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## **The Influence of Content Familiarity, Gender Difference and Proficiency Level on Reading Comprehension Performance: A Study on Malaysian Undergraduate Students in UPM**

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### **ABSTRACT**

Much research has been done on the influence of several variables individually on Reading comprehension, but the influence of these variables as a whole was not given much attention. The aim of this study was to investigate the relationship between reading comprehension as a dependent variable and three independent variables namely: gender differences, English language proficiency level and content familiarity. An additional goal was to examine the interrelation between the three independent variables. The participants were 127 male and female Malaysian students attending English language proficiency classes at the English language department in University Putra Malaysia (UPM). The study employed a quantitative approach and the data was collected through a questionnaire which was of three main parts: two reading passages (one is content-familiar and the other one is content- unfamiliar texts) and a written interview. All participants were asked to answer the whole survey and then they were classified on the basis of their proficiency level and gender. The major findings revealed that there was a direct relation between content familiarity and reading comprehension while there was an indirect relation between each of gender differences and English language proficiency level on one side and reading comprehension on the other side.

*Keywords:* Reading comprehension, content familiarity, gender difference, and English language proficiency level

### **1.0 INTRODUCTION**

Anderson, Hiebert, Scott, and Wilkinson (1985) pointed out that reading is the practice in which the reader constructs meaning out of the written texts. Anderson *et al.* (1985) added that this linguistic skill is complex and dynamic as it requires a coordination of a number of ‘interrelated sources of information’. Wixson, Peters, Weber & Roeber (1987) also highlighted that reading is the act of getting the meaning out of the written text and explained those ‘required sources’ previously mentioned by Anderson *et al.* (1985). They assumed that readers can extract the meaning out of the written text through the interaction of the following sources: (1) the reader's existing knowledge; (2) the information suggested by the text being read; and (3) the context of the reading situation. Therefore, the comment by (Schoenbach, Greenleaf, Cziko, & Hurwitz 1999, p. 38) that “Reading is not a straightforward process of lifting the words off the page”.

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Chastain (1988) highlighted the process of reading as an active cognitive system operating on printed material in order to comprehend the text. He further states that during the writing process, the writer tries to activate background and linguistic knowledge to create meaning; and then the reader's task is to activate background and linguistic knowledge to recreate the writer's intended meaning. In this connection, Rubin (1993) defined reading as a complex process involving 'bringing of meaning to and the getting of meaning from' the written material. He added that this definition emphasizes the role of the background knowledge and the emotions readers bring while approaching a text. Unlike the simple definitions revolving around the meaning extraction out of this written text, the definition given by Rubin (1993) highlights the concept of 'bringing to' side by side with 'getting from' implying that there is an interactive relationship between the reader and the written material.

Owing to the advantage of reading and the privilege it gives to readers, much research has been done in the area of reading and reading comprehension. For instance, Li & Lai's (2012), Al-Shumaimeri's (2005) and Sotoudehnama & Asadian's (2011) studies discussed how reading comprehension is affected by gender differences and content familiarity. Meanwhile, Salmani-Nodoushan (2003) investigated the impact of proficiency level and gender differences on reading comprehension performance of university students. Other researchers like Beck & Juel (1995) and Smith (1978) addressed decoding as the basic skill of reading and investigated the indispensable role it plays in the area of reading comprehension. In their study, Beck & Juel (1995) further studied the skill of decoding and differentiated between the following terms: decoding, word attack, word identification and word recognition.

### **1.1 Statement of Problem**

Tertiary education represents a new phase in the life of the student in which he/she enters a new academic world with new educational system that is more advanced than that of school education. Tertiary students face many challenges like getting used to the new teaching methods, getting to know the various types of assessment formats, learning how to study independently, and dealing with the increasing work and tasks.

Thus, tertiary students will have to deal with more academic work than they used to have in their school education. For example, they are required to go beyond the confines of their university or college curriculum and use other references rather than their text books. At this stage, reading becomes more important as the students are asked to search and do assignments and term papers. That explains why universities urge their student especially the new ones to consult the university library and to be aware of the different reading services and facilities available to them.

As has been previously mentioned, reading comprehension becomes more important for tertiary students as they have to deal with references and more sophisticated texts of different types (descriptive, narrative and expository). It becomes also important for tertiary student to be able to comprehend and understand those kinds of texts. This point has been supported by Montelongo & Hernandez (2007) who pointed out that students, especially in today's world, should be able to comprehend and understand the written texts.

