

Gender Differences in Reading Comprehension Performance in Relation to Content Familiarity of Gender-Neutral Texts

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ABSTRACT

This study investigated 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 participated in this study, performing two reading comprehension tests on two different types of gender-neutral text (familiar and unfamiliar). One measure was used to assess comprehension that is multiple choice questions. Findings reveal that content familiarity has a facilitating effect on reading comprehension. Male students significantly outperformed their female counterparts in both tests. Educators and policy makers need to consider these differences in order to avoid the possible creation of gender gap in the educational outcomes in a context of single-sex education.

Introduction

Reading ability has always been viewed as critical to academic success (Bernhardt, 1991; Carrell, 1991; Grabe and Stoller, 2002; Levine *et al.*, 2000; Urquhart and Weir, 1998). Research on reading has attempted to look for components that affect reading performance as well as reading behaviours that distinguish proficient from less-proficient readers. Gender, prior knowledge, interest, and language ability have been seen as amongst the major factors that influence reading comprehension performance (Brantmeier, 2001, 2003; Bügel and Buunk, 1996; Carrell, 1987; Grabe and Stoller, 2002; Hyde and Linn, 1988; Koda, 2005; Rosén, 2001; Pae, 2004; Urquhart and Weir, 1998; Yongqi, 2002).

Research that examines prior knowledge or familiarity of content and gender as key variables in comprehension reached different conclusions. Some studies found that prior knowledge effects on reading comprehension are weak (Hammadou, 1991; Peretz and Shoham, 1990). Gender differences studies reached different conclusions, some favouring males and others favouring females (Brantmeier, 2001, 2003; Bügel and Buunk, 1996; Hyde and Linn, 1988; Myers, 2002; Rosén, 2001; Pae, 2004; Yongqi, 2002). Most of these studies used gender-oriented reading texts and the findings suggest that there is a need for more research on L2/FL reading comprehension using gender-neutral text.

By examining gender differences in reading comprehension in relation to the familiarity of gender-neutral texts, this study aims to provide more insight into the relationship between these different factors, which will add to the knowledge of L2/FL reading research and will help better understand the role of these factors and how they affect one another. This study may provide valuable information for policy makers and curriculum designers in the Ministry of Education and the departments of language learning in higher education.

Review of Literature

Schema Theory

A possible theoretical explanation for the influence of the content of texts on sex differences in comprehension performance can be found in Schema Theory. According to schema theory, our system contains "an enormous number of schemata [the plural form of schema]" (Rumelhart and Ortony, 1977: 128). Each schema contains many components, parts, or "slots", which are hierarchically linked, representing the relationships among the components relative to the schema in question (Anderson and Pearson, 1984; 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.

Enquiries into the schema-comprehension relationship have been conducted initially and primarily in the realm of English as a first language. In general, studies in first language reading have pointed out the critical role of knowledge on comprehension (Koda, 2005; Recht and Leslie, 1988; Johnston, 1984).

Motivated by the first language studies, second language reading researchers have also attempted to examine the effect of knowledge structures on L2/FL readers' comprehension. Most of these studies have confirmed the findings from the L1 research that cultural origin of a text had a positive effect on readers' comprehension performance measured by recall (Malik, 1990) and by objective questions (Droop and Verhoeven, 1998; Johnson, 1981), that exposure to the target culture helped readers in the free recall and sentence recognition tasks (Johnson, 1982), and that helping readers build background knowledge through pre-reading activities helped improve their reading scores measured by objective questions (Floyd and Carrell, 1987; Hudson, 1988).

Results from these studies have convinced L2/FL reading experts as well as instructors that one source of L2/FL reading problems is the lack of an appropriate schema for the topic L2/FL readers are reading about (Bernhardt, 1984; Carrell, 1991; Hudson, 1988; Levin and Haus, 1985; Peretz and Shoham, 1990; Tan, 1990). Given the appropriate schema, readers may be able to overcome their insufficiently developed linguistic knowledge. Nevertheless, there are indications that a threshold in L2/FL knowledge must be reached before transfer of general abilities such as the use of prior knowledge can operate (Hammadou, 1991; Martino and Hoffman, 2002; Ridgway, 1997). It is assumed, however, that the subjects of this study have passed the critical threshold of FL ability for the texts used, given the amount of time spent in learning English as a FL and their current university level.

