

Corpus-based Empirical Research on Senior High School English Lexical Chunks Teaching

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Abstract: *This research takes the grade one students of a senior high school in Hebei as the research objects. The experimental class adopts the lexical approach, and the control class uses the traditional teaching method for teaching, aiming to explore the impact of the lexical approach on senior high school English writing teaching. In terms of the use of lexical chunks, compared with the control class, the fluency and diversity of lexical chunk use in the experimental class have significantly improved, but the improvement in accuracy is not very obvious. In terms of writing ability, the improvement of the writing scores in the experimental class indicates that the lexical approach has a significant impact on the improvement of students' writing ability. At the same time, this research also has some limitations, such as the relatively short teaching duration and the limited sample size, which will affect the universality of the research results. Future research can be improved in these aspects.*

Keywords: Lexical approach, Senior high school English writing, Lexical chunks, Corpus.

1. Introduction

As one of the four fundamental language skills, writing plays a crucial role in English learning. It contributes to the improvement of language accuracy, the expansion of vocabulary, and the development of learners' logical thinking and analytical abilities. The *National English Curriculum Standards for Senior High Schools (2020 Revision)* set higher expectations for students' expressive abilities and outline the level of writing proficiency students are expected to achieve. For example, students should be able to purposefully select appropriate vocabulary and grammatical structures to convey meaning accurately, and use cohesive devices effectively to enhance the coherence of written texts.

However, writing remains one of the weakest areas for many students. In current English teaching practice, teachers often place more emphasis on the final product of writing rather than on the development of students' writing abilities during the writing process. As a result, problems encountered by students in writing—such as limited vocabulary and the frequent use of “Chinglish”—are often left unresolved. These difficulties may reduce students' interest and motivation in writing and hinder the effective improvement of their writing proficiency. Therefore, it is necessary to explore more effective instructional approaches to improve the current situation of English writing instruction.

In recent years, many linguists have investigated the role of lexical chunks in language learning, which has laid a theoretical foundation for the lexical approach. Michael Lewis (1993), one of the earliest proponents of this approach, argued that “language consists of grammaticalized lexis, not lexicalized grammar.” This perspective highlights the importance of lexical chunks in language acquisition and use.

Based on the feasibility of applying the lexical approach to English writing instruction, this study conducts an empirical investigation of the use of lexical chunk teaching in senior high school English writing classes. Although a growing body of empirical research has shown that lexical chunk instruction can improve students' writing performance, whether improvements in writing scores necessarily reflect the

development of writing ability remains open to discussion. Moreover, many existing studies examine the use of lexical chunks primarily through corpus-based analyses. In order to provide a more comprehensive evaluation of the effectiveness of lexical chunk instruction, this study examines both students' use of lexical chunks and their writing ability. Specifically, it aims to explore the changes in students' lexical chunk usage and writing performance in writing instruction that incorporates lexical chunk teaching.

2. Literature Review

2.1 Lexical Chunks

2.1.1 Definition of Lexical Chunks

Although there is no universally accepted definition of lexical chunks, scholars generally agree that they are prefabricated language units that can be retrieved and used as a whole, thereby contributing to greater accuracy and fluency in language use. A number of influential definitions have been proposed in the literature.

Becker (1975) was among the first to introduce the concept of prefabricated chunks. He argued that such chunks are fixed or semi-fixed patterns in language. During language production, speakers are able to retrieve similar prefabricated phrases from memory and make slight modifications to suit the communicative context.

Pawley and Syder (1983) referred to lexical chunks as lexicalized sentence stems. They suggested that native speakers possess a large repertoire of such stems in their mental lexicon, which enables them to produce language fluently and naturally. For second language learners, mastering these prefabricated patterns is therefore essential for narrowing the gap between their language use and that of native speakers.

Lewis (1993) further developed this idea by proposing the concept of lexical chunks within the lexical approach. He argued that language is not simply a collection of individual words but consists largely of prefabricated multi-word units

that function as building blocks in communication.

Similarly, Wray (1999) used the term formulaic sequences to describe strings of words that are stored and retrieved as a single unit in the mind. According to Wray, these sequences may be continuous or discontinuous and can be used directly in communication without the need for extensive grammatical processing.

