A Corpus-assisted Study on the Development of Chinese Students' Second Language Writing Ability

A Textual Rhetorical Perspective*

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Abstract—**In recent years, with the rapid development of corpus linguistics, and the wide application of corpus research methods, most of the domestic study focus on corpus-assisted writing teaching and learning. Some scholars has put more emphasis on the theoretical research but less study on the practice of corpus-assisted writing teaching combining textual rhetoric. In view of all this, a 16-week experimental study was conducted on second-year English majors in a university in Guiyang. The results show that corpus-assisted English writing combining textual rhetoric has greatly upgraded students' attitude on English writing, and has generated a significant effect upon the development of Chinese students' L2 writing ability as well as enabled them to improve their writing construction competence. This study provides important implications for the current teaching of second language writing in China.**

Keywords—Chinese students' second language writing ability; corpus; textual rhetoric

I. INTRODUCTION

With the prevalence of computers, increasing opportunities of Internet access, availability of large amounts of target language data, language teachers shows greater interest in the active use of corpora in classroom English teaching and learning, such as curriculum development, vocabulary and phrase selection, etc. Due to the great potentials of corpora in second language teaching and learning, a lot of researchers at home and abroad regard them as valuable resources and innovative teaching methods and tools. Boulton (2017) gave a narrative reviews on the chronological development as well as the multitude of topics, and methodologies of corpora in the language teaching. Yen, Huang & Chen (2019) provided a secondary statistical analysis from quantitative studies. Frazier & Koo (2019), Vyatkina & Boulton (2017) studied the relation between corpora and language teaching. Lin & Wang (2019) talked about the function and challenges of corpora in language teaching and learning of higher education. Dolgova & Mueller (2019) proposed a new ESP model, approaches and

theories for English learners based on corpus. Xu & Shu (2018) made experimental study of different features of oral English between Chinese English learners and American native speakers by means of a corpus approach.

As can be seen from the above research, most researches focus on the study of various aspects of corpus in English teaching and learning, most of the domestic and abroad studies focus on corpus-assisted writing teaching, but there are still gaps mainly reflected in these aspects: the depth of research and innovation has yet to be strengthened; more emphasis is put on the theoretical research, but less study on the practice of corpus-assisted writing teaching combining textual rhetoric. In view of all this, this paper tries to make quantitative study of corpus-basis English writing teaching in the development of Chinese students' L2 writing ability from the perspective of textual rhetoric.

II. THEORY FRAMEWORK

The whole research integrates the theoretical basis of Rhetorical Structure Theory (RST), Process Writing Theory, Socio-cultural Theory into one unified framework. RST describes texts in a rich and highly constrained way and thus predicts much about the character and effects to be expected in natural texts and describes functions and structures that make texts effective and comprehensible in human communication (Mann, Matthiessen and Thompson, 1992: 43). RST can identify the hierarchical structure of discourse, describe the relationship between the components of the discourse from the functional aspect, and provide a comprehensive analysis of the discourse structure rather than selective comments. Further, it is not limited to the size of the discourse, but can be used in various types of discourses of different lengths. And it combines holistic structure with syntactic structure and relational structure. Rhetorical relationship reflects the author's choice of the type and form of the discourse's relational structure, so the discourse's relational structure is rhetorical. So in this study, this theory is used to analyze the features of a certain type of text of native English writer to gain the typical textual and rhetorical characteristics and language features. And some comparative analysis is made on the differences in textual and rhetorical

and language aspects between Chinese English learners and native speakers.

Process Writing Theory views writing as a process rather than a product (Tobin, 2001). Tompkins (2008) divided the writing process into five stages which are nonlinear and recurrent cyclic: prewriting, drafting, revising, editing, and publishing. This approach focuses on students' writing process and helps them find, analyze and solve problems in the process of writing. Through a variety of teaching activities, teachers focus on guiding writing at the level of discourse, including various writing steps such as conception, outline writing, drafting and revision. Teachers' guidance runs through the whole writing process until the final writing. Therefore, in this study, attention is paid to the process as well as the writing products of Chinese English learners.