Gender and Familiarity of Content

There have been studies that investigated gender differences in second language reading comprehension (e.g. Brantmeier, 2001, 2003; Bügel and Buunk, 1996; Doolittle and Welch, 1989; Hyde and Linn, 1988; Mau and Cheng, 2000; O'Reilly and McNamara, 2007; Rosén, 2001; Pae, 2004; Yongqi, 2002). Hyde and Linn (1988) argued that the score gap between males and females on the verbal section of the Scholastic Aptitude Test (SAT) was largely due to the content of the reading materials in the test. According to them, the reading passages on verbal section of the SAT have covered more technical topics (e.g., physics or chemistry), thus disadvantaging females in the performance of the test. Doolittle and Welch (1989) also found notable gender

differences for items associated with specific passages, reporting that females scored higher than males with humanities-oriented reading passages, but lower than male with science-oriented passages. Similarly, in a study on the relationships between readers' gender, enjoyment, interest and L2 reading performance, Brantmeier (2003) indicated that reading performance, as measured by recall comprehension, was significantly influenced by passage content and readers' gender, whereas enjoyment and interest mattered little. Moreover, 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.

Bügel and Buunk (1996) examined the impact of passage topic on gender differences in FL reading comprehension using 2,980 high school students in the Netherlands. They selected a total of 11 different English reading passages including five texts with a 'male' topic and six texts with a 'female' topic. 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. This finding contrasts with previous research which suggests that females are better foreign language learners than males (Bacon and Finnemann, 1992; Huebner, 1995; Mau and Cheng, 2000). Bügel and Buunk (1996) concluded that differences between the sexes in prior knowledge contribute to gender differences in foreign language reading comprehension.

However, these studies did not control for ability of the participants, and they used gender-oriented passages. They also have contrasting findings. All these factors suggest a need for further investigation of this issue with control in language ability, and the use of gender-neutral texts. Hence, this study aims at investigating the effects of gender and content familiarity on students' reading comprehension performance of gender-neutral texts.

Research Questions

- 1 - What is the relationship between gender and familiarity of content in foreign language reading comprehension performance?
- 2 - Are there any gender differences in learners' foreign language reading comprehension?
- 3 - Does content familiarity affect comprehension performance of the two sexes?

The Study

Context and Participants

In Saudi Arabia, all education is segregated. In General Education, boys and girls follow slightly different school curriculum in terms of subjects and syllabuses. The Ministry of Education is now carrying out a curriculum reform and is trying to unify girls and boys syllabuses and text-books. The process started from the lower levels and on subjects such as Math and English. However, at the tertiary level, except girls' colleges, although male and female students are separated, they follow the same curricula and syllabuses in all departments.

The participants of this study were 66 male and 66 female undergraduate English language students at the department of European languages at the college of languages and translation at King Saud University in Riyadh. The students study in this department to achieve a Bachelor degree in English language translation.

This study follows Carrell (1991) and Brisbois (1995) in dividing their readers into levels of general L2 proficiency according to their instruction level. The subjects of this study were studying at the second year university level. Both male and female students have already passed the first year English language courses successfully, and are considered at the same instruction level.

Research Design

This study aims at examining gender differences in reading comprehension performance in relation to content familiarity of gender-neutral texts. For this purpose, a 2 x 2 between subjects design was set up, with

2 levels of gender (males and females) and 2 levels of content familiarity (familiar and unfamiliar). The dependent variable was the comprehension scores from the multiple-choice questions, which are perhaps the most commonly used format in standardized reading comprehension tests (Alderson, 2000; Koda, 2005).

