

# Design and Research on Vocabulary Teaching and Learning in International Chinese Education Classrooms Aided by ChatGPT

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## Abstract

With the rapid development of artificial intelligence technology, ChatGPT, as a generative language model, shows great potential in the field of language teaching. Especially in business Chinese teaching, ChatGPT provides new ideas and methods for vocabulary teaching by virtue of its powerful language generation and comprehension ability. *New Silk Road: Advanced Business Chinese Comprehensive Tutorial 1*, as a business Chinese textbook for learners with intermediate or higher Chinese proficiency, covers various aspects of business activities. Among them, Unit 5 “Disputes and Arbitration”, as an inevitable part of business activities, involves a large number of specialized vocabularies and expressions. This paper demonstrates the application of ChatGPT in vocabulary teaching in business Chinese classrooms from vocabulary categorization and explanation, derivation and expansion, and practice and application, in order to improve the teaching effect and learning efficiency. At the same time, it analyzes the problems of ChatGPT in vocabulary teaching in business Chinese classroom and puts forward suggestions and prospects to improve the quality of vocabulary teaching in business Chinese classroom.

**Keywords :** ChatGPT; international Chinese language education; vocabulary teaching

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## Introduction

Under the background of global economic integration, the importance of business Chinese has become more and more prominent as a bridge connecting business communication between China and the rest of the world. With the in-depth implementation of the “One Belt, One Road” initiative, more and more international friends have begun to learn business Chinese, so as to be more skillful in the cross-cultural business environment.<sup>[1]</sup>As a business Chinese textbook for intermediate and advanced learners, *New Silk Road: Advanced Business Chinese Comprehensive Tutorial 1* not only covers all aspects of business activities, but also emphasizes cultivating learners' ability to use the language in actual business scenarios. However, the specialization and complexity of business Chinese vocabulary often become a big challenge for learners. Especially in the unit of “Disputes and Arbitration”, traditional teaching methods often have difficulty meeting the needs of learners because it involves a large number of specialized terms in law, economics and other fields. Therefore, it is particularly important to explore a more efficient and flexible vocabulary teaching method. In recent years, the rapid development of artificial intelligence technology has provided us with new possibilities. ChatGPT, as an advanced natural language processing model, shows great potential in assisting teaching with its powerful language generation and comprehension capabilities. It is able to provide personalized teaching content according to learners' needs and levels, helping learners to better understand and master vocabulary.

At the “ChatGPT and Future Education” academic seminar salon held by East China Normal University, Professor Wu Zhihui of Northeast Normal University proposed: “ChatGPT will have a great impact on the traditional way of learning, which may marginalize the advantages of Chinese education and make it difficult to surpass machine learning.”

## The Application of ChatGPT in Vocabulary Teaching in Business Chinese Classroom

*New Silk Road: Advanced Business Chinese Comprehensive Tutorial 1* is the advanced part of the comprehensive part of the “New Silk Road Business Chinese Series”, which is suitable for learners who have reached intermediate level or above and wish to engage in business activities in China. The book is divided into eight units, each of which covers the main aspects of a certain business activity, aiming at improving the learners' ability to conduct business in Chinese. In the following, we will take Unit 5 “Disputes and Arbitration” as an example to show how to utilize ChatGPT to assist vocabulary teaching in this unit.

### Vocabulary Screening and Organization

For the topic of “Disputes and Arbitration”, ChatGPT can quickly filter out vocabulary related to the topic, and organize and classify them. For example, dispute-related terms may include “dispute”, “controversy”, “disagreement”, etc. Arbitration-related terms may include “arbitration”, “arbitration agreement”, “arbitral tribunal” and so on. Through the screening and organizing of ChatGPT, teachers can obtain the vocabulary resources needed for teaching more quickly.

