

English Reading Teaching Practices based on CiteSpace

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Abstract

This study explores the practice of English reading teaching based on CiteSpace and designs differentiated teaching methods for English majors and non English majors, with personalized learning paths as the core. By constructing an English reading knowledge graph, integrating knowledge points and systematically analyzing students' learning needs and cognitive levels. For English major students, emphasis is placed on deep text analysis and academic reading ability development, using knowledge graphs to recommend advanced learning resources; For non English major students, it is important to focus on practical reading skills and interdisciplinary knowledge integration, and to improve learning efficiency through dynamic path adjustment. Practice has shown that personalized teaching based on knowledge graphs can effectively improve students' reading interest and ability, while providing precise learning support for students from different professional backgrounds. The research results provide new ideas for intelligent English teaching and highlight the potential of knowledge graphs in optimizing teaching strategies.

Keywords

English Reading; Teaching Practices; CiteSpace.

1. Introduction

In the past 20 years, many experts and scholars in the field of foreign languages at home and abroad have conducted extensive research on teaching methods aimed at improving reading proficiency, English reading teaching models and theories. From traditional teaching-centered approach to current learning-centered approach, teaching practices on English reading have achieved certain results, which reflects contemporary educational theory on traditional English reading teaching and its adaptation to the development of educational technology[5]. But the effect is not very satisfactory, especially in the southwestern province of ethnic groups, where universities have not given enough attention to the cultivation of reading ability in college students' English learning process. Classroom observation and investigation research were conducted at different majors of students and with different teaching resources, which have had a certain impact on the teaching of English reading. The specific problems encountered by English teachers in teaching English reading are as follows:

(1) Monotonous teaching strategy

The traditional English classroom teaching model is mainly teacher-centered and adopts a one-way teaching approach. In this mode, teachers usually focus on the analysis of grammar and the explanation of vocabulary, while the emphasis on reading teaching is clearly insufficient, and targeted reading teaching is rarely carried out[3]. This monotonous teaching mode often makes it difficult for students to grasp the context and structure of the entire article during the reading process, and the article can only be analyzed sentence by sentence. This approach undoubtedly affects students' reading efficiency and understanding depth.

With such teaching methods, students usually lack active thinking and exploration in the reading process. They may have some understanding of English grammar and vocabulary, but there are significant difficulties in reading comprehension. Because reading is not just about

understanding the meaning of each word, but more importantly, understanding the meaning and structure of the entire article, grasping the author's viewpoint and intention.

(2) Lack of innovative teaching methods

In current teaching practice, many teachers have shown a certain lack of innovation in teaching methods and tools[1]. They often rely on traditional teaching tools such as blackboards and PowerPoint presentations to impart knowledge in the classroom. This traditional teaching method is not ideal in promoting students' active participation and improving classroom fun. The lack of innovative classroom teaching methods often leads to a monotonous and dull classroom atmosphere. Teachers write on the blackboard, while students passively receive knowledge. This one-way way of knowledge transmission lacks effective interaction and feedback. During this process, students may feel a lack of enjoyment and motivation in learning, which in turn affects their interest and enthusiasm for English reading.

As English is a foreign language, students are already facing certain difficulties and challenges in the learning process. If teachers lack innovation in teaching methods and cannot effectively stimulate students' interest in learning, the improvement of students' English reading ability would be impossible, and there may even be a decline in learning motivation and confidence.

(3) Lack of reading motivation

Some students may show a clear lack of interest and motivation when exposed to English reading materials. They usually regard English reading as a dull burden rather than a fun and highly valuable learning activity. This negative attitude greatly weakens their initiative and enthusiasm in the reading process, resulting in them being unable to devote enough time and energy to improve their English reading ability. For these students, English reading has become a kind of pressure, a task that must be completed, rather than a learning process that can bring happiness and rewards. Therefore, they often cannot experience the pleasure and sense of achievement brought by reading English articles, nor can they obtain the nourishment of knowledge and ideas from reading. In this situation, English reading has become their burden, rather than a tool to enrich their spiritual world and broaden their horizons.

(4) Inadequate extracurricular reading resources

Extracurricular reading, as an extremely effective way to enhance students' comprehensive literacy and reading ability, is of great importance. However, its practical application value in real life is often overlooked by teachers and students. There is a clear shortage of extracurricular reading resources in English books, newspapers, and journals, which results in the scarcity of reading materials. The existence of this situation makes it difficult for students to achieve the expected teaching goals in terms of English reading, which seriously affects their learning effectiveness and to some extent, it restricts their expansion of horizons and improvement of comprehension ability.