Material

Two expository passages were selected from McCall-Grabbs Standard Test Lessons in Reading, Book D and Book F (1979). These two passages were selected because they covered topics that most likely are gender-neutral, and each has a descriptive top-level structure with a causation structure embedded in it to build up its argument. One passage, The Jet Stream, contains 191 words and explains what the jet stream is and how it affects the weather and pilots flying in the United States (Appendix A). The other passage, The Titanic, contains 182 words and describes the tragedy of the Titanic - what the Titanic was like, what happened to it, and what measures were taken after the disaster (Appendix B). A reliability analysis was computed for each text. The reliability results were (Cronbach's alpha) 0.7462 for the Titanic passage and 0.6605 for the Jet Stream passage. It was felt that the reliability estimates were acceptable because the tests contained 10 items only. Content and face validity of the material were established through piloting and expert ratings (four lecturers with a minimum of five years experience in teaching EFL in Saudi Arabia).

Familiarity of Content

Because the film "Titanic" was a great success all over the world, it was assumed that the movie was likely to have been seen by the participants of this study, who therefore should have been familiar with the story of the Titanic. On the other hand, the term "jet stream" mainly appears on weather reports in the United States and Canada. Therefore, it was assumed that Saudi students would have little or indeed no idea at all about it.

In order to determine whether or not the participants did in fact know more about the Titanic and less about the Jet Stream, two sets of

questions written in English were attached to the reading test as pre- and post-test questionnaires. The pre-test questions required the participants to check whether or not they had heard the terms 'Titanic' or 'Jet Stream', whether or not they had ever heard or read the story or a report about either one of these topics, and whether or not they had ever watched films related to these topics. As a further measure, the participants were asked at the end of the test to evaluate their knowledge of the content on a five-point scale from 'completely new' to 'completely old'. Tables 1 and 2 summarise the results of this content familiarity survey.

Table 1: Summary of the Results of Content Familiarity Survey for the Titanic Passage

Questionnaire Items	Gender	Response		
		yes	no	not sure
Pretest				
1 - Have you heard the name Titanic?	Male	100.0%	0.0%	0.0%
	Female	100.0%	0.0%	0.0%
2 - Have you heard the story of Titanic?	Male	84.8%	9.1%	6.1%
	Female	94.1%	0.0%	5.9%
3 - Have you seen the movie Titanic?	Male	90.9%	3.0%	6.1%
	Female	85.3%	14.7%	0.0%
4 - Have you read any report about the Titanic tragedy?	Male	15.2%	48.5%	36.4%
	Female	47.1%	35.3%	17.6%
Post Test	Male	Female		
Complete new knowledge	0.0%	2.9%		
Mostly new knowledge	12.1%	17.6%		
Have new and have old	48.5%	55.9%		
Mostly old knowledge	24.2%	11.8%		
Complete old knowledge	15.2%	11.8%		

Table 2: Summary of the Results of Content Familiarity Survey for the Jet Stream Passage

Questionnaire Items	Gender	Response		
		yes	no	not sure
Pretest				
1 - Have you heard the term Jet Stream?	Male	0.0%	81.8%	18.2%
	Female	3.1%	84.4%	12.5%
2 - Have you heard anything regarding Jet Stream?	Male	0.0%	90.9%	9.1%
	Female	3.1%	84.4%	12.5%
4 - Have you read any report about the Jet Stream?	Male	0.0%	93.9%	6.1%
	Female	0.0%	96.9%	3.1%
4 - Do you know in what way the Jet Stream relates to human life?	Male	0.0%	93.9%	6.1%
	Female	0.0%	71.9%	28.1%
Post Test	Male	Female		
Complete new knowledge	57.6%	46.9%		
Mostly new knowledge	27.3%	43.8%		
Have new and have old	9.1%	6.3%		
Mostly old knowledge	6.1%	0.0%		
Complete old knowledge	0.0%	3.1%		

The results showed that both male and female students reported that they had heard the name Titanic. The post-test questionnaire also indicated that both male and female students felt that they were quite familiar with the story (see Table1). For the Jet Stream passage, 84.4% of female students and 81.8% of male students reported that they had never heard the term Jet Stream in response to the pre-test questionnaire. Only 3.1% of female students reported that they heard about the term Jet Stream. The post-test questionnaire revealed that the majority of the participants in both sexes thought that the content of the Jet Stream passage was completely new or mostly new to them (see Table

2). The overall results indicated that the content of the Titanic passage seemed to be familiar to the students, whereas that of the Jet Stream passage appeared to be unfamiliar to them, as the results showed.