Chinese scholars have also contributed to the study of lexical chunks. Zhang Changlan (2000) argued that, from the perspective of the lexical approach, language is composed of numerous lexical chunks, and therefore lexical chunks should be treated as the basic unit in vocabulary teaching. Pu Jianzhong (2003), through an analysis of Chinese learners' use of colligation and collocation, pointed out that many learner errors stem from insufficient attention to lexical chunks and suggested that greater emphasis should be placed on lexical chunk instruction. Li Taizhi (2004) defined lexical chunks as multi-word units larger than a single word that occur frequently and show relatively stable forms and meanings, and he also regarded them as the basic unit of vocabulary teaching.

2.1.2 Classification of Lexical Chunks

Scholars have proposed various ways of classifying lexical chunks. Becker (1975) was among the first to provide a systematic classification, identifying six types of lexical chunks in his study (see Table 1).

Table 1: Becker's Classification of Lexical Chunks

Classification	Examples
1. polywords	turn on; mix with; cut into
2. phrasal constraints	in brief; in total
3. meta-discourses	on the one hand...on the other hand
4. sentence builders	It is not allowed to...
5. situational utterances	Could you give me a hand?
6. verbatim texts	better late than never

Based on previous studies, Lewis (1993) and Nattinger (1992) subsequently proposed their own classifications of lexical chunks. Each classification has certain limitations. At present, the classification proposed by Nattinger is widely accepted. Therefore, this study adopts their classification as the standard for analysis (see Table 3).

Table 2: Lewis's Classification of Lexical Chunks

Classification	Examples
1. words & polywords	Therefore; on the way
2. collocations	give up; have a good night
3. institutionalised utterances	It depends on you
4. sentence frames & head	on the one hand...on the other hand

Table 3: Nattinger's Classification of Lexical Chunks

Classification	Examples
1. polywords	For example; by the way; to tell the truth
2. institutionalized expressions	How are you; have a good time
3. phrasal constraints	Pretend to do; be absorbed in
4. sentence builders	Not only...but also...; It be + ...+that...

2.2 The Lexical Approach

The lexical approach was first proposed by Lewis in The Lexical Approach. He believed that in the teaching process teachers should continuously teach lexical items, pay attention to cultivating students' ability to identify lexical

chunks, and improve students' ability to use lexical chunks. He also pointed out that teachers should follow several principles in teaching. First, the shift from grammar to lexical chunks should become the focus of future teaching, and students should continuously accumulate lexical chunks in their daily learning. Second, teachers should carefully select valuable teaching materials. Third, teachers should cultivate students' autonomous learning ability and teach them to learn lexical chunks actively. Fourth, when correcting compositions, teachers should pay attention to the content and structure of the text.

Compared with the traditional grammar teaching method, the lexical approach emphasizes learners' ability to input and output lexical chunks. The use of a large number of lexical chunks in writing can enhance the authenticity and fluency of the text, and at the same time increase students' memory of lexical chunks.

In summary, learning lexical chunks fundamentally changes the way language is understood, because it focuses attention on language learning rather than obtaining individual words through grammatical rules and connecting them together. Many expressions are produced by consciously avoiding the analysis of internal language structures, and meaningful communication through lexis is the core of language learning.

2.3 Studies on the Application of the Lexical Approach in Teaching at Home and Abroad

Studies on the application of the lexical approach in teaching abroad mainly focus on higher education. There are more studies in speaking and writing teaching, and most of them focus on the specific use of lexical chunks. Shatha Kadhim Al-Saadi (2018) investigated Iraqi English majors' awareness and use of lexical chunks. The study found that English majors were not very familiar with the term lexical chunks, and students performed better in recognition tests than in production. Mohammad M and Bayez E (2018: 179–192) believed that the lexical approach could improve the speaking fluency of intermediate EFL learners. Susie K & Matt K (2022) studied the relationship between learners' use of lexical chunks and overall writing quality. The results showed that there was a difference in the number of three-word lexical chunks produced by learners with high scores and those with low scores.

Compared with studies abroad, research on lexical chunk teaching in China began to receive attention in the early 2000s. In more than twenty years of development, a large number of empirical studies have been conducted, and the research subjects cover different educational levels, from basic education to higher education. Most of the research methods are teaching experiments. In recent years, with the development of corpora, some studies have also conducted empirical research based on corpora to examine the use of lexical chunks.

Ding Yanren and Qi Yan (2005: 49–53) studied the use of lexical chunks in college students' spoken and written English. They randomly selected recordings and transcriptions of students' oral examinations and required students to complete a writing task within a specified time. The study found that

students with higher writing scores used lexical chunks better, and students' ability to use lexical chunks was closely related to writing scores. The authors finally pointed out that Chinese students should strengthen their learning of lexical chunk knowledge.