2. Significance of the Study

2.1. Theoretical Significance

Theoretically, CiteSpace-based English reading helps construct a reading subject exploration, visualizing the relationships between knowledge points, supporting personalized learning and resource management. The use of CiteSpace aims to navigate and display knowledge in English reading, with the main purpose of simplifying the reading information access process and revealing knowledge structures[2]. It presents the relevance of reading teaching in a visual form, demonstrating the developmental relationships and logical structures between scientific knowledge. In the 1980s, semantic networks began to develop towards logical semantic representation and inference, while semantic network theory became more sophisticated. In the semantic network structure, knowledge entities or concepts are represented by nodes, and

the attributes or relationships of knowledge are represented by the edges connected between nodes.

This study attempts to introduce knowledge graph technology into the field of foreign language education, promoting the intersection and integration of foreign language disciplines with other disciplines, enhancing the overall quality and level of foreign language education. Foreign language education can be promoted by interdisciplinary integration. English teachers gradually strengthen awareness of national strategic needs and respond to serve the needs of the country and society through foreign language teaching and research and highlight the mission and responsibility of serving national strategy and local construction. It is necessary for language teachers attach importance on language characteristics and disciplinary advantages, collaborate with other disciplines and cultivate international talents with compound advantages. The cross integration of foreign language disciplines with other disciplines has gradually become a trend in disciplinary development, and interdisciplinary research helps to stimulate academic growth and promote academic innovation and development in the following ways.

First, a scientific and reasonable English reading research system were constructed. By analyzing the frequency of authors appearing in multiple papers, the correlation between them could be reflected. Therefore, if the same author appears in multiple papers, it indicated that they have a certain correlation. By using CiteSpace software to analyze the authors of the article, a knowledge graph of co-authors was obtained.

The size of each node represents the frequency of the author's appearance. The larger the node, the higher the frequency of the author's appearance, and vice versa. There would be connecting lines between authors, and the thicker the lines, the higher the level of collaboration between the two authors, and vice versa.

Second, advantages and disadvantages of English reading teaching methods were analyzed based on knowledge graph. Based on the constructed knowledge graph, the researcher analyzed the "root" knowledge points of the problems, and then strengthened the reading method knowledge points that students have learned but not yet mastered. By combining the labels of reading practice corresponding to each knowledge point in the dimensions of examination direction, knowledge point skills, and problem-solving methods with actual classroom observations and lesson plan collection, a multi-dimensional analysis of the reasons for the existence of difficult knowledge points was conducted, which is more comprehensive and accurate. In the research process, the researcher explored how to construct a knowledge graph based reading teaching evaluation system to be more comprehensively and scientifically to evaluate students' learning outcomes, providing strong support for teaching improvement.

2.2. Practical Significance

In a practical way, the results of this research can be directly applied to teaching practice, combined with teaching content and teachers' teaching experience, to improve the effectiveness and quality of college English reading teaching, helping students better master English reading skills and enhancing their comprehensive English application ability. Moreover, by constructing personalized learning paths and offering precise teaching content, it can meet the differentiated learning needs of different students, stimulate their interest and enthusiasm for learning. Besides, this study also contributes to promote the reform and development of foreign language education in universities, enhancing the overall level and international competitiveness of foreign language education.

By constructing a knowledge graph based on reading strategies, precise delivery of teaching content and personalized learning path planning can be achieved, thereby enhancing the pertinence and effectiveness of reading teaching and meeting the differentiated learning needs of different students. Using the literature related to personalized teaching of college English in

the CSSCI database as the data source, this paper analyzes the hot topics and development trends of personalized teaching research in college English in the past 10 years, in order to provide a convenient way for teachers and students to acquire knowledge, promote personalized learning of students, and improve the quality and effectiveness of college English teaching in the following two ways.

(1) Promote joint development of English reading courses

Different universities can jointly develop English reading courses based on their own teaching characteristics and advantages. Through collective lesson preparation, resource sharing, and course evaluation, ensure the scientific and practical nature of course content, and improve teaching effectiveness. Surrounding universities form an alliance to jointly carry out English reading teaching cooperation. By sharing resources and complementing advantages within the alliance, the overall teaching quality can be improved. For example, university alliances can jointly organize English reading competitions, academic lectures and other activities to stimulate students' interest and enthusiasm for learning.

(2) Improve the cooperation mechanism between research institutions

With the acceleration of globalization and the increasing frequency of international communication, the importance of English as an international lingua franca is becoming increasingly prominent[4]. Therefore, improving the quality of English reading teaching and cultivating students' English reading ability have become the common goals of all colleges and universities. Cross institutional cooperation can achieve complementary advantages and jointly promote the development of English reading teaching by integrating teaching resources, faculty strength, and teaching experience from different institutions.