Data Collection and Analysis Procedures

The data collection was conducted in the university setting on normal university days during the reading module lecture times for all students. There were two classes for each gender. Each class was divided randomly into two groups. One group performed the comprehension test on familiar passage and the other on the unfamiliar passage. They were allowed 25 minutes to finish the test with 5 minutes for the pre-test questionnaire and 5 minutes for the post-test questionnaire. Both male and female departments followed this procedure. All the students were told to read the reading instructions carefully and to ask for clarification if needed.

The data collected consisted of the comprehension scores obtained from the 10 multiple-choice questions designed for each of the two passages. The data analysis was conducted in accordance with the research questions, all of which were concerned with comprehension performance as measured by the scores from the multiple-choice questions, which were considered as the dependent variable. A two-way analysis of variance (ANOVA) was used to test the effects of the independent variables (Familiarity of content and Gender) and the interaction between them. Then, t-tests were conducted for each independent variable to show the significant differences in terms of the comprehension performance. The study results are reported below.

The Results

This study investigated two different factors, Gender, and Content Familiarity, in order to explore their relationship to readers' comprehension performance. The reading scores of male and female participants reading two different types of gender-neutral passages were compared. The results obtained are presented according to the research questions, beginning with the main research question exploring the relative effects of gender on readers' comprehension performance in relation to content familiarity. Then, further analysis explores the other questions targeting each independent variable.

In order to answer the main research question (What is the relationship between gender and familiarity of content in foreign language reading comprehension performance?), a two-way analysis of variance (ANOVA) test was conducted. The test explores the effects of the two independent variables on the dependent variable and the interaction effects on the dependent variable. Table 3 shows the results of the two-way ANOVA test for the effects of the independent variables.

Table 3: Two-Way ANOVA results for the effects of the IVs.

			Df	Mean Sq.	F	Sig.
Familiarity	F	7.189	1	9.393	3.846	.052
	U	6.655				
Gender	M	7.455	1	37.401	15.315	.000
	F	6.390				
Gender x Familiarity			1	2.132	.873	.352
Error			128	2.442		

The results revealed significant differences between the familiar and unfamiliar texts in the comprehension performance scores. The mean score for the familiar passage (the Titanic passage) is higher than the mean score for the unfamiliar passage (the Jet Stream passage). The results also showed that there were very significant differences between the male and female students' overall comprehension results at the alpha level (.05) in favour of the male students, who outperformed their female counterparts in both tests. The interaction effects result shows that there are no significant interactions between the two independent variables (Content Familiarity and Gender) and there are no significant effects of the interaction on the reading comprehension scores. These results suggest that there is no relationship between gender and content familiarity in foreign language reading comprehension performance.

In regard to the research question (Are there any gender differences in learners' foreign language reading comprehension?), Table 3 shows that there are significant differences between the male and female students' overall comprehension performance of both tests. The male students performed better than their female counterparts as the mean

score shows (male = 7.455, female = 6.390). This result suggests that there are gender differences in learners' foreign language reading comprehension of gender-neutral texts. The investigation below of the effects of content familiarity will provide greater insight into these differences.

To answer the research question (Does content familiarity affect the comprehension performance of the two genders?), t-tests for independent samples of gender were conducted for each type of text. Table 4 below shows the differences between male and female students with regard to each type of text.

