

A Research on the Relationship Between Reading Anxiety and Reading Strategy in English Reading: A Quantitative Study in Chengdu University

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According to a large number of studies since the 1970s, learners' emotional state is one of the important factors affecting learning effect of foreign language learning. In addition, reading is an important input and practice method in English learning, especially when it comes to language learning. 102 students majoring in English at the Faculty of Foreign Languages of Chengdu University were investigated by using two scales, FLRAS and ERSS, based on the Individual Learner Differences and Affective filter hypothesis. This study uses the social science statistical tool SPSSPRO to process and analyze all the data, aiming to explore the degree of English reading anxiety and the relationship between reading anxiety and reading strategies in English reading.

Keywords: English reading anxiety, English reading strategies, correlation

Introduction

As an international language, English occupies a prominent position in China's education circle, and has also attracted the attention of educators and students to a great extent (Shi, 2012). However, psychology, as an important factor affecting foreign language learning, is easily overlooked by people.

The specific purpose of this paper can be summarized as the answers to the following questions:

- (1) What are the main causes of English-major undergraduates' English reading anxiety?
- (2) What type of English reading strategies do English-major undergraduates tend to use?
- (3) What is relationship between English reading anxiety and English reading strategy?

Research Methodology: Quantitative Study

A quantitative study was conducted to investigate the relationship between reading anxiety and strategy use of target population. Nearly 102 questionnaires were sent out to study English majors in Chengdu University and generate a qualified questionnaire. The major can be divided into English Translation, English Education and Business English.

Target Population

A total of 102 English-major students took part in the study. Finally, 100 questionnaires were qualified

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(see Table 1). All target population are undergraduate students majoring in English from Faculty of Foreign Languages of Chengdu University in Chengdu, Sichuan Province.

Table 1

Frequencies and Distributions of Subjects on Demographic Variables

Target population	Variables	Frequency	Percentage (%)	Cumulative percentages (%)
Gender	Female	78	78	78
	Male	22	22	100
	Senior	50	50	50
Grades	Junior	16	16	66
	Sophomore	18	18	84
	Freshman	16	16	100
	English translation	21	21	21
Majors	English education	47	47	68
	Business English	32	32	100
Total	100	100	100	100

Instruments

This study is divided into three parts by questionnaire survey. Questionnaire one is the self-report questionnaire of target population's demographic data. Questionnaire two is a modified version of the Foreign Language Reading Anxiety Scale (FLRAS) by Saito, Garza, and Horwitz (1999). And questionnaire three is the ERSS revision of Carrell & Eisterhold and Nuttall's Reading Strategy Classification.

Results and Discussion**Results and Analysis of Research Question 1: What Are the Main Causes of English Major Undergraduates' English Reading Anxiety?**

As shown in Table 2, the scores of students' foreign language reading anxiety ranged from 30 to 77. The average score of overall reading anxiety was 52.76, lower than that of Chinese non-English major students ($M = 61.20$, $S = 9.00$) (Wang, 2007) and American foreign language beginners ($M = 52.9$, $S = 9.4$) (Saito et al., 1999). However, in this study, the FLRAS was revised to include only 18 items. From this perspective, the average level of reading anxiety in this study is quite high, especially when compared to the study by Saito et al. In addition, the mean value of each item in this study is 2.93, which is higher than that of graduate students majoring in English ($M = 2.90$) (Shi, 2012). All of these indicated that compared with American foreign language learners and Chinese graduate students majoring in English, the subjects in this study had the highest reading anxiety.

Table 2

Descriptive Statistics for English Reading Anxiety Based on FLRAS (N = 100)

Measures	Possible range	Mean (overall)	SD	Items	Mean (item)
Overall	30-77	52.76	12.76 (1.21)	18	2.93

Table 3

Factor Labels, Eigenvalue, Percents of Variance and Cumulative Variance for Six-factor Principal Component Analysis with Varimax Rotation on FLRAS Item

Factors	Labels	Eigenvalue	Variance	Cumulative variance
1	Negative attitude towards passages	2.777	15.429%	15.429%
2	Ability of understanding	2.588	14.38%	29.809%
3	Lack of confidence	2.072	11.508%	41.318%
4	Fear of background knowledge and reading itself	2.049	11.382%	52.7%
5	Apprehension	1.871	10.393%	63.093%
6	Fear of English culture	1.814	10.081%	73.174%

The above table is the principal component analysis of variance rotation for 18 items, and the six factors with eigenvalues greater than 1 indicate the six anxiety factors extracted from the data (accounting for 73.174% of the total variance), as well as the cumulative variance, the percentage of eigenvalues and variance, as shown in Table 3.