Socio-cultural Theory is put forward by Vygotsky (1978), and emphasizes the important role of the social and cultural factors in the development of human's cognition. This theory considers the close relation between social interactions of language acquisition development of human being, so it can provide us with a new perspective to understand the process of L2 acquisition. In the process of writing training, attention is paid to the social and cultural differences between Chinese English learners and native English speakers. So the model of corpus-assisted collaborative process writing approach is as shown in "Fig 1":
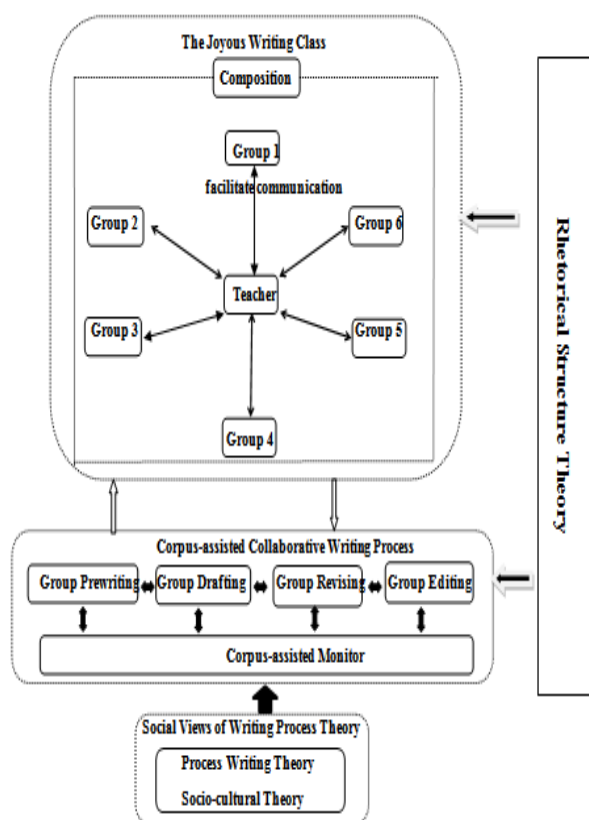

Fig. 1. Conceptual model of corpus-assisted collaborative process writing approach.

The conceptual model of Corpus-based Collaborative Process Writing Pedagogy from textual rhetorical

perspective was negotiated between the Chinese English learner and the Chinese language teacher, as the basis for the design of the writing platform, the teaching and learning plan and class organization. The writing teacher regards English writing as a process and the product of a certain social and cultural phenomenon. And she designs various writing steps, visits each group, and provides them with guidance and helps to facilitate the writing process. The collaborative process within groups has been shown to promote communication and learning through dialogue and discourse.

III. RESEARCH DESIGN

A. Research Problems

This paper attempts to answer the following three questions: (1) How do Chinese EFL learners perceive writing before and after the implementation of corpus-assisted writing teaching combining textual rhetoric? (2) How can corpus-assisted writing teaching combining textual rhetoric improve Chinese EFL learners' writing ability? (3) How do Chinese EFL learners view corpus-assisted writing teaching combining textual rhetoric?

B. Research Objects

The subjects of this experiment were 60 second-year English majors in a university in Guiyang, which were divided into experimental group (30) （EG） and control group (30) (CG), including 3 boys and 27 girls respectively. The average age of students was 19.6 years old. They have studied English for 11 to 16 years and had a certain basis in English writing. Six students were selected as case studies to represent from high to low level of English proficiency. There were no significant differences in the scores of the first writing test between the two groups at the beginning of the semester. That meant the writing level and ability of students in the two groups were almost the same before the experiment.

The teachers, textbooks and teaching hours of the two groups were the same. The control group adopted a relatively traditional writing teaching method, and the main teaching procedures were as follows: students accepted writing tasks and completed writing tasks then teacher corrected the composition and made composition comment. The experimental group used corpus-assisted writing teaching method combining textual rhetoric and diversification of writing evaluation models. The teacher applied such corpora as Corpus of Contemporary American English (COCA), British National Corpus (BNC), UKWaC corpus and a BAWE corpus. At first, the teacher divided the whole class into 6 groups, and presented textual rhetorical feature and language feature of a certain genre of English composition by means of representative textual analysis of native speakers' corpora from the perspective of Rhetorical Structure Theory. Then, the teacher introduced some related textual and rhetorical knowledge and some basic knowledge of Rhetorical Structure Theory. So the students can recognize the unique textual rhetorical, language features and structure of different genres of texts, which played an important role in the development of textual rhetorical