The vocabulary section in *New Silk Road: Advanced Business Chinese Comprehensive Tutorial 1* is organized in such a way that the order of vocabulary appearances is consistent with the text, but vocabulary with different lexical properties is mixed and organized. Although this strategy reflects the convenience of time-saving and labor-saving teaching, it has weakened the intrinsic correlation between vocabularies to a certain extent. If teachers do not process the vocabulary appropriately in the teaching process and only teach them in isolation, it may affect the overall learning of vocabulary. Teaching strategies and methods should be focused on different vocabularies to ensure the effectiveness and systematicity of teaching. Sun Ruonan (2021) pointed out that “nouns tend to be stored in the mental lexicon in an aggregation reaction relationship, and verbs tend to be stored in a combination reaction relationship”.<sup>[2]</sup>In teaching nouns, the teacher's focus should be on helping students to expand on similar words.<sup>[3]</sup>For example, when the teacher teaches the noun “apple”, they should not only focus on the word “apple” itself, but should guide the students to think about what other words belong to the same category as “apple”, such as “banana”, “orange” and other fruits. In this way, students will learn more related words and their vocabulary will be enriched. Teachers can make students better understand and memorize these similar words by giving examples and classifying them, so that students' learning will be more comprehensive and systematic. As for the teaching of verbs, the teacher's task is to guide students to master the knowledge of linear collocation of verbs.<sup>[4]</sup>Linear collocation, in simple terms, means that when verbs are used together with other words, there are usually some fixed collocation patterns. For example, we often say “to eat” or “to eat fruit”, but not “to eat books” or “to eat TV”. or “eat TV”. Teachers can familiarize students with these collocations through explanation and practice so that they will be more accurate and fluent in using the verbs. To help students memorize the vocabulary and collocations, teachers can encourage students to use mind maps. Mind maps are a very visual learning tool that can present the vocabulary and collocations graphically so that students can see the relationship between them at a glance. In this way, students can understand and memorize the vocabulary and collocations more deeply, and it can also stimulate their association and creativity.

Using ChatGPT to assist teaching, we can take the ten vocabulary words in the “Dispute” section of the unit “Dispute and Arbitration” as an example and adopt different teaching methods according to the different nature of the words. For example, using ChatGPT to generate example sentences for “cause” and “matter”, “cause” is a verb, often with the bad results, in the teaching of the students, you can show the related words. When teaching students, it is possible to show relevant example sentences to help students understand. “Matters” is a noun with a strong written flavor. If simply explained, students may find it abstract to understand. Using ChatGPT to generate example sentences with synonyms of “matters” for word - to - word comparison can help students learn.<sup>[5]</sup>

### ***Vocabulary Expansion***

ChatGPT can provide detailed and accurate explanations for each screened vocabulary word, as well as relevant example sentences and usage. In addition, it can further expand related vocabulary and phrases according to students' learning needs, helping students to establish connections between vocabulary and form a vocabulary network. For example, for the word “arbitration”, ChatGPT can not only explain its meaning, but also provide related information on arbitration institutions and arbitration procedures. Business Chinese vocabulary is characterized by being formal, mostly used in written form, and is mostly used in specific contexts to show business thinking. In the “Arbitration” section, the order of occurrence of vocabulary is also the order of the text, the teacher needs to summarize the words with related meanings and similar themes, and then expand them, so that the students can understand the meaning of the vocabulary in the comparison of vocabulary.

Teachers can use Xmind mind - mapping software to break the linear arrangement of new words and then classify new words with different themes to show the hierarchy between words.<sup>[6]</sup> At the same time, pictures help to understand the meaning of new words, which can help teachers to talk and expand vocabulary.

### ***Vocabulary practice and testing***

The principle of “intensive teaching and extensive practice” in Chinese classroom teaching requires teachers to help learners consolidate language input and output through a lot of practice. ChatGPT can design a variety of vocabulary exercises and tests, such as filling in the blanks, selecting and matching, to meet students with different learning styles and levels. ChatGPT can help students consolidate their vocabulary knowledge and improve their learning efficiency through immediate feedback and correction.

After teaching new words, teachers need to determine whether students can distinguish the differences between words, so teachers can use ChatGPT to write exercises to fill in the blanks with new words to test the learning effect of students.

### ***Personalized learning support***

ChatGPT can provide personalized learning support according to students' learning needs and interests. In vocabulary teaching, ChatGPT can provide targeted vocabulary exercises and explanations for students' weak links to help students overcome learning difficulties. For example, You have not grasped the word 'arbitration agreement' firmly enough, so I suggest you read more relevant arbitration cases and articles to strengthen your understanding and memory.

## The shortcomings and limitations of ChatGPT in assisting vocabulary teaching in business Chinese class

### *language understanding and cultural differences*

ChatGPT's performance in Chinese environment may not be as good as that in English environment, which is mainly because there are relatively few learning data in Chinese corpus, which leads to ChatGPT's limited ability to understand and generate Chinese. In addition, the complexity and diversity of Chinese language, such as language structure, expression and cultural background, make it more difficult for ChatGPT to understand and deal with Chinese. Business Chinese involves not only the language itself, but also rich cultural connotations and business etiquette. ChatGPT may have misunderstandings or deviations in some words and expressions due to its lack of in-depth understanding of China culture. Some technical terms and idioms in business Chinese may be difficult to be accurately understood and translated by ChatGPT, thus affecting the teaching effect.