Table 4: t-tests results for independent samples of Gender for each type of text

Type of Text	Gender	N	Mean	Std. Deviation	T-value	Sig. (2-tailed)
Familiar text	Male	33	7.8485	1.58353	3.545	.001
	Female	34	6.5294	1.46133		
Unfamiliar text	Male	33	7.0606	1.61902	2.038	.046
	Female	32	6.2500	1.58623		

Table 4 shows that there are significant differences between the comprehension performances on the familiar text (the Titanic passage) of the male and female students ($p = .001$). The picture is quite similar in the case of the unfamiliar text (the Jet Stream passage), as there are significant differences between the male and female students ($p = .046$). The male students performed better in this comprehension test, as is shown by the mean scores they achieved. In regard to the overall performance of the students on the familiar and unfamiliar texts, the two-way ANOVA conducted for independent samples of type of text showed that there were significant differences between the students' comprehension performances on both the familiar and the unfamiliar text (see Table 3) in favour of their performance on the familiar passage. The results suggest that content familiarity may affect the comprehension performance of both male and female students.

To summarise, the results showed that there were significant differences between the male and female students' comprehension performances on both texts. They also showed that content familiarity facilitated the comprehension performance of both the male and female student readers. Next, the results will be discussed in relation to what has been reported in the literature.

Discussion

This study seeks to explore the relative effects of gender and content familiarity on text comprehension. In general, gender and content familiarity were found to have significantly affected the students' overall comprehension performance across passages (see Table 3). The male students seem to have performed significantly better than the female students in their comprehension performance of gender-neutral texts (see Table 4). They tended to score higher on both the familiar and the unfamiliar texts. These results appear to support Bügel and Buunk's (1996) finding that male students performed significantly better than female students in comprehending gender-neutral texts. In providing such support, however, the results appear to be in contrast to a view that has become almost commonsensical: the assumption that female students are in general more successful in language learning than their male counterparts (Sunderland, 2000). The study of foreign languages is generally viewed as a "female domain"; females choose to study foreign languages more often than do male students, and they are more motivated (Bügel and Buunk, 1996).

One possible explanation for the superiority of the male students in this study is that males and females may not have been equally matched in language ability. Although they were at the same instruction level, the male students seem to have been more proficient readers than their female counterparts. Language ability is an important factor that affects comprehension (Martino and Hoffman, 2002; Norris and Hoffman, 2002; Ridgway, 1997). Reading is a complex process and needs a sufficient amount of L2 knowledge to make effective use of skills and strategies in order to understand the texts (Grabe and Stoller, 2002; Ridgway, 1997; Urquhart and Weir, 1998). The more proficient reader uses his or her language knowledge (e.g. semantic and syntactic) to predict words from sentence cues or to predict word meanings (Norris

and Hoffman, 2002; Martino and Hoffman, 2002). It is suggested here that the male students had 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 possibility raises the question of the quality of instruction in the girls' department. It is suggested here that female departments need to reassess their classroom teaching and practices and to focus on reading activities to promote a higher level of reading skills. Indeed, cooperation between male and female departments is needed to promote equal development in academic skills and language ability.

Another explanation for the gender differences revealed by the study may be related to the type of text used, which was informative in character. In the literature, it has been suggested that male students tend to read much more informative literature than female students (Brantmeier, 2003; Bügel and Buunk, 1996; O'Reilly and McNamara, 2007; Pae, 2004; Yongqi, 2002). Although the female students seemed to be more familiar with both texts than the male students, their comprehension scores did not reflect this. The implication can be drawn here that students in general, and female students in particular, should be encouraged to read more informative texts, as these types of texts are very important for academic and professional activities.

Content familiarity was also found to have significantly affected the male and female students' overall comprehension performance: both genders tended to score higher on the familiar passage. These results appear to support the schema theory of reading, and research on L2 reading (Carrell, 1991; Hudson, 1988; Levin and Haus, 1985). 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, thus making it possible to assimilate text information without the need to consider all the words and phrases in the text.