It is believed that this study is worthy to be conducted since it has three variables to look at: gender differences, content familiarity and English language proficiency level as the dependent

variables and reading comprehension as the independent variable. These variables were never addressed together at least in the Malaysian context and the previous research in this area used to examine the influence of one or two of these dependent variables on reading comprehension. Therefore, this study was intended to look at the three previously mentioned variables together in order to have the full picture and to get a richer data.

This study is special because it goes deeper and answers, in addition to the first three questions about the influence of these those variables on reading comprehension, the last two research questions about the interrelation between the three variables. This further investigation is believed to bring out richer data and answer concerns regarding the interrelation among these three variables. Moreover, certain issues might be involved in the discussion. For example, one notion that can be investigated is the assumption that sometimes text familiarity does not matter for a good student since he/she possesses the necessary level of language proficiency to deal with the old or even new knowledge and information while weak students perform better in the familiar text since the familiarity of content might compensate for their lack of English proficiency level.

## **1.2 Research Questions**

In the light of the above discussion, the following research questions are formulated to guide the research

1. How does content familiarity affect reading comprehension?
2. How does gender difference affect reading comprehension?
3. How does the level of English language proficiency affect reading comprehension?
4. What is the relation between English language proficiency level and content familiarity?
5. What is the relation between gender difference and content familiarity?
6. What is the relation between gender difference and English language proficiency level?

## **2.0 REVIEW OF LITERATURE**

### **2.1 Schema Theory**

The terms 'schema' and 'schema theory' have been defined many times by different researchers like Bartlett (1932); Rumelhart (1984) and Gilakjani & Ahmadi (2001). Garner (1981) defined schema as the 'knowledge structure' stored in the mind of the reader and this kind of structure is the accumulation of a person's personal experiences. Gilakjani & Ahmadi (2001) stated that "the notion of schema is related with the organization of information in the long-term memory that cognitive constructs allow". Rumelhart & Ortony (1977) also emphasized the same idea and used the phrase "Interacting knowledge structures" referring to schema. Rumelhart (1980) gave almost the same definition with different words using the term "cognition blocks" in the mind. The nature of this organization was highlighted by Xiao (2008) who claimed that information is stored in our minds in hierarchical categories and there is an 'accumulation' of the past experiences and background knowledge.

In that sense, the term schema is used to refer to a piece of knowledge stored in our minds while schemata represent the background knowledge a person has. A similar definition with an explanation of how schema works was provided by Bartlett (1932) who stated that schema is “an active organization of past reactions of past experiences, which must always be supposed to be operation in any well-adapted organic response”. Bransford (1994) further highlighted this mechanism saying that as the reader reads, he/she keeps forming and generating hypothesis about the words being read and that is so due to the existence of the background knowledge that is considered the essence of this theory.

Thus, it can be said that schema theory plays a significant role in the process of reading and describing how readers create psychological representations to perceive and understand reality. Therefore, schema theory is a theory that describes how prior knowledge and information are represented in the mind. This representation was best described by Rumelhart (1980) who stated that “All knowledge is packaged into units. These units are the schemata.”

Another aspect that is important to be mentioned here is that schema is culturally bound due to the fact that prior knowledge is also related to the culture of the reader. For example, a person from a certain culture might not be familiar with other aspects from another culture as the case of the two texts used in this study. This point has been highlighted by Al-Mahrooqi (2012) who claimed that when the reader approaches a written text; he brings along his background knowledge that is related to his own culture. In that sense, reading comprehension might be different among readers. Therefore, schema, like prior knowledge, differs among readers who come from different backgrounds and experiences.

### **3.0 METHODOLOGY**

#### **3.1 Background of the Research Site**

This study was conducted in the Faculty of Modern Languages and Communication, University Putra Malaysia (UPM). The participants were 127 Malaysian undergraduate students from different majors. The participants of the study were from both genders (50 males and 77 females). They were all Malaysians. The participants of this research were also selected according to their scores in the Malaysian University English Test (MUET) and their academic levels in order meet the proficiency requirements and serve the goal of this research.

#### **3.1 Materials**

Two gender-neutral texts. Two gender-neutral different texts were used: one was familiar and the other was unfamiliar to the targeted population. Since the participants in this study were Malaysian students, the researcher chose a text called 'Gamat'. It is believed that the text is familiar to the Malaysian students as it is a product commonly sold in Pulau Langkawi. Therefore, the text has both content and cultural familiarity. This text was chosen from a number of texts found in a Malaysian English Language Test (MUET) held at The Islamic Science University of Malaysia (USIM) for the

second Semester, and Academic Session 2006/2007. The 'Gamat' text consists of 7 paragraphs. This text started with an introduction about the history of 'Gamat' in the Malaysian Community and where it is located and the ancient belief of 'Gamat'. The writer concluded the text by discussing the scientific research done by a group of scientist to verify those beliefs.