Wang Lifei and Zhang Yan (2006: 36–41) used the SWECCL corpus to study the use of lexical chunks in Chinese college students' English argumentative writing. The study found that Chinese college students used relatively few types of lexical chunks and there was still a large gap compared with native speakers. The difference was particularly obvious in the construction of active and passive sentences.

Chen Weiping (2008: 48–53) believed that the most important step in combining the lexical approach with English writing is to strengthen students' awareness of lexical chunks and gradually cultivate their ability to recognize and apply lexical chunks. Guo Xiaoying and Mao Hongmei (2010: 52–59) conducted one year of teaching practice, using the lexical chunk teaching method in the experimental class and the traditional teaching method in the control class. The results showed that lexical chunks could significantly improve students' writing ability, and lexical chunk use was positively correlated with students' writing level. Qin Jianhua (2014: 133–135) used a comparative experimental method, implementing memorization-based lexical chunk input teaching in the experimental class and traditional teaching in the control class. The results showed that memorization-based lexical chunk input could significantly improve senior high school students' English writing level. Xu Guoqin (2017: 76–80) analyzed English compositions of higher vocational college students through a self-built corpus and explored lexical richness in English compositions from the perspective of prefabricated chunks. Jiang Lei et al. (2024: 127–136) used a corpus-driven method to analyze the use of lexical chunks by Chinese learners of English and summarized the structural and functional characteristics of lexical chunk use among learners with different English proficiency levels.

3. Research Design

3.1 Research Participants

The research participants were 80 Grade One senior high school students from a middle school in Hebei Province, China. Among them, 40 students were in the experimental class, in which the lexical approach was used for teaching; the other 40 students were in the control class, in which the

traditional teaching mode was used. The teaching period lasted for four weeks. The teaching material selected was the Reading for Writing section of the compulsory Book 1 of the People's Education Press senior high school English textbook. The two classes were taught by the same teacher.

3.2 Research Hypotheses

Based on previous studies, the author proposed two research hypotheses in this study in order to test whether the hypotheses are valid.

- (1) What impact does the lexical approach have on the quantity and quality of lexical chunks used in students' writing?
- (2) What impact does the lexical approach have on students' writing ability?

3.3 Research Design

In order to evaluate the writing ability of the two classes and ensure the fairness of the experiment, a writing test was arranged before the experiment. The test topic was selected from authentic questions of previous Grade One monthly examinations, which had been verified to have good reliability and validity. The full score of the writing task was 25 points.

Students were required to complete a composition of about 80 words within 15 minutes. According to the English writing scoring standards of the National College Entrance Examination, the compositions were graded by the same professional teacher with more than 10 years of teaching experience. Table 4 shows the specific teaching plan.

The teaching in this experiment was carried out based on the **Reading for Writing** section of **Unit 4** in *Senior High School English Compulsory Book 1* published by People's Education Press. After teaching the reading text, students were asked to write an article based on the theme of the reading.

The experimental class followed the lexical approach. During the explanation of the reading text, the teaching focused on lexical chunks, and students were required to memorize important lexical chunks. In the traditional teaching class, students were required to master the main idea of the text and key grammar points. Lexical chunks were also explained as examples, but students were not required to memorize them.

Table 4: Comparison of Teaching Plans between the Experimental Class and the Control Class

Time \ Class	Experimental class	Control class
First week	Students preview the reading in the Reading for Writing section of Unit 4. The teacher requires them to mark key phrases and fixed expressions and record them in their notebooks.	Students preview the reading in the Reading for Writing section of Unit 4, mark new words, and answer the after-class questions.
Second week	The teacher explains the first two paragraphs of the text and introduces key lexical chunks, such as <i>at least</i> , <i>the number of</i> , and <i>huge wave</i> .	The teacher explains the first two paragraphs of the text, gives the meanings of new words, and explains the general idea of the passage.
Third week	The teacher explains the third paragraph and continues to introduce key lexical chunks, and finally summarizes the theme of the text.	The teacher explains the third paragraph, explains new words and grammar, and finally summarizes the theme of the text.
Fourth week	The teacher asks students to retell the text using the lexical chunks learned and write a summary of about 100 words.	The teacher explains the third paragraph, explains new words and grammar, and finally summarizes the theme of the text.

Table 5: Sample Lesson Comparison between the Experimental Class and the Control Class.