The two genders were found to differ significantly in their performance of each type of text. The male students significantly outperformed their female counterparts on both the familiar and the unfamiliar texts. Although familiarity of content had facilitating effects on both genders' comprehension performance, it seems that these effects are not associated

with gender differences. This can be seen in the interaction effect results (see Table 3): there was no significant relationship between gender and content familiarity. These results do not diminish the effects of content familiarity on both genders. Both the male and the female students performed better on the familiar passage than on the unfamiliar passage. The pedagogical implication can be drawn here that language educators need to take advantage of the significant effects of content familiarity on learners' comprehension performance to provide students, especially beginners and those at the elementary level, with familiar content to enable them to deploy the appropriate skills and strategies to understand the texts. Reading is a complex psychological activity that involves various mechanisms and draws upon limited resources. It is suggested here that if topics and texts are familiar to the students, their memory and cognitive resources can be freed to the extent that they can then concentrate on other language processing aspects such as new vocabulary and sentence patterns.

However, the findings of this study must be interpreted in the light of a number of limitations. One limitation pertains to the study use of a single measurement of comprehension performance; that is, the measurement provided by multiple-choice questions. It would be better if more than one predictor of comprehension were used in order to give more insight into gender differences and to strengthen the results by gathering evidence from more than one setting. For example, immediate written recall is one way to measure the comprehension performance of students, and this method has been used in L2 research (see Alderson, 2000; Bernhardt, 1991; Brantmeier, 2003). However, in this study, it was difficult to employ this measurement because of administrative and contextual constraints. A second limitation pertains to the generalisability of the findings in this study to Saudi students in general education such as those in secondary and intermediate schools. The results should therefore be regarded with caution, especially if one agrees that students at lower levels are more likely to have more limited English language ability.

Conclusion

This study explored gender differences in reading comprehension performance in relation to the content familiarity of gender-neutral texts. Content familiarity and gender seem to have significantly affected

FL readers' comprehension performance on gender-neutral texts. The male students performed better than their female counterparts in their comprehension of both familiar and unfamiliar gender-neutral texts. These results suggest that language educators should take into consideration the differences between the two genders and promote equal learning opportunities in order to adjust the apparent differences between female and male students, with the aim of avoiding the possible creation of a gender gap in educational outcomes in a context of single-sex education. The limitations of this research suggest the need for future research to include other methods of comprehension measurement, such as written recall and cloze test. Future research may also include other factors, such as language ability, that can be examined simultaneously with content familiarity and gender. Finally, future research may wish to replicate the present study in terms of theoretical and methodological approaches. The aim of replications should not be primarily to find out whether the findings of the current study would be the same or different in other contexts, but to understand where and how gender differences originate.

الفروق بين الجنسين في أداء استيعاب المقروء باختلاف إلفة المحتوى لنصوص حيادية الجنس

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الملخص

بحثت الدراسة الفروق بين الذكور والإناث من طلبة المرحلة الجامعية السعوديين دارسي اللغة الإنجليزية كلغة أجنبية وذلك في أدائهم الاستيعابي لنصوص حيادية الجنس. عينة الدراسة تتكون من مائة واثنين وثلاثين طالبا قاموا بإجراء اختبارين مختلفين باختلاف إلفة محتوى النص لقياس مدى الاستيعاب. كشفت النتائج أن إلفة المحتوى لها أثر مساعد في تسهيل استيعاب المقروء. وكذلك كشفت الدراسة أن هناك فروقا دالة لصالح الذكور في كلا الاختبارين. هذه النتائج تشير إلى أنه يجب على التربويين وصانعي السياسات التعليمية الأخذ بالاعتبار هذه الفروق وذلك لمنع خلق فجوة نوعية محتملة في مخرجات التعليم في بيئة تعليمية أحادية الجنس.

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Appendix A

The Jet Stream

Just as there are powerful currents like the Gulf Stream in the oceans, there are raging streams of air high in the sky. These are called jet streams. One jet stream blows always from west to east over the United States and is about 100 miles wide. This great current of wind usually flows at a speed of more than a hundred miles per hour. Ordinarily it flows five or six miles above the earth, but sometimes it dips as low as two miles.

One day in May, the jet stream collided over the Texas Panhandle with warm, moist air from the Gulf of Mexico, thus producing fifty tornadoes in Kansas and Oklahoma. Frequently the jet stream also causes hailstorms and cloudbursts. When it turns to the southeast, it pushes Atlantic Ocean hurricanes away from the land. When it does not, hurricanes often rip into the mainland causing great destruction.