Results and Analysis of Research Question 2: What Type of Foreign Language Reading Strategies Do English Major Undergraduates Tend to Use?

According to Oxford's standard of use frequency (cited in Wang, 2007) (see Table 4), the mean score of each item was classified into three frequency scales: low (1.0-2.4), medial (2.5-3.4) and high (3.5-5.0). The mean of overall strategy use in this paper was 3.54 (see Table 5), indicating a frequency of use in high level.

Table 4

Frequency Scales

Mean score	Frequency	Evaluation
4.5-5.0	High	Always or always used
3.5-4.4		Usually used
2.5-3.4	Medial	Sometimes used
1.5-2.4	Low	Generally not used
1.0-1.4		Never or almost never used

Table 5

Descriptive Statistics for English Reading Strategy Scale (ERSS) (N = 100)

Categories	Possible range	Mean (overall)	Item	Mean (item)	SD	Rank order of usage
Skimming	5-15	10.67	3	3.56	1.06	4
Scanning	10-25	18.24	5	3.65	1.12	3
Structure analysis	13-30	21.95	6	3.66	1.04	2
Inference	7-30	19.54	6	3.26	1.04	6
Prediction	6-20	13.85	4	3.46	1.09	5
Dealing with difficult words	7-20	14.84	4	3.71	1.09	1
Overall	73-136	99.09	28	3.54	1.11	

As is shown in Table 5, the strategy of "Dealing with difficult words" is the highest (3.71) on a five-point scale in the six groups, followed by "Structure analysis" (3.66), "Scanning" (3.65), "Skimming" (3.56), and "Prediction" (3.46). The average mean of "Inference" is the lowest with 3.26 on a five-point scale.

Results and Analysis of Research Question 3: What Is Relationship Between English Reading Anxiety and English Reading Strategy?

Relationship between English reading anxiety and English reading strategy. First, this study calculated the correlation coefficient between English reading anxiety and English reading strategies using the Pearson product-moment correlation method. It can be seen from Table 6 that there is a positive correlation between English reading anxiety and English reading strategies. However, in the detailed study, only one English reading strategy was significantly associated with English reading anxiety: “Dealing with difficult words” ($R = 0.291$, $P < 0.005$). In addition, two reading strategies were negatively correlated with anxiety. In general, there is a significantly positive correlation between English reading anxiety and English reading strategies ($R = 0.221$, $P < 0.05$).

Table 6

Pearson Correlations between Low English Reading Anxiety and English Reading

English reading strategies		English reading anxiety
Skimming	Pearson correlation	-0.013
	Sig. (2-tailed)	0.897
	N	100
Scanning	Pearson correlation	0.178
	Sig. (2-tailed)	0.077*
	N	100
Structure analysis	Pearson correlation	0.245
	Sig. (2-tailed)	0.014**
	N	100
Inference	Pearson correlation	-0.029
	Sig. (2-tailed)	0.774
	N	100
Prediction	Pearson correlation	0.177
	Sig. (2-tailed)	0.078*
	N	100
Dealing with difficult words	Pearson correlation	0.291
	Sig. (2-tailed)	0.003***
	N	100
Overall	Pearson correlation	0.221
	Sig. (2-tailed)	0.027**
	N	100

Variation in reading strategy use and use of the six ERSS categories by reading anxiety levels. In the second analysis, target population are first divided into high, medium and low reading anxiety groups based on their FLRAS scores (see Table 7). The mean level of overall reading anxiety was 2.93 and the SD was 1.215. Grouping was based on the following principles: people with scores one or more standard deviations above the overall mean were classified as high reading anxiety group; one or more standard deviations below the overall mean were classified as low reading anxiety group; the rest were moderate anxiety group.

