before and at the end of the test to evaluate their knowledge of the content of the texts. The pre-test questions required the participants to check whether or not they had ever heard or read the story or a report about either one of the topics, and whether or not they had ever watched films related to the topics. The post-test questionnaire evaluated their knowledge of the content on a five-point scale from "completely new" to "completely old". The comprehension measures were multiple-choice questions. Participants read a familiar and an unfamiliar text and performed a multiple-choice question test to measure their reading comprehension performance. Al-Shumaimeri (2005) found gender differences in learners' foreign language reading comprehension with male students significantly outperforming their female counterparts in both tests.

One possible explanation given by Al-Shumaimeri (2005) for the superiority of the male students in this study is based on the threshold theory (see above) as he explains that males and females may not have been equally matched in language ability. The male students seem to have passed above their threshold level for these two texts as they seemed to have enough linguistic knowledge to read the texts without great difficulty.

This study also showed that content familiarity had a facilitating effect on the reading comprehension of both the male and female student readers. Although familiarity of content had facilitating effects on both genders' comprehension performance, it seems that these effects are not associated with gender differences. No relationship was found between gender and content familiarity in foreign language reading comprehension performance.

In a posterior study, Al-Shumaimeri (2006) studied the effects of language ability and content familiarity on foreign language reading comprehension. The participants of this study were 132 male and female undergraduate English language students. As is his previous study (Al-Shumaimeri 2005), students from two different levels were chosen (lower and higher-ability students) according to their instruction level.

He used two texts from a reading textbook. As familiarity measures, the participants were asked before and at the end of the test to evaluate their knowledge of the content of the texts. The pre-test questions required the participants to check whether or not they had ever heard or read the story or a report about either one of the topics, and whether or not they had ever watched films related to the topics. The post-test questionnaire evaluated their knowledge of the content on a five-point scale from "completely new" to "completely old". The comprehension measures were multiple-choice questions.

The results showed, as in Al-Shumaimeri (2005), that content familiarity facilitated reading comprehension. Moreover, language ability had a significant effect on the comprehension performance of students at different levels. High ability students performed better on both the familiar and unfamiliar texts. Low-ability students performed better in the test related to the familiar text than in the test related to the unfamiliar text. However, the performances of the high-ability students showed no significant differences between the familiar and the unfamiliar texts. This author concludes that language ability level may have played a compensatory role in facilitating the comprehension of the unfamiliar text.

Brantmeier (2006) conducted a reanalysis of data from her prior studies. Participants were adults enrolled in intermediate through advanced language courses in the USA or Costa Rica. The two reading passages used in Brantmeier (2003a,c) were selected for this study. She studied readers' gender and topic familiarity as predictor variables, using two assessment methods, multiple choice and recall, at two levels of instruction, intermediate and advanced.

In four studies that utilized the same set of texts across levels of language instruction, no significant relationship was found between the multiple choice test method and gender whereas the written recall was consistent by gender with females achieving higher scores than males at the intermediate level of instruction.

Brantmeier (2006) concluded that gender and the interaction of passage content and topic familiarity may be moderating factors that intervene with the actual processing of textual meaning until the reader reaches a higher level of language proficiency. Topic of text does not appear to be an important factor explaining gender differences after readers have reached advanced levels of language instruction, but assessment tasks used to measure comprehension do appear to be important variables worthy of more sustained and in-depth research at all levels of language instruction.

Yazdanpanah (2007) did not find a significant relationship between text topic familiarity and gender on reading comprehension performance. This researcher not only investigates the interaction of a reading comprehension test with gender in a formal testing context but also the performance of males and females on reading test items with regard to demands on strategy use. His theoretical bases are schema theory and interactive reading.

The participants were 187 international students studying English at the intermediate level. Two texts were used, two of the texts had male topics and one had a neutral topic. The questions on these passages tapped different information and each question required the students to interact with the reading passages in a different way, that is, some questions required the students to rely mainly on top-down processing, some on bottom-up processing, and others on both. Different reading comprehension assessment methods were used (multiple choice, true-false questions, fill in the gaps).

Yazdanpanah's (2007) study showed that text topic did not affect the performance of both males and females. The study showed no significant difference in the overall reading ability of males and females. The findings seem to show that females were significantly better at handling both types of reading processes (top-down and bottom-up) (see above) in comparison to males. However, the research suggests that sex differences in reading comprehension tests are affected by what is tested rather than text topic.