The other gender-neutral adopted text was under the name Nablus soap. It was considered as the unfamiliar passage because it is not known to the Malaysian students. Nablus soap belongs to the Palestinian culture. It was taken from the official site of Nablus Soap: <http://www.nablussoap.eu/about-nablus-soap/>. Nablus is a Palestinian town known for many products especially the Soap which is really connected to the history of that town. Similar to the first text, the second text started with a brief introduction about the history of the soap industry as well as its founders. It proceeded to talk about the reputation and the popularity of that soap in Palestine and other places. Towards the end, the writer talks about the components of that soap and that it is completely natural and ends up by comparing it with the modern types of soaps.

Three interview questions. At the end of the two passages, the participants were asked to answer three interview questions. The first item was to measure the students' perception of the two texts and to know which was more difficult. This question was directed to the students to test their first impression or their general judgment of the two comprehension texts. Thus, two choices were given to the students namely: text one in reference to the 'Gamat' text and text two in reference to 'Nablus soap' text. To get more detailed answers from the students, the second and the third questions required the students to identify the difficult element(s) in the more difficult text and the facilitating elements in the easier text. For that, each question was given three choices: Vocabulary, style of writing and familiarity of content. In addition, the students were given an additional choice in which they can write any other difficult/easy element(s) they might have encountered in the two comprehension texts.

### **3.2 The Participants**

The study was conducted on 127 participants (50 males and 77 females) attending English language proficiency classes offered by the university. Using a purposive sampling, the participants were further classified according to their proficiency level which was represented in their Malaysian University English Test (MUET) scores and their academic level. Moreover, all the participants were asked to do both comprehension texts: the familiar and the unfamiliar to investigate the effect of content familiarity on reading comprehension. Therefore, the participants of the study were finally classified into eight groups following the criteria just mentioned. Table 1.1 shows the final classification of the participants.

**Table 1** Final classification of the participants of the study

Gender	Classification	Number	Percentage
MH	(FC)	37	29.13%
	(UC)		
ML	(FC)	40	31.49%
	(UC)		
FH	(FC)	24	18.89%
	(UC)		
FL	(FC)	26	20.49%
	(UC)		

MH: high proficiency male participants. ML: low proficiency female participants. FH: high proficiency female participants. FL: low proficiency female participants FC: content-familiar text. UC: content-unfamiliar text.

### 3.3 Data Collection and Procedures

Before conducting the survey, a written permission was obtained from the head of English department, Faculty of Modern Languages, University Putra Malaysia (UPM). Then, after coordinating with the lecturers of the selected classes, the researcher conducted the 25-minute survey in each class. That process took around one month in which a total number of 145 samples from both genders and from different bands were collected. In that 25-minute survey, the students were required to fill up their details: name, gender, MUET score and semester of study; read the two texts; answer the multiple choice questions; and finally answer the three interview questions. After excluding the uncompleted surveys and those that do not meet the requirement of research, the total number for the analysis dropped to 127 (see section 3.5).

### 3.4 Analysis

As the first analysis tool, correlation was used to answer the first three questions about the effect of the independent individual variables (content familiarity, English language proficiency level and gender difference) on reading comprehension performance. Among the several types of correlation, Pearson Product-moment Correlation which is considered as the standard type of correlation was first used and applied in this study to determine the relation between the previously mentioned variables.

Multiple Linear Regressions was also used as the second tool of analysis to provide a more and a better understanding on the nature of the influence of the independent variables on the process of reading comprehension and understanding. To be more specific, the two-way analysis of variance (ANOVA) test was used to answer the first three research questions seeking to investigate the effect of the three independent variables (gender differences, proficiency level and content familiarity) on the dependent variable (reading comprehension). Finally, a t-test was conducted for more than once on the various study groups to investigate the relation as well as the interrelation between the different variables.

## 4.0 RESULTS

### 4.1 The First Three Research Questions

The following Table 1.2 shows the correlation between each of these independent variables and the dependent one.