consciousness and writing ability of Chinese students. Later, the teacher chose many texts of the same genre one time to guide the groups of students to make a concrete analysis of the texts from the aspects of textual structure, communication purpose, language feature and rhetorical strategies, etc. So the collaborative groups shared their own opinions in the rhetorical and textual feature of a certain genre of text. Later, the teacher made some comments about the analysis performance of each group. These steps can help students to gain a better understanding of textual rhetorical knowledge and genre and consolidate and internalize students' textual and rhetorical knowledge in English writing.

C. Research Methodology

In order to achieve the research purpose, a pre-test and a post-test and two questionnaires were conducted in the first week and the last week of the semester respectively. To ensure the validity and reliability of the results of the two tests, the same writing title "My View on Job Hunting" was used. Students were asked to write an English composition of more than 200 words in 45 minutes. The two teachers in charge of correcting the writing papers scored two test writing according to the criteria of CET-8 writing evaluation. They exchanged and corrected each writing paper. Finally, the score of each learner was average value of the two scores. Then, paired T test was adopted to test whether there were significant differences in the scores of the two writing tests before and after the implementation of teaching method, so as to determine the changes in English learners' writing proficiency caused by the implementation of corpus-assisted writing teaching combining textual rhetoric. Learners' attitudes towards English writing and their views on corpus-assisted English teaching from the perspective of discourse rhetoric were examined in percentages.

In order to better investigate the improvement of learners' rhetoric and textual awareness and the development of their writing ability, the study made an interview outline and conducted in-depth interviews with 60 undergraduates who participated in this study. The interview lasted for two weeks with 30 hours. The interview covered three parts: learners' current and past mastery of discourse rhetoric knowledge, learners' attitudes towards corpus-assist English writing teaching combining textual rhetoric, learners' achievements and views on this teaching method.

IV. RESULT AND DISCUSSION

A. The Changes of Chinese English Learners' Views and Attitudes Towards Writing

A statistical analysis was made on each mean (full score of 5 points) of the questionnaire to further investigate the degree of students' feedback on the effective of teaching method. From the statistics of pre and post questionnaires, it can be concluded that corpus-assisted teaching and training combining textual rhetoric in the experimental group have a drastic change of writing attitude and views towards English writing. The results in the experimental group showed that the average value of each of the eight items was higher than 4 points. And items 3, 4 and 6 were as high as 4.60, 4.75 and

4.85 respectively, which indicated that the students used the writing strategy of discourse rhetoric and corpus in the writing process. This teaching method was not only very positive, but also showed a tendency: students were eager to apply this writing technique into their writing process. However, the results in control group were much the same in the two questionnaires. So the students showed no evident differences in the aspects of their views and attitude towards writing.

The results of statistics showed that there were significant differences on the attitudes towards the interest in writing between the two questionnaires in all statements except Statements 1, 2, 5. They showed the students had similar positive attitudes towards the importance of good English writing ability and writing class, and to some extent, they had the same certain troubles in writing before and after writing teaching. However, in the statements 3, 4, 6, 7, 8, 9, 10, it can be clearly found that there were striking differences. Statement 3 and 4 were the questions of the interest in the English writing. In the pre questionnaires, only 38 percent of students in the experimental group were interested in English writing while 62 percent of students were not interested in writing and had some troubles in writing. However, most students have changed their negative attitudes towards writing after the experiment. 80 percent of students showed great interest in writing and regard writing isn't as difficult as before. But the situation in control group are quite different, about 37 percent and 45 percent of students were interested in English in the pre and after questionnaires respectively.