Unlike Yazdanpanah's (2007) study which did not find a significant difference in the overall reading ability of males and females, Keshavarz and Ashtarian (2008) did find a

significant difference between the sexes in favor of women. They investigate the relationship between text types and reading comprehension as well as whether gender affects the relationship between text type and comprehension. A reading comprehension multiple-choice test made on three types of text (history, essay, and short story) was administered to EFL university learners at the intermediate level.

The results show that male and female EFL learners differ in their reading comprehension ability with females having a better performance both in each type of text type and in general. Moreover, the study also shows that some types of text are understood better than others regardless of the gender of the subjects.

Contrasting results are found in Shokouhi and Parvareh (2010) who compared the effects of two different kinds of post-adjunct reading comprehension assessment on a group of high school and pre-university students of gender-neutral authentic and non-authentic expository texts. Among the results obtained, which showed higher-order adjunct questions to improve the subjects' reading comprehension as compared to factual questions, they also found that there were no significant gender differences in the comprehension of texts.

Lin (2010) investigated gender differences in reading comprehension, reading time and use of strategies among secondary school Taiwanese students of English. Participants were asked to read three graded readers of the Penguin reader series labeled as Level 2, Level 3 and Level 4. Four instruments were used: a questionnaire about the participants' previous experience in English; pre and post-reading comprehension tests; follow-up reading tests and post-reading questionnaires about the time and strategies used in reading in the classroom. T-tests were used as statistical measures.

Results showed the reading program applied had a stronger effect on the reading comprehension of women than of men, women improved much more than men in reading comprehension and employed less time in their reading. Their reading comprehension ability grew significantly. There were no significant differences between males and females' comprehension of L2 and L3 readers, but females achieved significantly higher scores than males in L4 graded reader. Finally, gender appeared as an essential factor in the application of strategies with women employing more strategies to understand more difficult texts and using them in a more flexible way.

Payne and Lynn (2011) examine gender differences in second language comprehension among university students of Spanish as a foreign language. Participants had to read 14 English text passages and 6 short Spanish text passages on general topics. The results show that males and females differed significantly in second language comprehension, with females performing significantly better than males.

Ay and Şen Bartan (2012) study the effect of readers' interest, gender, and assessment types (multiple-choice questions, Yes/No questions, and short-answer formats) on second language reading comprehension in three different levels (A2.1, A2.2, and B1 in the CEFR), and five different categories of topics. Results showed that females generally attained higher scores overall (in all three levels, five topics, and three test types), but the difference between male and female scores was especially significant in the short-answer formats. Although females were found to be more successful with all of the text topics in this study, both genders got the highest scores from the text of their highest-interest.

We will try to make some generalizations from the previous studies. This is nevertheless a difficult task as they present discrepancies in text types, language proficiency of the

participants and assessment measures of reading comprehension. Bugul and Buunk's (1996) participants were intermediate-level secondary education learners of English and the passages were authentic texts from newspapers and magazines. Multiple-choice questions were used as measures of reading comprehension. Brantmeier's (2002; 2003a; 2003c; 2004a) participants were from intermediate and advanced levels of the university and the passages were 4 different authentic vignettes from short stories. Written recall and multiple choice were the measure of reading comprehension chosen. In Al-Shumaimeri's (2005, 2006) studies, participants were university students studying English at the intermediate level who read two gender-neutral texts, one familiar and the other unfamiliar taken from a reading textbook. The assessment reading comprehension test was a multiple-choice question test.

Brantmeier (2006) used four different authentic vignettes from short stories. Written recall and multiple choice were the measure of reading comprehension chosen. Participants were intermediate and advanced adults enrolled in English as a second language and Spanish as a second language university courses. Yazdanpanah (2007) used three reading comprehension passages (no indication is given of whether they were authentic or taken from textbooks) and the participants were international students studying English at the intermediate level. Two of the texts had male topics and one had a neutral topic. Different reading comprehension assessment methods were used (multiple choice, true-false questions, fill in the gaps). In Keshavarz and Ashtarian (2008) study a reading comprehension multiple-choice test made on three types of text (history, essay, and short story) and was administered to English university learners at the intermediate level. Participants in Shokouhi and Parvaresh' (2010) study were secondary education students. The reading comprehension tests were multiple choice, true/false and free response. They used authentic and non authentic texts. Lin (2010) chose for his study 3 graded readers Penguin levels 2, 3 and 4. Participants were secondary education students. Multiple choice was the reading comprehension assessment method used. This assessment method was used by Payne and Lynn (2011) with university students of Spanish as a foreign language. Participants had to read English and Spanish text passages on general topics. Ay and Şen Bartan (2012) used three assessment methods (multiple-choice questions, Yes/No questions, and short-answer formats), three different levels (A2.1, A2.2, and B1 in the CEFR), and five different categories of general topics from reading textbooks.