The presentation of collaborative frequency and activity among research institutions based on knowledge graph highlights the differences in teaching and research resources and faculty strength among different universities, thus establishing a resource sharing platform to optimize the allocation and shared utilization of teaching resources and solve the problem of uneven resource allocation. In order to facilitate academic exchange and collaborative research, universities can regularly hold academic exchange conferences to share the latest teaching achievements and research progress. At the same time, joint applications for scientific research projects can also be made to explore new methods and approaches to English reading teaching.

3. English Reading Teaching Demonstration

In the research process, the researcher focused on the following teaching strategies: English reading teaching with visual thinking mode, English reading teaching with project-based mode, English reading teaching with personalized path, and English reading teaching with interdisciplinary integration.

The researcher focuses on the differences in the mastery of English reading methods between English major and non English major students. At the same time, the researcher participated in teaching the reading course for the English major of Guizhou Minzu University for the 2022 Grade, designing and observing reading classes for non English majors, including Software Engineering classes 1, 2, and 3 of 2022 Grade, Pharmacy, Pharmaceutical Engineering, Traditional Chinese Medicine Resources and Development, Chemistry class 1 of 2022 Grade, Computer Science and Technology, Artificial Intelligence, Statistics, Mathematics and Applied Mathematics classes of Grade 2022.

3.1. Project-based Teaching Mode

Teaching Demonstration 1: English Reading Teaching with Project-based Mode

Teaching Class: Software Engineering Classes 1, 2, and 3 of Grade 2022

(1) Theme Bridge-in (Week 1)

Introduce the changes in the current business environment as background information, such as digital transformation and sustainable development trends through videos, case studies, etc.
Vocabulary and expression: Learn and master vocabulary and expressions related to business thinking, innovation, change, etc.

Discussion activity: Group discussions on topics such as "What is a successful business model?" and "What are the future trends in business?"

(2) Text Reading and Analysis (Week 2)

Reading materials: Select English articles and case studies on business innovation and business model change.

Reading task: Students independently read and summarize the main idea, key information, and author's viewpoint of the article.

Group discussion: Each group selects a case for in-depth analysis, explores the reasons for its success or failure, and proposes improvement suggestions.

Project Planning and Implementation

Project theme: Based on the learned content, select a business field (such as retail, technology, education, etc.) and design an innovative business model or improvement plan.

Project grouping: Students are grouped according to their interests and abilities, with 4-5 people in each group.

Project planning: Develop a project plan, including goal setting, market research, scheme design, implementation steps, etc.

Project implementation: Utilize extracurricular time to conduct market research, data analysis, program design, and other related work.

(3) Achievement Display and Evaluation (Week 3)

Presentation stage: Each group presents their business model or improvement plan through PPT, video, and other forms, and answers questions from teachers and classmates.

Assessment Stage: A combination of peer evaluation, self-evaluation, and teacher evaluation is used to evaluate students' participation, cooperation ability, innovative thinking, and language expression ability.

3.2. Personalized Teaching Mode

Teaching Demonstration 2: English Reading Teaching with Personalized Path

Teaching Class: Computer Science and Technology, Artificial Intelligence, Statistics, Mathematics and Applied Mathematics of Grade 2022

The personalized learning material design for Unit 5 "Language and Culture" of New World Interactive English was mainly planned and designed from the following aspects to ensure that the learning materials meet the learning needs of students and effectively enhance their language ability and cultural awareness.

(1) Core vocabulary and phrases

Carefully select core vocabulary and phrases related to language and culture, such as "cultural identity", "linguistic diversity", "intercultural communication", etc.

Design vocabulary cards that provide pronunciation, meaning, example sentences and usage of words for students to easily refer to and review at any time.

(2) Reading materials

Graded reading materials: Different difficulty levels of reading materials are provided based on students' reading proficiency, referencing English textbooks and related reference books published by authoritative publishers such as Oxford University Press and Cambridge University Press, professional websites and forums, academic papers and research reports on websites such as TESOL International Association and Language Learning&Technology, and

online education resource libraries: such as Coursera, where relevant cultural scholars, language experts, and others record video lectures to explain the relationship between language and culture, cross-cultural communication skills, etc.

Diversified themes cover social phenomena, historical events, customs, and habits from different cultural backgrounds to enrich students' cultural perspectives. Embed interactive annotations in reading materials provide explanations of new words, cultural background introduction, problem discussion, etc. to help students deepen their understanding of the text content.

(3) Increase audio-visual materials

Documentaries and Interviews relating to the unit theme were selected to show the true face of different cultures and people's daily lives. Original sound recordings, and podcast programs were used to help students improve their listening comprehension and oral expression abilities.