Statements 5-10 were the students' self-identification problems in English writing. Most students in two groups have trouble in writing before the experiment, such as vocabulary, grammar, rhetoric and textual organization. But the two groups showed significant differences on the views on the writing difficulties after the experiment.
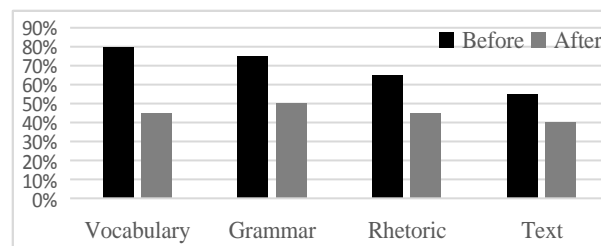

Fig. 2. The views of experimental group on writing difficulties.

As shown in "Fig. 2", before implementing the teaching methods in experimental group, 80% had difficulty in vocabulary, 75% in grammar, 65% in rhetoric and 60% in textual organization. However, after a semester's writing training, only 45% had difficulty in vocabulary, 50% in grammar, 45% in rhetoric and 40% in text. So the data showed a sharp drop in the response to the problems in writing. But the students in control group had no much improvement in these writing problems. It can be figured out that trouble areas before the experiment were vocabulary (79%), grammar (76%), rhetoric (63%) and textual organization (63%). But at the end of the experiment, the

data of these problems shift to vocabulary (70%), grammar (65%), rhetoric (60%) and textual organization (55%).

B. The Developing Changes of Chinese English Learner's Writing Ability

Through 16 weeks training, the post-test between control group and experimental group was carried out, and then some comparison was made on the independent sample tests to give a much clear confirmation on whether corpus-assisted writing teaching method from the perspective of discourse rhetoric is more practical and effective than traditional teaching method. As a result, the students of the experimental group made an obvious progress than those of the control group through a semester period of adopting corpus-assisted writing teaching method.

1) The development of textual rhetorical knowledge: Zhang and Xu (2011) found out writing rhetoric is significantly correlated with textual genre (p<.005, r=.000). So, rhetorical and textual knowledge become the basis of writing learning. The interlanguage acquisition of language learners is a gradual process of internalizing interlanguage. Language learners should consciously pay attention to the standard language input form and constantly sum up the corresponding language system when approaching the target language. A corpus-assistant textual rhetorical analysis method is used in writing class to internalize the knowledge of writing rhetoric and textual genre.
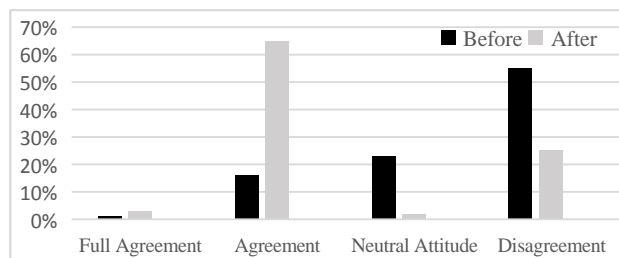

Fig. 3. The views of experimental group on text rhetoric knowledge。

Just as shown in "Fig. 3", the students of experimental group have ungraded their consciousness of textual and rhetorical knowledge. The students in experimental group thought the writing method can help them to raise their conscious of textual and rhetorical knowledge. Before the experiment, only 17 percent of the students agreed that they had some knowledge of the text and rhetoric in English writing in the pre questionnaire, but in the end of the semester, 68 percent of students thought they had master basic knowledge of the text and rhetoric. However, the control group showed the similar attitude towards the problems, and had no evident improvement in the aspect of textual rhetorical knowledge.

Moreover, the experimental group has greatly improved their recognition ability of discourse rhetoric in their writing papers. Before the experiment, this group can obtain only 20 percent accuracy of textual rhetoric with 80 percent of wrongness. But in the end of the experiment, they can reach

up to 70 percent accuracy. The control group showed little improvement in the aspect of textual rhetoric in their English writing. So, to the experimental group, this method combining textual rhetoric indeed improved students' consciousness of textual rhetoric and their writing skills and proficiency. From the research results, it can also be concluded that the students from the EG group not only adjust their attitudes towards writing, but also master the autonomous study in a more relaxed and active atmosphere. Under the guidance of teacher, they achieved their own progress more or less in generating ideas, organizing texts, choosing the correct words, and arranging logically connected sentences.