Contradictory results are found regarding the relationship between gender and reading comprehension with studies that show no significant gender differences in the comprehension of texts, others that show male students significantly outperforming their female counterparts and still others that show females significantly outperforming males.

Contradictory results are also found with respect to the relationship between the familiarity with the content of the text and reading performance of the two sexes. Some studies found significant interactions between readers' gender and passage content with comprehension. Other studies found that familiarity of content had facilitating effects on both genders' comprehension performance, not finding any relationship between gender and content familiarity in reading comprehension performance.

Finally, factors like assessment tasks used to measure comprehension and language ability appear to be important variables worthy of more sustained and in-depth research.

These contrasting results point to a need for more in-depth studies that clarify the effect of gender and topic familiarity on reading comprehension performance. In view of the theoretical framework above, we have then elaborated the following hypotheses:

1. Gender differences affect reading comprehension performance.
2. Topic familiarity has a significant effect on reading comprehension performance.

## 4. METHODOLOGY

### 4.1. Participants

The participants of this study were 68 male and female undergraduate English language students at the Faculty of Teacher Training of the University of Oviedo. They were divided into two levels of general English proficiency according to a standard test of English proficiency, i.e., Test of English as a Foreign Language: elementary and intermediate.

### 4.2. Material and Comprehension Assessment Instruments

Two gender-neutral expository reading comprehension passages from English textbooks were selected. Text 1 contains 315 words and was entitled *Mobile phones. Curse or blessing?* Text 2 contains 330 and was entitled *Chaos*. Text 1 was very familiar for both men and women (mean=4.0208; mean=4.000), Text 2 was unfamiliar for both men and women (mean= 1.5102; mean=2.3571).

Two different reading comprehension assessment tasks were used: written recall and multiple choice questions. In written recall readers, without looking back at the passage, recall and write down as much as they can of what they have just read. For the multiple-choice method ten questions were elaborated for each passage. While creating the multiple choice items for the present study we followed Wolf's guidelines (1991) for writing multiple-choice questions. This researcher recommends that all items should be passage dependent so that the reader always needs to read a passage in order to choose the correct answer, that some of the items should be elaborated so that the reader could make inferences and that all the distracters in the multiple choice questions should be plausible (or believable) in order to prevent participants from immediately disregarding responses.

Both of these tasks were completed in the learner's native language, Spanish (Wolf, 1993).

### 4.3. Topic familiarity questionnaire

In order to determine whether or not the participants were familiar with the different texts, they were asked at the end of the test to evaluate their knowledge of the content on a five-point scale from "I knew a lot about the topic" to "I did not know anything about the topic at all."

### 4.4. Data collection and analysis procedures

The data collection was conducted in the university setting on normal university days. Students performed the comprehension tests on the different passages.

Participants were asked to follow this order: reading, written recall task, multiple choice task, topic familiarity questionnaire. Participants were told that they would read a passage and then complete comprehension assessment tasks. They were instructed not to look back at any previous pages while reading and completing all tasks. The researcher was present at all data collection times to ensure that participants did not look back at the passage when completing the comprehension assessment tasks.

Each reading was divided into pausal units by two different raters. Pausal units were defined as a unit that has a “pause on each end of it during normally paced oral reading,” (Bernhardt, 1991a: 208). Separately, the researcher and an additional rater identified the total pausal units for each text and then compared results. A template of pausal units was then created for codifying purposes.

## 5. THE RESULTS

In order to answer the first research hypothesis concerned with the effect of gender differences on reading comprehension performance, a regression analysis was conducted. As Table 1 shows, when a multiple choice method of assessment is used, a significant relationship is found between gender and reading comprehension in Text 1 with 9.9 % of variance. A significant relationship is also found in Text 2 both with multiple choice and written recall assessment methods with 5.2% and 8.6% of variance respectively. Males scored significantly better than their female counterparts.