### *It is difficult to determine the accuracy of the assessment and there are factual errors*

ChatGPT responses, while fluent and natural, may contain inaccurate or incorrect information. This will affect the assessment accuracy and effectiveness of vocabulary teaching. In business Chinese vocabulary teaching, teachers need to accurately assess students' mastery in order to adjust teaching strategies and methods in time. ChatGPT may not be able to provide such accurate and reliable assessment results. It should be noted that at the current stage, large - scale language models like ChatGPT cannot ensure the complete accuracy of the generated text. They may even distort the facts and produce erroneous information. The reason for this is that the limited Chinese corpus leads to the fact that ChatGPT's logical discriminative ability is not yet mature, so there are false statements caused by conceptual misuse or factual errors caused by knowledge blindness. For example, when ChatGPT was asked to identify the HSK levels of vocabulary in the vocabulary list, it was found that some of the vocabulary levels given therein were obviously wrong, so the answers provided by ChatGPT were questioned several times, and in the end, it was found that after each questioning, ChatGPT sincerely apologized and corrected its own answers from the beginning to the end. After many experiments, it was found that for non-common sense and highly specialized questions, ChatGPT's accuracy rate was not high, and factual errors were often made. For these types of questions, the answers generated by ChatGPT are random in nature, which means that for answers it is not sure of, ChatGPT will start answering randomly.

### *Outdated data and lack of real-time interaction*

ChatGPT's pre - training data may contain outdated information, resulting in its inability to provide accurate and timely answers when answering questions involving the latest knowledge or dynamic changes. In business Chinese teaching, new vocabulary and expressions are constantly emerging as the market environment and business practices evolve, and ChatGPT may not be able to capture these changes in a timely manner, thus affecting the timeliness and accuracy of vocabulary teaching. ChatGPT's answers are based on pre - training data and algorithmic generation results, lacking real - time nature and interactivity. In a business Chinese classroom, students may need to communicate and discuss with the instructor in real time to gain a deeper understanding of vocabulary usage and context. And ChatGPT may not be able to provide such real-time interaction and feedback.

### *Lack of personalization and adaptability limitations*

Each student has a unique learning style and needs. Although ChatGPT can provide a certain degree of personalized learning suggestions, it may not fully meet the individual needs of each student. This is because ChatGPT is an artificial intelligence product under the English discourse system of Western countries. Therefore, when conducting data analysis, it may be "forced" to simplify the complexity of the social environment due to the lack of corpus in other language environments, regarding Chinese learners from different countries as undifferentiated behavioral individuals and ignoring their personalized characteristics and mother - tongue backgrounds. For example, in business Chinese vocabulary teaching, students may need to conduct targeted learning based on their own weaknesses and interests. ChatGPT may not be able to provide flexible and personalized enough teaching content and strategies. ChatGPT's answers are based on the generation results of its algorithms and models, and may not be able to fully adapt to the learning progress and level of different students. In business Chinese class, teachers need to adjust and guide students according to their actual situation and learning progress. And ChatGPT may not provide this flexibility and adaptability.

For example, in ChatGPT "After the input of \Please predict the errors that Thai students who speak Thai as their mother tongue may make in the process of learning these Chinese vocabulary, ChatGPT cannot predict the specific types of errors and can only give some formulaic ubiquitous search results. However, these answers are full of a large number of uncertain expressions containing possible and cannot provide any specific and feasible reference opinions for our teaching activities.

## Conclusion

Based on the background of the digital development of international Chinese education, combined with the qualitative analysis of a large amount of text information, this paper introduces the possibility of using ChatGPT to design vocabulary teaching content in business Chinese classrooms. By using ChatGPT to assist the vocabulary teaching of Unit 5 Disputes and Arbitration of *New Silk Road: Advanced Business Chinese Comprehensive Tutorial 1*, we can find that ChatGPT has

significant advantages in improving teaching effects and learning efficiency, and can well help Chinese teachers in vocabulary teaching. It can quickly screen out relevant vocabulary, provide detailed explanations and expanded information, design diversified exercises and tests, and provide personalized learning suggestions according to students' learning needs. However, we should also pay attention to the limitations that ChatGPT may have in generating teaching content, such as limited professional knowledge reserves, lack of pertinence and effectiveness, etc.<sup>[7]</sup>Therefore, when using ChatGPT to assist teaching, teachers need to optimize and adjust based on the actual situation to ensure the optimal teaching effect. However, with the development and widespread application of artificial intelligence technology, we can expect in the future that the development of ChatGPT will gradually make up for the current shortcomings and play a greater role in the field of international Chinese education.<sup>[8]</sup>

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