2) The changes in writing achievement: In order to verify the effective of the writing method, a descriptive statistical analysis was made on the pre-test and post-test scores of the students in the two groups. Before the experiment, the average scores of students' compositions in the experimental group and the control group were 4.525 and 4.45 respectively, the writing proficiency between the two groups were similar. There were no significant differences between the two groups before the experiment (P=.867>.05). After one semester's writing teaching, the scores of both groups have improved to some extent. The average score of the experimental group and the control group were 7.525 and 6.05 respectively. The average score of the experimental group has increased by 3.0 points, while that of the control group has increased by 1.6 points. This showed that the students in the experimental group have made more progress in writing as a whole.

TABLE I. COMPARISON BETWEEN WRITING SCORES IN TWO GROUPS IN POST-TEST

		T-test for Equality Means				
		t	df	Sig(2-tailed)	Mean Difference	Std. Error Difference
Post-test	**Equal Variances**	0.985	85	0.001	1.400	-3.105

As shown in "Table I", the mean scores between two groups in the difference was 1.400, which means that the writing scores in experiment group was much higher than that of control group. It indicated that there were striking differences between these two groups after a process of writing teaching experiment (p=.001<.05), while there was no significant difference between the pre-test and post-test writing performance of the control group (p=.0985>.05). This showed that after 16-week experimental teaching, the students in the experimental group have made great progress in their writing performance, which was obviously superior to that in the control group. However, the students in the control group have made slow progress in their learning and writing performance due to the implementation of the conventional writing teaching.

As shown in "Table II", the mean difference is -3.215, t=7.228, Sig (2-tailed) = 0.001 in post-test, presenting the striking differences between these two groups at the

probability level. So, corpus-assisted teaching combining textual rhetoric is more effective with a comparison to the traditional teaching in writing. This finding is consistent with the study of Boulton and Cobb (2017), which found that which data-driven learning approaches result in large overall effects for both control/experimental group comparisons (d = 0.95) and for pre/post-test designs (d=1.50).

TABLE II.   INDEPENDENT SAMPLES TESTS ON SCORES OF CG AND EG IN POST-TEST

		Levene's Test for Equality for Variances		T-test for Equality of Means				
		F	Sig	t	df	Sig (2-tailed)	Mean Difference	Std.Error Difference
Post-test	*Equal Variances Assumed*	5.36	.677	-7.228	85	.001	-3.215	1.211
	Equal Variances Not Assumed			-7.228	84.89	.001	-3.215	1.211

3) The reduction of writing errors: In the experimental group, the percentage of errors in text structure and content, and the knowledge of textual rhetoric decreased significantly, which showed that students had made great progress in the structure and layout of the text. And in terms of vocabulary, students' spelling and collocation errors were significantly reduced, but there are still many tenses errors, and improper use of words. And there existed the decline in the proportion of Chinglish. Through the deep analysis of students' errors, it was found that after a semester of teaching experiments, students can better grasp the basic vocabulary and textual rhetoric knowledge and begin to learn the expressions of native speakers, but there are still big problems in syntax. Maybe, syntax is so complicated and fragmented that students cannot master all grammar knowledge in a short time. Jiayi Wang (2012) also found that corpus-based approach is useful in the aspects of word frequency, collocation, semantic prosody and synonym discrimination in English composition.

TABLE III.   STATISTICS ON WRITING ERRORS OF STUDENTS IN TWO TESTS

Error Types	Experimental Group		Control Group		Error Types	Experimental Group		Control Group	
	Before	*After*	*Before*	*After*		*Before*	*After*	*Before*	*After*
Chinglish	20	15	22	15	*Inappropriate Textual Structure*	21	10	20	15
Spelling Mistakes	35	20	36	25	*Tense Errors*	15	10	18	12
Sentence Structural Errors	32	20	30	28	*Qualifier Errors*	12	5	10	6
Improper Use of Vocabulary	55	30	54	40	*Content Errors*	13	5	12	10
Error in Singular and Plural Forms	21	15	23	20	*Indication Ambiguity*	6	3	5	3
Total Number of Errors	251	146	250	189					
Average Number of Errors	8.37	4.87	8.33	6.30					

The author further analyzed the erroneous texts and found that the erroneous contents of the students have changed in spite of the increase in the proportion of errors in terms of improper use of words and syntactic problems. However, the control group showed no evident improvement in the English writing, except some slight changes in word spelling and vocabulary. From the data in "Table III", it can be concluded that there was no significant difference in the writing errors in the pre-test between the experimental group and the control group, which was 251 and 254 respectively. And the average number of error in a composition was 8.39 and 8.33 respectively. In the post-test at the end of the semester, the total number of writing errors of both groups decreased, and the overall situation of writing improved. The total number of writing errors decreased to 146 and 189, respectively, and the average number of error in a composition was 4.87 and 6.3. Therefore, the students in the experimental group have more progress in the writing.