*Table 1. Regression Equation-relationship between gender and reading comprehension performance*

VARIABLES	B not standardized	BETA (B)	t-VALUE	P
<i>Dependent variable: MC SCORE Text 1</i>				
GENDER	-1.557 (0.007)	-0.337	-2.777	0.007
Constant	9.286 (0.000)		0.000	1.000
R <sup>2</sup>	0.114			
R <sup>2</sup> adjusted	0.099			
F	7.711			
Probability of F	18.827 0.000			
N	61			
<i>Dependent variable: MC SCORE Text 2</i>				
GENDER	-1.500 (0.040)	-0.259	-2.095	0.040

Constant	6.214 (0.000)		0.000	1.000
R <sup>2</sup>	0.067			
R <sup>2</sup> adjusted	0.052			
F	4.391			
Probability of F	9.844 0.000			
N	62			
<i>Dependent variable: WR SCORE Text 2</i>				
GENDER	-1.673 (0.011)	-0.317	-2.613	0.011
Constant	5.429 (0.000)		0.000	1.000
R <sup>2</sup>	0.101			
R <sup>2</sup> adjusted	0.086			
F	6.827			
Probability of F	9.610 0.000			
N	62			

This result suggests that there are gender differences in learners' foreign language reading comprehension of texts.

With respect to the second research hypothesis, concerned with the relationship between familiarity and reading comprehension performance, results appear in Table 2. We find that when comprehension is measured through the multiple choice assessment method, there is a significant relationship between these two variables in text 1 with a variance of 8.8%. When we use written recall to measure comprehension, we find a significant relationship between these variables in text 1 with a variance of 17.5%, and text 2 with a variance of 18.3%. We find that the more familiar the text, the better the reading comprehension performance.

*Table 2. Regression Equation-relationship between familiarity and reading comprehension performance*

VARIABLES	B not standardized	BETA (B)	t-VALUE	p
Dependent variable: MC SCORE Text 1				
TOPIC FAMILIARITY	0.571 (0.012)	0.322	2.587	0.012
Constant	5.158 (0.000)		0.000	1.000
R <sup>2</sup>	0.103			

R <sup>2</sup> adjusted	0.088			
F	6.695			
Probability of F	9.082 0.000			
N	61			
<i>Dependent variable: WR SCORE Text 1</i>				
TOPIC FAMILIARITY	0.848 (.001)	0.434	3.671	0.001
Constant	3.306 (0.000)		0.000	1.000
R <sup>2</sup>	0.189			
R <sup>2</sup> adjusted	0.175			
F	13.480			
Probability of F	5.562 0.000			
N	61			
<i>Dependent variable: WR SCORE Text 2</i>				
TOPIC FAMILIARITY	1.020 (0.000)	0.443	3.864 0.000	0.000
Constant	2.395 (0.000)		0.000	1.000
R <sup>2</sup>	0.197			
R <sup>2</sup> adjusted	0.183			
F	14.931			
Probability of F	4.658 0.000			
N	62			

The results then show that content familiarity significantly affected the readers' comprehension performance.

Competence level revealed itself as a significant factor. We found a significant relationship between competence level and comprehension performance in both texts. With multiple choice, we find a significant relationship between competence level and comprehension in text 1 with a variance of 15.4% and text 2 with a variance of 15%. With written recall, we find a significant relationship between competence level and comprehension in text 1 with a variance of 8.7% and in text 2 with a variance of 4.6%. We find that the higher the competence level the better the readers' comprehension performance.

*Tabla 3. regression equation-relationship between efl competence and reading comprehension performance*