**Table 2** The correlation between each independent variable and the dependent one  
**Correlations**

		PE	G	FC	UC	RC
PE	Pearson Correlation	1	-.001	.278**	.235**	.026
	Sig. (2-tailed)		.995	.002	.008	.770
	N	127	127	127	127	127
G	Pearson Correlation	-.001	1	-.198*	-.181*	-.094
	Sig. (2-tailed)	.995		.026	.042	.293
	N	127	127	127	127	127
FC	Pearson Correlation	.278**	-.198*	1	.618**	<b>.270</b>
	Sig. (2-tailed)	.002	.026		.000	.002
	N	127	127	127	127	127
UC	Pearson Correlation	.235**	-.181*	.618**	1	<b>-.322</b>
	Sig. (2-tailed)	.008	.042	.000		.000
	N	127	127	127	127	127
RC	Pearson Correlation	.026	-.094	.270**	-.322**	1
	Sig. (2-tailed)	.770	.293	.002	.000	
	N	127	127	127	127	127

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

PE: English language proficiency level, G: gender difference, FC: content familiarity, UC: content unfamiliarity, RC: reading comprehension.

As illustrated in Table 1.2, there is a significant correlation between content familiarity variable (C) on reading comprehension. Additionally, the findings demonstrated that there was a positive correlation between the content-familiar text represented by 'Gammat' text and reading comprehension with a value of .270 while a negative correlation was found between the content-unfamiliar text represented in 'Nablus soup' text and reading comprehension (.322). In other words, the comprehension of a text is connected to its familiarity. As content familiarity increases, the comprehension of the text increases and vice versa.

Not like the positive correlation resulted between content familiarity and reading comprehension, Table 1.2 shows that gender differences (-.094) does not correlate with reading comprehension. The same result was found in the case of English language proficiency level (PE) and reading comprehension with a value of .026.

To further investigate the relation between each independent variable and reading comprehension, a multiple linier regression tool (Anova) was also used. Table 1.3 provides a summary of this analysis.

**Table 3** A summary of the six Anova tests

Model	Sum of Squares	df	Mean Square	F	Sig.
C x RC	7.865	4	1.966	26.698	.000 <sup>a</sup>
PE x RC	.012	1	.012	.086	.770 <sup>a</sup>
Gender x RC	.149	1	.149	1.116	.293 <sup>a</sup>
G x C x RC	7.864	3	2.621	35.883	.000 <sup>a</sup>
PE x C x RC	7.732	3	2.577	34.766	.000 <sup>a</sup>
G x PE x C x RC	7.865	4	1.966	26.698	.000 <sup>a</sup>

C: content familiarity. G: gender difference. RC: reading comprehension. PE: English language proficiency level.

Table 1.3 reveals that there was a relationship between Content familiarity and reading comprehension since there is a significant difference (.000). The result is negative in the case of gender difference and reading comprehension performance since there was no significant relation between both of them with a value of (.293). In the same way, the relation between English language proficiency level and reading comprehension with a value of (.770) was also not significant. The results of this table confirm the previous results in Table 1.2 for the correlation.

Table 1.3 also shows that a further analysis was used to determine the nature of the relationship that might exist between the different variables of this study. As it appears, a significant relationship with a value of (.000) was found between the three independent variables: reading comprehension (RC), content familiarity (C) and gender difference (G). The result is similar between English language proficiency level (PE), content familiarity (C) and reading comprehension (RC). Moreover, the interaction of the whole design including content familiarity (C), gender difference (G), English language proficiency (PE) and reading comprehension (RC) was significant.

#### 4.1 Research Question 4

The following tables 1.4 and 1.5 illustrate the relation between the two independent variables: content familiarity and English language proficiency level.

**Table 4** The performance of high- level students in the reading comprehension texts

	PE	N	Mean	t-test	Sig
<b>High</b>	FC	61	6.7623	3.239	0.02
	UC		5.5164	2.699	0.08

FC: content familiarity. UC: content unfamiliarity. PE: proficiency level.



**Table 5** The performance of the low-level students in the reading comprehension texts

	PE	N	Mean	t-test	Sig
low	FC	66	5.7485	3.239	0.02
	UC		4.7576	2.699	0.08

FC: content familiarity. UC: content unfamiliarity. PE: proficiency level.

Looking at the interaction between the two groups of English Language proficiency (low and high proficiency) and content familiarity (content-familiar and content unfamiliar-texts), it was found that there was a significant relation between proficiency level (PE) and content-familiar text (FC) with a value of 0.02 while there was no significant difference between the Proficiency level (PE) and content-unfamiliar text (UC) with a value of (0.08).