On the whole, the number of writing errors in the two groups showed a downward trend, especially in vocabulary errors, syntactic errors, etc. In the first test, the type and the number of errors in the experimental group was not significantly different from that in the control group. In the second test, it can be found that the number of vocabulary errors, syntactic errors, textual structure errors, etc. in the experimental group is much less than that in the control group. This shows that the students in the experimental group have mastered more vocabulary and grammar than those in the control group.

According to the above data, the students' comprehensive writing ability in the experimental group has been greatly improved. It also proved that the writing teaching mode combining corpus and textual rhetoric and multiple writing practice modes was superior to the traditional writing teaching mode in many aspects. It has cultivated students' interest in writing from two aspects of teaching concepts and technical platforms, increased students' learning motivation, and changed writing from a passive acceptance task to a process of practical activity in which students actively participated, and cooperated with each other while teachers play a guiding role.

C. Chinese English Learners' Views on the Teaching Method

Through the analysis of interviews after the experiment, 90 percent of the interviewees considered corpus-assisted teaching combining textual rhetoric as an effective writing method. 90 percent of the interviewees thought this method was an effective in improving their writing ability and skills. 100 percent of the interviewees showed positive evaluation about this method to some extent and expressed this method was useful for their own writing improvement in varying degrees. 100 percent of the interviewees said they liked reading native speakers' writing and followed the writing style of the native writers. All interviewees expressed their willingness to accept this method that was helpful for writing improvement. The corpora of English native writers provide references in different aspects of English writing, such as vocabulary, grammar, content, rhetorical strategy and textual organization, etc. And the knowledge of text and rhetoric can help them gain better understanding of the English texts of different genres. So they can master the basic skills to arrange the layout and textual organization, and choose the suitable words and grammar to form an English composition, etc.

One student said, "At first I was afraid of English writing because I had many difficulties in vocabulary, grammar, context and organization, etc. But after corpus-assisted teaching method combining textual rhetoric, I have much confidence in writing and find the strategy of English writing. And my composition is more fluently and easy. At present, I always think about the genre of the composition before writing, then arrange the textual organization structure and rhetorical features of structure and content, and choose the authentic English expressions to form a composition. The corpora of native writer are just like an artifact, guiding me into the magical world of English writing. This writing method benefits me a lot."

Another student said, "corpus-assisted teaching method combining textual rhetoric pays attention to the process as well as the writing product. Many various activities in the class have been experienced, such as group discussion, collaborative interaction between students, and students and teacher. And the sense of textual rhetoric has been enhanced, the genre knowledge has been increased, and reading and writing abilities have been greatly improved."

V. CONCLUSION

This study represents an attempt to improve students' writing ability by offering them a new teaching writing method in class. Two approaches, conventional way of teaching writing and corpus-assisted approach combining textual rhetoric are used in different groups so as to better observe the effect of corpus-assisted approach combining textual rhetoric. From the results reported, this teaching approach is more helpful in motivating students' interest in English writing as well as improving their writing proficiency. This finding shows that this teaching method plays an important role in restoring confidence in English learning and developing their overall writing ability.

Jarosław (2007) thinks that the language teachers find it much easier to access, compile and consult corpora for language teaching. This study provides important implications for English writing teaching and learning. The corpus-assisted approach combining textual rhetoric can enhance Chinese English learners' confidence in English writing and their critical thinking ability, social interaction ability and writing ability. Moreover, the teaching approach combining textual rhetoric pays attention to both the writing learning process and the writing products. The whole process pays special attention to develop learners' genre awareness and textual rhetoric awareness, as well as increase learners' genre knowledge and textual rhetoric knowledge so as to better promote their writing ability.

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