VARIABLES	B not standardized	BETA (B)	t-VALUE	p
Dependent variable: MC SCORE Text 1				
EFL COMPETENCE	1.610 (0.001)	0.409	3.476	0.001
Constant	7.120 (0.000)		0.000	1.000
R <sup>2</sup>	0.168			
R <sup>2</sup> adjusted	0.154			
F	12.085			
Probability of F	19.904 0.000			
N	61			
Dependent variable: MC SCORE Text 2				
EFL COMPETENCE	1.980 (0.001)	0.405	3.461	0.001
Constant	3.885 (0.000)		0.000	1.000
R <sup>2</sup>	0.164			
R <sup>2</sup> adjusted	0.150			
F	11.977			
Probability of F	8.859 0.000			
N	62			
Dependent variable: WR SCORE Text 1				
EFL COMPETENCE	1.333 (0.013)	0.320	2.569	0.013
Constant	4.500 (0.000)		0.000	1.000
R <sup>2</sup>	0.102			
R <sup>2</sup> adjusted	0.087			
F	6.599			
Probability of F	11.193 0.000			
N	61			
Dependent variable: WR SCORE Text 2				
EFL COMPETENCE	0.919 (0.057)	0.251	1.941	0.057
Constant	6.960 (0.000)		0.000	1.000
R <sup>2</sup>	0.063			
R <sup>2</sup> adjusted	0.046			
F	3.768			
Probability of F	19.493 0.000			
N	62			

## 6. DISCUSSION

The aim of this paper was to explore the relative effects of gender and content familiarity on EFL reading comprehension. In general, gender and content familiarity were found to have significantly affected the students' overall comprehension of the texts.

The male students performed significantly better than the female students in their comprehension performance of a familiar and an unfamiliar text. These results appear to support Bügel and Buunk's (1996) and Al-Shumaimeri's (2005, 2006) findings that male students perform significantly better than female students in comprehending gender-neutral texts.

The results appear to be in contrast to the generally accepted assumption that female students tend to be more successful in language learning than their male counterparts (Sunderland, 2000).

One possible explanation for the gender effect found in this study may be related to the type of texts used. They were informative texts and it has been suggested in the literature that male students tend to read much more informative literature than female students (Bügel and Buunk, 1996; O'Reilly and McNamara, 2007).

Another explanation for the superiority of the male students in this study seems to be related to the readers' interest. It seems that male students are interested in certain topics and possess quite a lot of knowledge about such topics. They also have at least some knowledge about other topics in which they are not so much interested, which allows them to understand a wide range of different types of texts. Females, on the other hand, are interested in certain topics but show very little interest in other topics about which they have as a result, very little or no knowledge. When texts are unfamiliar females' performance is therefore worse. More research is nevertheless needed to support this conclusion. We intend to analyze in future research works the effect of interest and motivation on foreign language reading comprehension, as these two factors are part of the unexplained variable in Bernhardt's (2005) reading model, and their role in the processing of the L2 text is to a large extent still unknown.

Content familiarity significantly affected students' overall comprehension performance: the more familiar the text the better the reading comprehension performance. The results suggest that content familiarity affect the comprehension performance of both male and female students. These results appear to support the schema theory of reading, and research on L2 reading (Carrell, 1991). As we explained above, according to the schema theory of reading, knowledge of text content can facilitate reading comprehension during the encoding/decoding process by providing a knowledge structure to which readers can compare and fit pieces of incoming information.

This study appears to reject the so-called linguistic threshold hypothesis that defends that a threshold in L2 knowledge must be reached before prior knowledge can be effectively used (Martino and Hoffman, 2002). Both the elementary level and intermediate level readers of our study could read with better understanding when the text was familiar, irrespective of their language knowledge.

The results seem to support the interactive view of L2 reading comprehension that regards reading as an interactive process involving the combination and integration of various sources of knowledge including both lower-level linguistic sources and higher-level knowledge sources; specifically, it seems to support Bernhardt's (2005) compensatory reading model in which knowledge sources help or substitute other inadequate or nonexistent sources.

As the results reveal, content familiarity is likely to be a factor linked to gender. Therefore, future research works, mainly of a qualitative nature, must be carried out to discover what is behind familiarity, and especially if gender is a relevant influencing factor.

Although we used two measures of comprehension since the assessment method appears in the literature as a variable worthy of more research (eg. Brantmeier, 2006), no significant gender or content familiarity differences were found in comprehension as a function of the type of assessment used.

Language competence significantly affected students' overall comprehension performance: the higher the competence level the better the readers' comprehension performance. The importance of language ability is clear in both elementary and intermediate students. More research is intended to be carried out in the future in order to analyze the effects of language competence and content familiarity on foreign language reading comprehension. The effect of language competence on the reading comprehension of students at different levels and the effect of language competence on the reading comprehension of familiar and unfamiliar texts are important issues that we intend to deal with in a future research work.

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