Experimental class	Control class
<p>(1) The theme of Unit 4 is natural disasters. During the teaching process, the teacher guides students to consciously memorize collocations related to natural disasters, such as <i>powerful earthquake</i>, <i>sweep away</i>, <i>huge wave</i>, and <i>foreign aid</i>. After learning the whole text, students become more familiar with words describing natural disasters, so that they can produce correct expressions without hesitation.</p> <p>(2) When explaining <i>be affected by</i>, the teacher emphasizes memorizing it as a fixed lexical chunk. For the word <i>affect</i>, the teacher lists words with similar meanings for comparison, such as <i>influence</i> and <i>effect</i>. After the explanation, the teacher sets situations for students to identify which word should be used. Finally, the teacher asks students to make sentences using <i>be affected by</i> and gives revision suggestions.</p>	<p>(1) During the teaching process, the teacher explains the meanings of new words but does not emphasize them. After the explanation of the text, the teacher asks students to write down and accumulate words related to natural disasters in order to achieve the basic learning objective.</p> <p>(2) When explaining <i>be affected by</i>, the teacher explains it as a common usage of the passive voice. The form of the passive voice is be + done, and <i>by</i> is followed by the person or thing receiving the action. The teacher does not explain that it is a phrase that needs special memorization. After the explanation, the teacher asks students to transform sentences into the passive voice according to the situations given and asks them to make their own passive sentences.</p>

4. Data Results and Discussion

4.1 Analysis of the Quantity and Quality of Lexical Chunks

This study is based on the evaluation indicators of lexical chunk output quantity and quality constructed by Huang & Zhou (2016) (see Figure 1). The use of lexical chunks in senior high school students’ English writing is measured from three aspects, namely fluency, accuracy, and diversity.

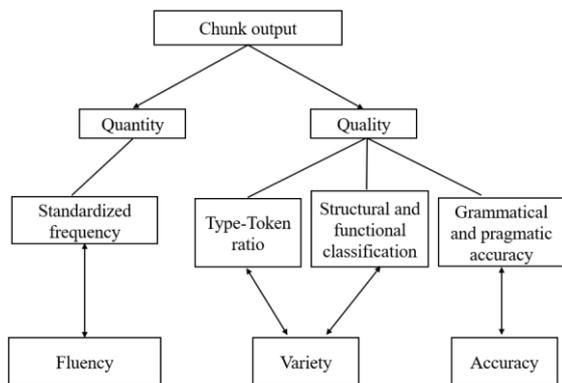


Figure 1: Evaluation Indicators of Lexical Chunk Output Quantity and Quality

4.1.1 Fluency of Lexical Chunks

Fluency refers to the number of lexical chunks produced within a specified time. The software used to retrieve lexical chunks is AntConc. In this study, no distinction is made between different verb forms that constitute lexical chunks, and they are regarded as the same lexical chunk. Fluency can be expressed by standardized frequency, which is calculated as the total number of lexical chunks in an article divided by the total number of words and then multiplied by 1000. It indicates the number of lexical chunks that occur in every 1000 words. Table 6 shows the comparison of the standardized frequency before and after the test in the two classes, and Table 7 shows the comparison of the standardized frequency between the two classes in the pre-test and post-test.

Table 6: Comparison of Standardized Frequency before and after the Test in EC and CC

Class	Test	Standardized frequency
EC	Pre-test	140.72
	Post-test	173.47
CC	Pre-test	142.86
	Post-test	151.38

Table 7: Comparison of Standardized Frequency between EC and CC in the Pre-test and Post-test

Test	Class	Standardized frequency
Pre-test	EC	140.72
	CC	142.86
Post-test	EC	173.47
	CC	151.38

According to the data, the standardized frequency of the experimental class in the pre-test was 140.72, while that of the control class was 142.86. The standardized frequency of the control class in the pre-test was slightly higher than that of the experimental class, with a difference of only 2.14. This shows that the level of lexical chunk fluency in the writing texts of the two classes was similar before the experiment.

First, the standardized frequency of the experimental class in the post-test was significantly higher than that of the control class, with a difference of 22.09. Second, for the experimental class, the standardized frequency increased by 32.75 from the pre-test to the post-test. This indicates that the experimental class made significant progress between the two tests.

For the control class, the standardized frequency increased by 8.52 from the pre-test to the post-test. Although the control class also made progress, the degree of improvement was much smaller than that of the experimental class. This shows that the lexical approach used in the experimental class achieved better results in improving lexical chunk fluency.