Table 1.4 indicated that the High-proficiency students’ performed better in the Content-familiar text (mean= 6.7623) than the content-unfamiliar text (mean = 5.5164). The same result was also observed in the low-level students with a mean score of 5.7485 for content-familiar text and 4.7576 for content-unfamiliar text. These results indicated that content familiarity facilitated comprehension for both low-proficiency and high-proficiency students.

In determining whether proficiency level affect the comprehension of a text, reading comprehension performance of the high and low-proficiency level students was measured once in the content familiar text and then in the content unfamiliar one. Regarding the text with familiar content (FC), the high-level students, with a mean score of 6.7623 outperformed the low-proficiency ones with a mean score of 5.5164 as seen in Tables 1.4 and 1.5.

The same result appeared when comparing the reading comprehension performance between the different proficiency levels in the text with the unfamiliar content. In the text with unfamiliar content, high-level English proficiency students (mean score 5.5164) outperformed the low-level students with (mean score 4.7576) as seen in Tables 1.7 and 1.8. These results confirmed that English language proficiency (PE) facilitated reading comprehension.

#### 4.2 Research Question 5

Tables 1.6 and 1.7 were created to show the difference in the two gender performance.

**Table 6** The performance of both genders in the content-familiar text

	Gender	N	Mean	T test	Sig
(FC)	Male	50	5.7880	-2.259	0.026
	Female	77	6.5260		

FC: content familiarity

**Table 7** The performance of both genders in the content-unfamiliar text

Gender	N	Mean	T test	Sig
(UC) Male	50	4.7600	-2.053	0.042
Female	77	5.3571		

UC: content unfamiliarity.

Looking at the interaction between the two independent variables: gender difference and content familiarity (content-familiar and content-unfamiliar texts), it was seen that there was a significant relation between gender differences and content familiarity.

In the content-familiar text, it appears that female participants with a mean score of 6.5260 outperformed their male counterparts with a mean score of 5.7880. Similarly, for the unfamiliar text, females again outperformed their male counterparts with a mean score of 5.3571 for females and 4.7600 for males. The results showed that there was a significant difference in reading comprehension between males and females in both familiar and unfamiliar texts in favour of female participants.

It is also observed from Tables 1.6 and 1.7 that male students' performance in the content-familiar (FC) text with a mean score (5.7880) was better than their performance in the content-unfamiliar one (UC) with a mean score (4.7600). The same picture is found with the female participants whose performance in the content-familiar text (FC) with a mean score (6.5260) was better than their performance in the content-unfamiliar text (UC) with a mean (5.3571). This result indicated that content familiarity has facilitated the comprehension of both male and female participants but in a different degree.

### 4.3 Research Question 6

**Table 8** The interaction between the independent variable  
**Group Statistics**

Proficiency level	N	Mean	Std. Deviation	Std. Error Mean
(FC).Female H	37	7.0541	1.91044	.31407
L	40	6.0375	1.83411	.29000
(UC).Female H	37	5.7838	1.33615	.21966
L	40	4.9625	1.95260	.30873

FC: content familiarity. UC: content unfamiliarity H: high-proficiency students  
L: low-proficiency students.

**Table 9** The interaction between the independent variables**Group Statistics**

Proficiency level	N	Mean	Std. Deviation	Std. Error Mean
(FC). Male H	24	6.3125	1.73087	.35331
L	26	5.3038	1.26822	.24872
(UC).Male H	24	5.1042	1.42172	.29021
L	26	4.4423	1.30635	.25620

FC: content familiarity.

UC: content unfamiliarity.

H: high-proficiency students

L: low-proficiency students.

In case of the familiar text, high-proficient female participants (F.H) with a mean score of (7.0541) outperformed the low-proficiency female students (F.L) who scored (6.0375). Table 1.8 also shows that the high- proficiency male participants with a mean score of (6.3125) outperformed the low-proficiency male students who scored (5.3038).

In case of the unfamiliar text, high-proficiency female students with a mean score of (5.7838) performed better than the low-proficient female students who scored (4.9625). Table 1.9 also shows that high-proficient male students with a mean score of (5.1042) outperformed the low-proficient male students who scored (4.4423).

#### 4.4 Discussion

**Content Familiarity and Reading Comprehension.** Content familiarity is said to have a strong impact on reading comprehension and that was based on the statistics shown in the early analysis. Regarding the texts provided, 81.1% of the students chose the second reading comprehension text as the more difficult one and the rest of the participants forming 18.89% chose the first text ‘Gamat’ as the more difficult one. Thus, the majority of the students in this study chose the unfamiliar text ‘Nablus soap’ as more difficult than the familiar text ‘Gamat’.