Table 7

Descriptive Statistics for Subjects with Different States of English Reading Anxiety (N = 100)

	Number	Percentage	Mean (item)	SD
High anxiety group	14	14%	4.02	0.904
Moderate anxiety group	61	61%	3.24	1.105
Low anxiety group	25	25%	1.58	0.958
Total	100	100%	2.93	1.215

One-way ANOVA was conducted with reading anxiety level (high, medium and low) as independent variables and overall reading strategy use and six strategy categories use as dependent variables. As shown in Table 8, although there is no significant difference between the three reading anxiety levels in the use of specific reading strategies, there is a certain difference, which can be reflected in the average score.

Then, SPSSPRO was used to analyze the relationship between six reading strategies and three reading anxiety levels, and further study the relationship between reading anxiety and reading strategies (see Table 6, Table 7 and Table 8). There are negative correlations between high English reading anxiety and English reading strategies, such as “Skimming”, “Scanning” and “Dealing with difficult words”, and positive correlations between high English reading anxiety and residual English reading strategies. There is a positive correlation between moderate English reading anxiety and English reading strategies. In low English reading anxiety, “Scanning” reading strategies and “Inference” strategies were negatively correlated.

Table 8

Pearson Correlations Between English Reading Anxiety in Three Levels and English Reading Strategies

English reading strategies		Low English reading anxiety (N = 25)	Moderate English reading anxiety (N = 61)	High English reading anxiety (N = 14)
Skimming	Pearson correlation	0.112	0.028	-0.401
	Sig. (2-tailed)	0.594	0.108	0.115
Scanning	Pearson correlation	-0.325	0.126	-0.420
	Sig. (2-tailed)	0.113	0.331	0.135
Structure analysis	Pearson correlation	0.278	0.163	0.022
	Sig. (2-tailed)	0.179	0.211	0.942
Inference	Pearson correlation	-0.130	0.087	0.039
	Sig. (2-tailed)	0.537	0.505	0.894
Prediction	Pearson correlation	0.007	0.111	0.079
	Sig. (2-tailed)	0.975	0.396	0.788
Dealing with difficult words	Pearson correlation	0.029	0.245	-0.024
	Sig. (2-tailed)	0.889	0.057*	0.934

Discussion of Research About Three Questions

Factors influencing students’ English reading anxiety. The English reading anxiety score of this study ranges from 30 to 77, with an overall average of 52.76. It can be concluded that reading anxiety is very high in this study. In addition, the average score of each item of the paper is 2.93, which is much higher than that of non-English majors in vocational schools ($M = 2.65$) (Zhou, 2018). All these show that the English majors in this study experienced a high degree of English reading anxiety.

This study uses the principal component analysis of variance rotation to explore the potential structure of the potential factors leading to the target population’s English reading anxiety. Six factors with eigenvalues

greater than 1 were obtained by principal component analysis, accounting for 73.174% of the total variance. The factors affecting students' English reading are: "Negative attitude towards passages" (factor 1), "Ability of understanding" (factor 2), "Lack of confidence" (factor 3), "Fear of background knowledge and reading itself" (factor 4), "Apprehension" (factor 5) and "Fear of English culture" (factor 6).

Among the six factors, the first factor "Negative attitude towards passages" is the most influential factor, accounting for 15.429% of the variance. It is inevitable for readers to consider the type and theme of the article. The target population of this study are English majors undergraduates with high English proficiency. However, in this study, 61.11% of the target population felt anxious when they encountered a literary style they did not like. However, English reading involves a wide variety of topics and styles, which is a key factor affecting students' English reading ability. Silent words had no significant effect on target population' reading anxiety.

"Ability of understanding" is the second factor affecting the level of reading anxiety. Understanding a text involves many elements, such as grammar, length, and the reader's ability to remember what he or she just read. Some reading is just for information, just to get the central idea. Before reading, students' first impression of the article is the overall length of the article. 43.4% felt anxious if the article was too long. When they see a lot of English materials in front of them, they will feel helpless. This pressure may come from the uncertainty of unknown difficulties in reading articles.

The third factor "Lack of confidence" is an influential factor, accounting for 11.508% of the variance. In this study, only 53.4% of the subjects were dissatisfied with their English level, and 23.7% of the students enjoyed the reading process. 45.5% of the students are not confident in reading English.