Overall, by comparing the standardized frequency before and after the test in the two classes, it can be concluded that the lexical chunk fluency of the experimental class improved significantly during the experiment. Since the control class also received reading instruction, which involved some explanation of lexical chunks, the lexical chunk fluency of the control class also improved to a certain extent. This also shows that the students in both classes had a relatively good level of absorption of the knowledge learned.

4.1.2 Diversity of Lexical Chunks

Diversity can be measured from two aspects. One is the ratio of types to tokens. The larger the ratio, the richer the lexical chunks used by students. On the contrary, it indicates that the types of lexical chunks mastered by students are relatively limited. Table 8 presents the data of the experimental class and the control class on three indicators: standardized type frequency, standardized token frequency, and the type-token

ratio.

Table 8: Type-Token Ratio of EC and CC

	Standardized type frequency	Standardized token frequency	Type-Token ratio
EC	19	7900	1/415
CC	15	7298	1/487

The standardized type frequency of the experimental class is 4 higher than that of the control class, indicating that the experimental class has higher lexical diversity. However, the degree of significance is not high, which may be due to reasons such as the short teaching duration. Its standardized token frequency is 602 higher than that of the control class, which means that the experimental class has a larger total vocabulary. The larger the type-token ratio, the higher the lexical diversity.

As shown in Table 8, the experimental class performs better in lexical diversity. Therefore, it can be concluded that the lexical approach used in the experimental class pays more attention to the accumulation and diversified use of lexical chunks and encourages students to use more different lexical chunks, thus improving lexical diversity.

The second aspect is to compare the types of lexical chunks produced by the students in this study with an existing English learner corpus. The corpus selected in this study is the Chinese Learner English Corpus of Spoken and Written English constructed by Wen Qiufang (2005). For convenience in the following description, it is abbreviated as SWECCCL.

Regarding the types of lexical chunks, based on the structural classification standard of lexical chunks proposed by Biber et al. (1999) and with reference to the studies of Ma Guanghui (2009) and Hu Yuanjiang (2015), the lexical chunks collected in this study were reclassified. They are divided into five categories:

- (1) verb-based lexical chunks, which take verbs as the center, such as *give up*;
- (2) noun-based lexical chunks, which take nouns as the center, such as *cute girl*;
- (3) preposition-based lexical chunks, which take prepositions as the center, such as *in the world*;
- (4) clause-based lexical chunks, which appear in the form of clauses, such as *that it is*;
- (5) lexical chunks that do not belong to the above four categories (such as *as well as*), which are classified as “other lexical chunks.”

Biber et al. (2004) classified lexical chunks into stance bundles, discourse organizing bundles, referential bundles, and special conversational bundles according to discourse and pragmatic functions. This study does not include special conversational bundles, so only the first three types are listed. Stance bundles express attitudes such as wishes, responsibilities, intentions, and abilities, such as *I want* and *I hope*. Discourse organizing bundles express topic introduction and are used to establish contextual relationships,

such as *First of all and as well as*. Referential bundles can be divided into three subcategories: identification (focus), attribute specification, and time and space (text reference), such as *in the world* and *in the eyes* (Biber et al., 2004).

This study analyzes the diversity of lexical chunk use from two aspects: the structural types and the functional types of lexical chunks. Figure 2 shows the proportional distribution of lexical chunks of different structural types in SWECCCL, the experimental class, and the control class, including verb-based lexical chunks, noun-based lexical chunks, preposition-based lexical chunks, clause-based lexical chunks, and other lexical chunks. Figure 3 shows the proportional distribution of the experimental class and the control class in three functional types (stance bundles, discourse organizing bundles, and referential bundles).

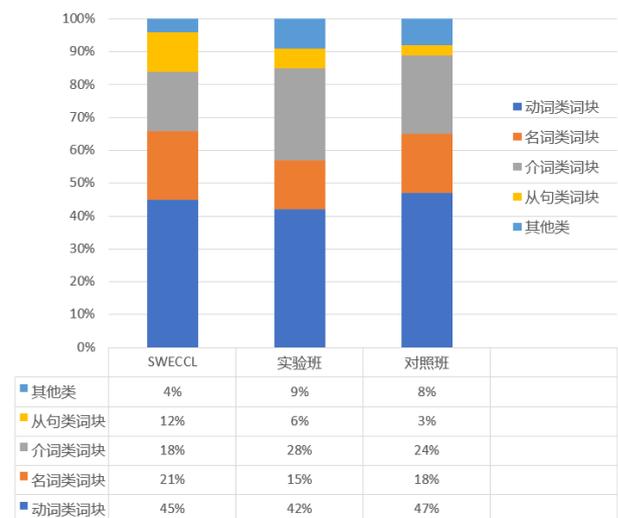


Figure 2: Proportional Distribution of Structural Types of Lexical Chunks in SWECCCL, the Experimental Class, and the Control Class