Regarding questions two and three, Table 1.10 shows that 71.6% of the students reported that the two elements, vocabulary with 32.47% and content familiarity with 71.6% played a significant role in making the first text which was chosen, the unfamiliar text, as the more difficult one. The same two items were ticked 27.55% and 77.16% respectively as the facilitating elements in the easier passage which was the familiar text.

The correlation in Table 1.4 proved that students from both genders across different levels of English language proficiency performed better in the familiar text than the unfamiliar one. Moreover, the correlation proved that both content-familiar and content-unfamiliar texts had an impact on comprehension due to that fact that as familiarity increases, the comprehension increases and vice versa. This result was further investigated using the Multiple Linear Regression and it was found that there was a significant interaction between content familiarity and reading comprehension.

These results support the findings of the previous researches in this field such as the studies by Al-Shumaimeri (2005); Brantmeier (2003) and Al-Shumaimeri (2010) which proved that the familiarity of the reading content facilitated the comprehension performance for readers. For example, Al-

Shumaimeri (2005) found that there was a significant relation between content familiarity (C) and reading comprehension (RC).

The fact that content familiarity affects comprehension is well grounded in schema theory which places much emphasis on the significant role that prior knowledge plays in reading comprehension. This relation between reading comprehension and schema theory has been explained by many researchers such as Bartlett (1932) and Bransford (1984). They pointed out that when readers read, they deal with the information of the text and try to relate them with their own information and prior knowledge. According to Cook (1989), some key words in the text might stimulate the mind and activate the content schema. Moreover, when reading a certain text, readers keep forming and generating hypothesis about the information being encountered in the text. Thus, the word schema is related to the background knowledge which is the essence of familiarity.

The Influence of Gender Difference and English Language Proficiency Level on Reading Comprehension. In terms of gender difference, the statistical results revealed that there was no correlation between gender difference and reading comprehension or similarly between English language proficiency level and reading comprehension. These results seem to contradict with the findings of Al-Shumaimeri (2005) and Al-Shumaimeri (2006). The same result is found with English language proficiency level which seems to contradict with the findings of Al-Shumaimeri (2006) as well as Keshavarz, Atai, & Ahmadi (2007) and Salmani-Nodoushan (2003) which found that there was a significant relation between English language proficiency and reading comprehension.

For further investigation and to get a clearer picture, Anova test was used and was applied six times to measure any possible interrelations. Each test aimed at determining a different relation between the different variables (See Table 1.6). Besides emphasizing the significance in the relation between content familiarity and reading comprehension, Table 1.6 also showed that there was no, at least a direct, significant relationship between reading comprehension and proficiency level or between reading comprehension and gender difference.

The word direct is used here due to the fact that both gender differences and English language proficiency level might influence reading comprehension but in an indirect way since the direct interaction has been rejected by both analysis as shown in tables 1.4 and 1.5. Thus, it is claimed, in the current research, that both gender difference and English language proficiency level individually may influence reading comprehension but through content familiarity. This claim is built on the basis of the last three relations in table 1.5. First, the interaction of the whole design was measured and it was found that the three independent variables together (gender difference, content familiarity, proficiency level) have a significant interaction with reading comprehension. This means that the three independent variables affect reading comprehension in one way or another. Second, there was a significant interaction between reading comprehension and both gender differences and content familiarity. Third, the interaction was also positive between reading comprehension and both content familiarity and proficiency level. Finally, the results appeared in Tables 1.7, 1.8, 1.9 and 1.10 proves that the relations between gender and content familiarity, and English language proficiency level are significant. All of these results may confirm the claim that reading comprehension is affected by the three independent variables of the study either directly or indirectly.

Based on the explanation above, it can be said that this research does not reject the previous claims that both gender differences and English language proficiency level influence reading

comprehension. Instead, it might provide a modification stating that these two variables might have an indirect influence on reading comprehension through content familiarity.

Content familiarity and English language proficiency level. At the beginning of the data analysis and by looking at Table 1.3, it was assumed that there might be a significant relation between content familiarity and proficiency level due to the fact that there was a significant interaction between reading comprehension, content familiarity and proficiency level. Tables 1.4 and 1.5 further confirmed the result that there is a significant relationship between content familiarity and English language proficiency level. The current study showed that the students of the two different levels proficiency performed better in the familiar text than the unfamiliar one. Regarding this point, the results of the current study support the early findings by Salmani-Nodoushan (2003) who stated that reading comprehension is not only affected by English language proficiency, but also by the interaction between English language proficiency and content familiarity.