Pilots flying eastward have learned how to locate and stay in this jet stream, thus gaining speed with less fuel used. Those pilots who fly into the jet stream when travelling westward sometimes make little headway even while flying at top speed.

After reading the above passage, please answer the following questions. Please draw a circle around the correct answer:

- 1 - **A jet stream is** A. gas left by a jet airplane. B. a new type of fish. C. an air current. D. a water current.
- 2 - **A jet stream blows from** A. east to west B. north to south C. west to east D. south to north.
- 3 - **The jet stream collided with warm air over Texas Panhandle in** A. August B. July C. May D. April.
- 4 - **A southeast jet stream** A. increases hurricane size B. causes hurricanes C. pushes hurricanes inland D. pushes hurricanes out to sea.
- 5 - **A pilot flying eastward in the jet stream** A. uses more fuel and flies more slowly B. uses less fuel and goes faster C. uses more fuel and goes faster D. uses less fuel and goes more slowly.
- 6 - **A pilot flying westward should try to** A. stay in the jet stream B. avoid the jet stream C. fly at top speed D. fly slowly.

- 7 - **The width of a jet stream is usually about** A. 100 miles B. 200 miles
C. 300 miles D. 400 miles.
- 8 - **The jet stream is likely to be part of the weather report in** A. China
B. Russia C. Europe D. the U.S.
- 9 - **The jet stream is compared to** A. currents in the ocean B. the wind
C. the Milky Way D. a flying airplane.
- 10 - **The writer of this article use the word “raging” to describe the jet stream because** A. it makes people angry B. it moves very fast C. it causes hurricanes D. it always results in hailstorm and cloudburst.

Appendix B

The Titanic

On the night of April 14th, 1912, one of the worst calamities at sea that the world has ever known occurred. The British luxury ship, S. S. Titanic, was on its maiden voyage to the United States. The Titanic was considered the fastest ship afloat and all but unsinkable. Over 2,200 passengers were aboard, many of them the upper class of Europe and America.

In spite of warning messages, the huge ship collided, going at full speed, with an iceberg south of Newfoundland. There were not enough lifeboats to seat everyone. Because of the panic, many lifeboats were launched with only a few people aboard. Over 1500 lives were lost. The “safest ship in the world” sank on its very first voyage. To add to the irony of the catastrophe, there was another ship only ten miles away that could have saved hundreds of people. They never heard the SOS because their wireless operator had gone to bed.

As a result of this disaster, patrols were established to locate icebergs and strict rules concerning safety precautions on ships are enforced.

After reading the above passage, please answer the following questions Please draw a circle around the correct answer:

- 1 - **The Titanic sank** A. off the coast of the U.S. B. 2,200 miles from port C. in wintertime D. close to Newfoundland.
- 2 - **The Titanic was** A. a British ship B. sailing to Europe C. from America D. in Newfoundland.
- 3 - **Many lifeboats were launched** A. on the iceberg B. by the social elite C. without anyone aboard D. without being full.
- 4 - **How many people were killed in the incident?** A. 2,200 B. 1,500 C. over 2,200 D. over 1,500.
- 5 - **Because of the Titanic** A. people no longer panic B. there are new ship safety regulations C. Newfoundland is patrolled D. no ships ever sink.

- 6 - **The other ship did not hear the SOS because** A. it was too far away
B. none was sent C. everyone was asleep D. the wireless operator was in bed.
- 7 - **Another word for calamity is** A. construction B. collision C. catastrophe D. consideration.
- 8 - **A maiden voyage refers to the voyage** A. that is its first voyage B. that has only maidens aboard C. that is fun and full of energy D. that carries passengers from Europe to other places.
- 9 - **The sinking of the Titanic was partly caused by** A. not having enough lifeboats B. no warning message being sent C. too much panic D. its fast speed.
- 10 - **The writer of this article considered the calamity of the Titanic to be** A. ironical B. expected C. possible D. a joke