Overall, the control class has the highest proportion in the use of verb-based lexical chunks, followed by SWECCCL, while the experimental class has the lowest proportion. This indicates that the control class tends to use verbs to express viewpoints and attitudes. SWECCCL has the highest proportion in the use of noun-based lexical chunks. One reason is that many verb expressions are transformed into noun forms, which makes the text closer to native speakers' habitual usage.

The experimental class has the highest proportion in the use of preposition-based lexical chunks. The proportions of the control class and the experimental class are close, but SWECCCL is far lower than the two classes. This may be because the theme of this writing task is natural disasters, in which prepositional lexical chunks such as *in Sichuan*, *on the roof*, and *out of danger* frequently appear.

Clause-based lexical chunks can reflect the level of the composition to a certain extent. In this experiment, SWECCCL has the highest proportion in the use of clause-based lexical chunks. The experimental class has 3% more than the control class. For example, in the experimental class, lexical chunks such as *Hearing that* and *Not only..., but also...* appear relatively more frequently, while the control class uses this type less often. For other lexical chunks, the proportions used

by the experimental class and the control class are not very different.

Through the above analysis, it can be concluded that due to different teaching methods, there are certain differences in the use of structural types of lexical chunks among different classes. After the lexical approach was applied, the experimental class placed more emphasis on the connection and relationship between sentences and paid more attention to the use of prepositions and clauses. Therefore, the proportions of these two types of lexical chunks are relatively higher. The control class focuses more on clear and concise expression, so verb-based and noun-based lexical chunks account for a higher proportion.

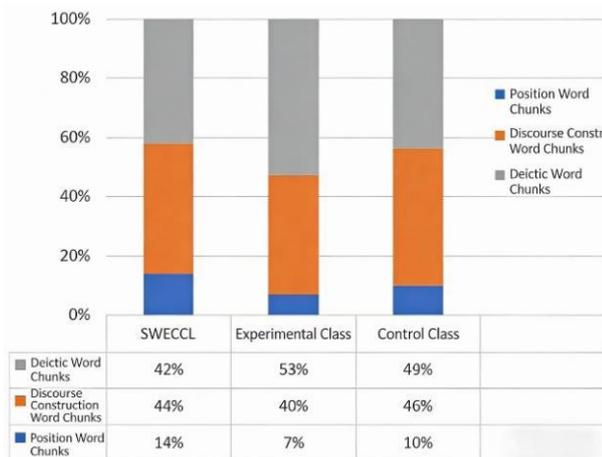


Figure 3: Proportional Distribution of Functional Types of Lexical Chunks in SWECCCL, the Experimental Class, and the Control Class

As shown in the figure, the proportion of referential bundles in the experimental class is 53%, which is slightly higher than that in SWECCCL and 9% higher than that in the control class. This indicates that the lexical chunks used in the experimental class are more specific and closely related to the text. The proportion of discourse organizing bundles in the experimental class is 40%, which lies between SWECCCL and the control class. The difference in the proportion between the experimental class and the control class is not large, indicating that the students' writing logic is basically acceptable and that they are able to use lexical chunks appropriate to the context to connect the preceding and following parts of the text.

The experimental class has the lowest proportion of stance bundles, which is lower than both SWECCCL and the control class. One possible reason is that students in the control class have accumulated fewer lexical chunks and often use verb phrases introduced by the first person in their writing, which leads to a slightly higher proportion of stance bundles in the control class than in the experimental class.

In summary, the experimental class has the highest proportion in the use of referential bundles and the lowest proportion in the use of stance bundles, while the control class has the highest proportion in the use of discourse organizing bundles. After the lexical approach was implemented, some changes occurred in the writing focus of the experimental class compared with the control class. For example, the experimental class pays more attention to reducing the expression of subjective stance, emphasizing objective

description, and stressing logical coherence and referential relations.

4.1.3 Accuracy of Lexical Chunks

Accuracy refers to the correct rate of lexical chunk use. The calculation formula is: the number of correctly used lexical chunks ÷ the total number of words.