The findings of the current study contradict with the findings of Al-Shumaimeri (2010) and Salmani-Nodoushan (2003) that looked at the interaction between content familiarity and English language proficiency. In his study, Al-Shumaimeri (2010) concluded that English language proficiency level might have the ability to compensate the lack of content familiarity. He based his judgment on the result that the low-proficiency students performed better in the familiar text than the unfamiliar one, while there was no significant difference between the high-proficiency students in both texts. In other words, these result implies that the unfamiliarity of the text does not form an obstacle for the high-proficiency students. In contrast, the current-study results mentioned above regarding English language proficiency and content familiarity refute the claims that English language proficiency can compensate the lack of content familiarity. Instead, the current study assumes that proficiency level does not compensate the lack of proficiency. Moreover, English Language proficiency level, in the current research, affected the reading of the high and low level students across the two texts in the same rate. That was clear as the high proficiency students did better than their low proficiency counterparts in both the familiar and the unfamiliar texts

Finally, the results of the current suggest that reading can be affected positively or negatively by certain variables like content familiarity, gender differences and proficiency level.

Gender Difference and Content Familiarity. Based on Tables 1.6 and 1.7, it can be noticed that there was a significant interaction between the two independent variables: gender difference and content familiarity. On one hand, the current study might be similar to the study of Al-Shumaimeri's (2005) in the sense that there is a considerable difference between males and females. On the other hand, the findings of the current study contradicts with other studies like those by Alkhawaldeh (2012), Prado & Plourde (2011) and Phakiti (2003) which claimed that there were no remarkable differences between genders in reading comprehension. The current study suggests that females did better than males in reading comprehension for both familiar and unfamiliar texts.

According to Wei (2009), in addition to other factors like the readers' proficiency level, text type and text level of difficulty; gender difference has a significant influence on reading comprehension performance. In her study, she claimed that secondary level female students show a better comprehension than their male counterparts. Coles and Hall (2002) also suggested that females read more than males. This common superiority of females over males in the area of reading comprehension performance and achievement has been discussed in many studies. One of these studies was the one by Logan & Johnston (2010) who claimed that this difference in achievement can be as

the sum of several kinds of differences between the two genders. They are found in the cognitive abilities, brain activation, reading attitudes and reading motivation. For example, Investigating the of brain activation during visual and auditory processing of both genders, Burman, Bitan, and Booth (2008) argued that females surpass males in developing an approach to reading where visual and phonological information is integrated. This also applies in the use of strategies, Oxford (1994) findings that females are more skilful than males in using strategies to approach second language learning.

In addition to what has been mentioned before, the significant relation between content familiarity and gender difference might be further supported by what has been pointed out by Wei (2009) that males and females are different in the way of approaching the written material and highlighted that females are 'more global' than males. Anderson *et al.* (1991) found that females make use of the different well-known reading approaches bottom-up, top-down and interactive approaches when dealing with a text, while males are considered as 'analytic' and tend to focus on words using the bottom-up approach. Based on schema theory and text familiarity, these findings imply that females make use of their background knowledge and their prior experience since they make use of the top-down as well as the interactive approaches to reading.

Proficiency level and gender difference. As shown in Tables 1.4 and 1.5, there was a significant interaction between gender difference and English Language proficiency level. The results of the current study showed that English language proficiency level and gender differences as independent variables have a considerable influence on the overall performance of the participants. That was clear in Tables 1.8 and 1.9 which highlighted two important findings. First, high-proficient participants in both genders outperformed the low-proficient ones which mean that English language proficiency level has a positive influence on reading comprehension for both genders.

Second, the effect of proficiency level seems to be similar in the two cases of males and females and that can be noticed in the difference between the low and the high proficiency groups which seems to be the same. Therefore, it can be said that English language proficiency level (PE) had the same influence on male and female participants. This implies that each variable; English language proficiency level and gender difference affect reading comprehension through content whereas, there is no significant relation between them.

## 5.0 CONCLUSION

The current study aimed at investigating the influence of gender difference, English language proficiency and content familiarity on reading comprehension. It also aims at examining the interrelation between the three independent variables and their influence on reading comprehension. While there is much research addressing the influence of these variables separately or by combining two of them, this study examines that influence of these three variables together. Therefore, this study takes a step forward by addressing these variables together which resulted in providing a full picture of the influence of these three variables on reading comprehension. To conclude, in spite of some limitations in the study, the statistical analysis of the three different variables affecting reading

comprehension yield interesting results. The research has definitely provided informed input to the field of reading comprehension and has also given a better insight into the different variables that can affect reading comprehension.