"Fear of background knowledge and reading itself" was identified as the fourth factor affecting the reading anxiety level of the participants. The most difficult part of English learning was not English reading. Similarly, since English majors typically have more reading practice than non-English majors, English reading may not be as difficult for English majors as some non-English majors.

The fifth factor is the "Apprehension". 27.6% of the people in the study would rather learn to read than practice speaking. Because of the complexity of reading itself, sometimes you need to read between the lines. Compared to analyzing and understanding the main idea of a long article, practicing oral English is relatively easy and fun.

The sixth factor found in this study is the "Fear of English culture". Foreign language reading will definitely involve information about the culture, custom, and religion of the relevant language. In this study, 29.3% of the subjects thought that English culture and concepts were unfamiliar to them. The population in this study have at least four years of English learning experience. Therefore, English culture may not pose a major threat to their reading.

English reading strategies used by English-major undergraduates. The results of reading strategies in this study reveal that undergraduates of English major generally use six reading strategies ($M = 3.54$, $SD = 1.11$) when reading English articles, some of which are more frequently used than others. In terms of frequency of use, the order is: "Dealing with difficult words" ($M = 3.71$, $SD = 1.09$), "Structure analysis" ($M = 3.66$, $SD = 1.04$), "Scanning" ($M = 3.65$, $SD = 1.12$), "Skimming" ($M = 3.56$, $SD = 1.06$), "Prediction" ($M = 3.46$, $SD = 1.09$) and "Inference" ($M = 3.26$, $SD = 1.04$).

Most commonly used reading strategy in this study is "Dealing with difficult words" (such as inference from context, use of morpheme information, etc.). This result is acceptable because students also place great emphasis on vocabulary and phrases. Correspondingly, knowledge of vocabulary, phrases and grammar has

always been the focus of teaching in traditional Chinese English education. Therefore, for undergraduates majoring in English, lexicology must be taught in specialized courses.

The least used reading strategy in this study is the “Inference”. The results show that the application of comprehension in English reading is seriously inadequate. Therefore, the English majors with higher reading level in this study lack the overall grasp of the article.

Relationship between English reading anxiety and English reading strategy. First, reading anxiety is positively correlated with overall reading strategy use ($R = 0.221$), which is inconsistent with previous research results (Wang, 2007). However, in the detailed study, only one English reading strategy was significantly associated with English reading anxiety: “Dealing with difficult words” ($R = 0.291$, $P < 0.005$). In addition, two reading strategies were negatively correlated with anxiety, indicating that the higher the anxiety, the less likely the two strategies were to be used. In general, there is a significantly positive correlation between English reading anxiety and English reading strategies ($R = 0.221$, $P < 0.05$), indicating that the more complicated students use several English reading strategies, the higher their English reading anxiety.

Population were then be segmented into three groups (high, moderate and low) based on their revised FLRAS score. The results of the next study also showed that population with moderate and high reading anxiety had no apparent predisposition to a certain reading strategy, in further research. That is to say the reading strategies they use in English reading are very random and may have an impression of how anxious the reader is.

Conclusions

As for English reading anxiety, Chinese English majors do have a certain degree of English reading anxiety, and the degree of anxiety is relatively high. As for the use of English reading strategies, students majoring in English applied the six reading strategies more frequently, but the choice was more random.

As for the relationship between English reading anxiety and English reading strategies, English reading anxiety (based on the FLRAS revision) and English reading strategy choice (based on the ERSS revision) are generally positively correlated. The results showed that the more random or unskilled the students’ reading strategies were, the higher their anxiety level was. The results reported by SPSSPRO also showed, however, that only one English reading strategy was significantly associated with English reading anxiety in the detailed study: “Dealing with difficult words” ($R = 0.291$, $P < 0.005$). In addition, the two reading strategies were negatively correlated with anxiety, indicating that the higher the anxiety, the less likely the two reading strategies were to be used.

The results of this study show that reading anxiety can affect students’ choice of reading strategies, and the choice or improper use of reading strategies can affect the degree of anxiety to a certain extent. The target population of this study are English majors in Chengdu University, whose English level is relatively high. However, they still had high reading anxiety, not to mention non-English major college students. In this regard, English language learning, especially the cultivation of English reading skills, is a crucial task for Chinese English learners.

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