In this study, it is considered that students may make two types of errors in writing, namely grammatical errors and pragmatic errors. The former refers to incomplete structures or incorrect collocations, while the latter refers to lexical chunks that are correct in form but inappropriate in meaning when placed in the context. The author compared the overall accuracy, grammatical accuracy, and pragmatic accuracy between the experimental class and the control class, and conducted a significance analysis using SPSS. The results are shown in Table 9. In addition, the author conducted concordance line retrieval for different types of errors and provided specific examples, as shown in Table 10.

Table 9: Comparison of the Accuracy of Lexical Chunk Use between EC and CC.

	Overall accuracy	Significance	Grammatical accuracy	Significance	Pragmatic accuracy	Significance
EC	0.852	0.27	0.891	0.16	0.924	0.88
CC	0.762		0.806		0.919	

Table 9 compares the accuracy of lexical chunk use between the experimental class and the control class, including overall accuracy, grammatical accuracy, and pragmatic accuracy, as well as the significance between the two classes. In terms of overall accuracy, the experimental class performs better than the control class, but the statistical significance of the difference between them is relatively low ($p = 0.27 > 0.05$), which means that the difference may not be very significant. In terms of grammatical accuracy, $p = 0.16 > 0.05$, which indicates that the advantage of the experimental class in grammatical use is also not statistically significant. There is almost no significant difference between the two classes in pragmatic accuracy. This may be because the two classes used the same textbook, and the writing topic was related to the topic of the textbook, which resulted in similar pragmatic accuracy. In addition, since the students are Grade One senior high school students, they are relatively young and may still make various grammatical errors, which leads to no significant difference in grammatical accuracy.

Table 10: Types of Errors in Lexical Chunk Use and Examples of Corresponding Concordance Lines

Types of errors	Corresponding concordance lines
Grammatical errors	Least but not the last (Last but not the least), I'm very delighted to give you the best wishes.
Grammatical errors	As (At) the same time, it can give us an unforgettable experience.
Pragmatic errors	Firstly, I want to know some rules about the game. What's more (Therefore), can you tell me what equipment we should prepare?

Errors in lexical chunk use are mainly concentrated in grammar and pragmatics. Grammatical errors include errors in fixed phrases and the use of prepositions, while pragmatic errors involve the inappropriate use of conjunctions. These errors reflect students' insufficient understanding of the

content and meaning of lexical chunks, which shows that more practice and lexical chunk input are needed in the future to correct them.

4.2 Analysis of Students' Writing Scores

Students in the experimental class and the control class took writing tests before and after the experiment. The required length of the composition was about 200 words, and the full score was 25 points. In this section, the test results of the experimental class and the control class will be analyzed and discussed.

4.2.1 Analysis and Discussion of Pre-test Data

Before the experiment, the author conducted a pre-test in the two classes to examine whether the students in the two classes were at the same level of English writing ability. The pre-test data are shown in Table 11.

Table 11: Pre-test Scores of EC and CC.

Class	N	Min	Max	Mean	Std. Deviation	T-value	Sig. (2-tailed)
EC	40	6	23	12.8	4.0268	.172	.864
CC	40	6	21	12.65	3.7590		

From Table 11, it can be seen that the lowest scores of the experimental class and the control class are the same. The highest score of the experimental class is 2 points lower than that of the control class. The difference between the average scores of the experimental class and the control class is only 0.15. In terms of the average score, there is no obvious difference between the experimental class and the control class. In addition, the standard deviations of the two classes differ only slightly, indicating that the degree of dispersion of the average scores in the two classes is relatively small. After conducting a t-test, the p value is 0.864, which is greater than 0.05, indicating that the students in the two classes have basically the same level of writing ability, and there is no significant difference between the experimental class and the control class before the experiment.

4.2.2 Analysis and Discussion of Post-test Data

After the experiment, in order to explore the influence of the new teaching method on students' writing ability, the students in the two classes conducted another writing test (post-test). The results of the post-test are shown in Table 12.

Table 12: Post-test Scores of EC and CC

Class	N	Min	Max	Mean	Std. Deviation	T-value	Sig. (2-tailed)
EC	40	10	24	15.95	3.1456	3.659	.000
CC	40	6	22	13.3	3.3297		

After the experiment, the lowest score of the experimental class is 10, while the lowest score of the control class is still 6. The highest score of the control class is 22, which is 2 points lower than that of the experimental class. The difference between the average scores of the two classes is 2.65 points. The results show that the students in the experimental class have made greater progress. According to the independent samples t-test, the p value is 0.000, which is less than 0.05. This indicates that there is a significant difference in the post-test scores between the two classes. Based on the above

data, it can be concluded that after the experiment, the mean score of the experimental class is higher than that of the control class, and the writing level of the students in the experimental class has generally improved.