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**APPENDICES**

**Table 10** Final classification of the participants of the study

Gender	Classification	Number	Percentage
MH	(FC)	37	29.13%
	(UC)		
ML	(FC)	40	31.49%
	(UC)		
FH	(FC)	24	18.89%
	(UC)		
FL	(FC)	26	20.49%
	(UC)		

MH: high proficiency male participants. ML: low proficiency female participants. FH: high proficiency female participants. FL: low proficiency female participants FC: content-familiar text. UC: content-unfamiliar text.

**Table 11** The correlation between each independent variable and the dependent one

**Correlations**

		PE	G	FC	UC	RC
PE	Pearson Correlation	1	-.001	.278**	.235**	.026
	Sig. (2-tailed)		.995	.002	.008	.770
	N	127	127	127	127	127
G	Pearson Correlation	-.001	1	-.198*	-.181*	-.094
	Sig. (2-tailed)	.995		.026	.042	.293
	N	127	127	127	127	127
FC	Pearson Correlation	.278**	-.198*	1	.618**	<b>.270</b>
	Sig. (2-tailed)	.002	.026		.000	.002
	N	127	127	127	127	127
UC	Pearson Correlation	.235**	-.181*	.618**	1	<b>-.322</b>

## Correlations

	PE	G	FC	UC	RC
Sig. (2-tailed)	.008	.042	.000		.000
N	127	127	127	127	127
RC Pearson Correlation	.026	-.094	.270**	-.322**	1
Sig. (2-tailed)	.770	.293	.002	.000	
N	127	127	127	127	127

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

PE: English language proficiency level, G: gender difference, FC: content familiarity, UC: content unfamiliarity, RC: reading comprehension.

**Table 12** A summary of the six Anova tests

Model	Sum of Squares	df	Mean Square	F	Sig.
C x RC	7.865	4	1.966	26.698	.000 <sup>a</sup>
PE x RC	.012	1	.012	.086	.770 <sup>a</sup>
Gender x RC	.149	1	.149	1.116	.293 <sup>a</sup>
G x C x RC	7.864	3	2.621	35.883	.000 <sup>a</sup>
PE x C x RC	7.732	3	2.577	34.766	.000 <sup>a</sup>
G x PE x C x RC	7.865	4	1.966	26.698	.000 <sup>a</sup>

C: content familiarity. G: gender difference. RC: reading comprehension. PE: English language proficiency level.

**Table 13** The performance of high- level students in the reading comprehension texts

PE	N	Mean	t-test	Sig
<b>High</b> FC	61	6.7623	3.239	0.02
UC		5.5164	2.699	0.08

FC: content familiarity. UC: content unfamiliarity. PE: proficiency level.

**Table 14** The performance of the low-level students in the reading comprehension texts

PE	N	Mean	t-test	Sig
low	FC	5.7485	3.239	0.02
	UC	4.7576	2.699	0.08

FC: content familiarity. UC: content unfamiliarity. PE: proficiency level.

**Table 15** The performance of both genders in the content-familiar text

Gender	N	Mean	T test	Sig
(FC) Male	50	5.7880	-2.259	0.026
Female	77	6.5260		

FC: content familiarity

**Table 16** The performance of both genders in the content-unfamiliar text

Gender	N	Mean	T test	Sig
(UC) Male	50	4.7600	-2.053	0.042
Female	77	5.3571		

UC: content unfamiliarity

**Table 17** The interaction between the independent variable

Proficiency level	N	Mean	Std. Deviation	Std. Error Mean
(FC).Female	H	7.0541	1.91044	.31407
	L	6.0375	1.83411	.29000
(UC).Female	H	5.7838	1.33615	.21966
	L	4.9625	1.95260	.30873

FC: content familiarity. UC: content unfamiliarity H: high-proficiency students  
L: low-proficiency students

**Table 18** The interaction between the independent variables

**Group Statistics**

Proficiency level		N	Mean	Std. Deviation	Std. Error Mean
(FC). Male	H	24	6.3125	1.73087	.35331
	L	26	5.3038	1.26822	.24872
(UC).Male	H	24	5.1042	1.42172	.29021
	L	26	4.4423	1.30635	.25620

FC: content familiarity.

UC: content unfamiliarity.

H: high-proficiency students

L: low-proficiency students.