4.2.3 Comparative Analysis of Pre-test and Post-test Scores

In order to ensure the accuracy of the experiment, the author further analyzed the scores of the experimental class and the control class before and after the test. The results are shown in Table 13 and Table 14.

Table 13: Comparison of Pre-test and Post-test Scores in the Experimental Class.

Test	N	Min	Max	Mean	Std. Deviation	T-value	Sig. (2-tailed)
Pre-test	40	6	23	12.8	4.0268	-10.784	.000
Post-test	40	10	24	15.95	3.1426		

According to Table 13, in the pre-test the lowest score of the experimental class was 6, while the lowest score in the post-test was 10. This indicates that after the lexical approach was applied to English writing, the writing ability of students with relatively poor performance improved greatly. The highest score also increased in the post-test compared with the pre-test, which shows that the writing ability of high-achieving students also improved to a certain extent. At the same time, the average score increased by 3.15 points. This shows that the lexical approach has a positive influence on English writing and improves the quality of students' writing. In addition, the standard deviation of the experimental class decreased by 0.8842 after the experiment, indicating that the scores became more concentrated and closer to the mean value. The data also show that the p value is 0.000, which is less than 0.05. This means that there is a significant difference between the pre-test and post-test results of the experimental class. Therefore, it can be concluded that after the lexical approach was applied in the experimental class, the students' writing scores improved greatly.

Table 14: Comparison of Pre-test and Post-test Scores in the Control Class

Test	N	Min	Max	Mean	Std. Deviation	T-value	Sig. (2-tailed)
Pre-test	40	6	21	12.65	3.7590	-1.407	.167
Post-test	40	6	22	13.3	3.7297		

From Table 14, it can be seen that the lowest scores of the control class in the pre-test and post-test are the same. The average score in the post-test increased by only 0.55 compared with the pre-test, which indicates that the writing level of the students in the control class did not improve significantly. The independent samples t-test shows that the p value is 0.167, which is much higher than 0.05. This indicates that there is no significant difference in the students' writing scores before and after the test in the control class.

Based on all the above data analysis, before the experiment the two classes were almost at the same level in English writing. However, after the lexical approach was applied to writing teaching for a period of time, the writing ability of the experimental class improved significantly, while the control class did not show significant improvement under the guidance of the traditional teaching method. Therefore, it can

be concluded that the application of the lexical approach is effective in improving students' English writing ability.

5. Conclusion

This study takes Grade One senior high school students from a middle school in Hebei Province, China as the research participants. By comparing the experimental class (lexical approach) and the control class (traditional teaching method), this study explores the influence of the lexical approach on English writing teaching in senior high school.

The results show that the lexical approach has both positive effects and certain limitations. First, in terms of positive effects, the quantity and quality of lexical chunk use and students' writing ability have improved. The specific findings are as follows.

1) Fluency has been significantly enhanced. The lexical chunk fluency of the experimental class in the post-test is significantly higher than that of the control class, indicating that the lexical approach effectively improves students' proficiency in using lexical chunks in writing.

2) Diversity shows better performance. The experimental class performs better than the control class in lexical diversity indicators. In terms of structural types of lexical chunks, the experimental class pays more attention to sentence connections. In terms of functional types, referential bundles account for a relatively high proportion, reflecting improvements in writing logic and objectivity. This shows that the teaching method promotes students' ability to use lexical chunks in a more diversified way.

3) Accuracy has improved. Although the statistical significance is not high, the experimental class performs better than the control class in both overall accuracy and grammatical accuracy.

4) Writing ability has improved significantly. Before the experiment, the writing levels of the two classes were similar. After the experiment, the average score of the experimental class increased significantly, indicating that the lexical approach can effectively improve the overall quality of writing.

Secondly, in this study there are also some limitations due to external factors, which affected the effectiveness of the lexical approach. The teaching period of only four weeks may have limited the full effect of the lexical approach, and its long-term effect cannot be determined. For example, students' long-term memory and flexible use of lexical chunks still need further exploration. In addition, the research sample only comes from two classes in one middle school, and the sample size is limited and narrow, which may not represent all senior high school students. This limits the generalizability of the research results, and the applicability of the conclusions in other regions, schools, and student groups still needs to be verified. Therefore, future research can improve these limitations and further improve the application of the lexical approach in senior high school English writing teaching.

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