(4) Interactive exercises and activities

Organize group discussions around the themes or issues in the reading materials, encouraging students to share their viewpoints and exchange ideas. And role play activities were employed to simulate cross-cultural communication scenarios, allowing students to experience different cultural communication styles and etiquette norms through role-playing.

After class, teachers encourage students to write creative articles, stories, or poems related to the unit theme, expressing their understanding and insights into language and culture.

3.3. Interdisciplinary Teaching Mode

Teaching Demonstration 3: Interdisciplinary English Reading Teaching

Class: Pharmacy, Pharmaceutical Engineering, Traditional Chinese Medicine Resources and Development, Chemistry Class 1 of Grade 2022

In this class, personalized recommendation function of knowledge graph was utilized to recommend suitable learning paths and resources for students based on their learning records and interest preferences.

Interdisciplinary reading materials were suggested from economic perspective. Selected articles or chapters introducing resource economics and environmental economics to explore the scarcity of resources, market allocation mechanisms and the economic impact of resource development from environmental science perspective. English teachers Provide reading materials on ecosystems, biodiversity, environmental pollution, analyzing the impact of resource development on the natural environment and protective measures. The article in this unit introduces issues from sociological perspective, such as social changes, benefit distribution, and public participation in the process of resource development, and explores the impact of resource development on social structure, cultural heritage, and other aspects. Thereafter, interactive exercises and activities were introduced. Group discussions were organized around interdisciplinary topics in reading materials, encouraging students to present their viewpoints and exchange ideas from different disciplinary perspectives. At the same time, interdisciplinary project research was demanded after class, such as "Design of Renewable Energy Development Plan for a Certain Region" and "Balancing Strategy between Resource Development and Environmental Protection", to enable students to apply interdisciplinary knowledge in practice.

The above teaching practices highlights personalized teaching of college English include teacher role transformation, teaching method reform, and learning motivation. Among them, the transformation of the teacher's role mainly involves teaching concepts, teaching content, and teaching methods. The reform of teaching methods mainly involves teachers' teaching skills, teaching concepts, and teaching practices. Learning motivation refers to the learner's cognition, attitude, and behavior towards learning objectives, which can be expressed in various ways, including personal experience, motivation, emotions, and behavior. With the development of

information technology, personalized learning for learners has become a hot topic in the field of education research. At this stage, researchers' research on personalized learning for learners mainly focuses on individual characteristics of learners, learners' autonomous learning abilities, and personalized teaching models in the online environment. The individual characteristics of learners to a certain extent reflect factors such as their interests and abilities, and personalized teaching models in the online environment adopt more targeted and effective teaching models based on fully considering the individual characteristics of learners.

4. Conclusion

There are still some issues that require further research which can be summarized in the following three ways. First and foremost, paying attention to analyze different types of students. Although CiteSpace-based teaching strategies can provide personalized learning paths and resources for students, how to effectively cultivate students' autonomous learning ability is still a challenge. Students need to learn how to independently utilize knowledge graphs for learning and exploration. When conducting personalized teaching research, researchers should fully consider the individual differences of different types of students, pay attention to their personality traits and the problems they may encounter in the learning process, and then carry out targeted teaching. For students with poor English foundation and weak self-learning ability, teachers should focus on cultivating their self-learning ability and guide them to engage in group cooperative learning activities, such as group discussions, to enhance their self-learning awareness. For students with a good foundation in English and strong autonomy, teachers should encourage them to utilize their strengths and advantages, and guide them on how to better use various resources to complete their learning tasks, such as online resource exploration, etc. For students with average English foundation and weak autonomy, teachers should guide them to strengthen their ability to apply English skills, such as self-learning tasks, etc. In addition, for students who are not good at communicating with others or not good at solving problems on their own, teachers should actively guide them to communicate with classmates through various ways and cultivate their communication skills. At the same time, teachers can establish a learning feedback mechanism to timely understand students' learning situation and problems, and provide necessary guidance and support.

Conducting research on teaching modes and methods is as important as the above aspect. Although current teaching strategies have attempted to integrate with knowledge graphs, there may still be issues such as insufficient depth of integration and inflexible implementation of strategies. This may result in limited effectiveness of teaching strategies in practical applications. Personalized teaching mode and method refers to tailoring teaching plans that meet the individual characteristics of learners based on their learning needs, interests, and abilities, while respecting their individual differences, and implementing targeted personalized teaching. When conducting research on personalized teaching models for college English, researchers need to pay attention to the learning needs of different types of students. The study also found that the current personalized teaching models are mainly divided into two categories: teacher-led and student-independent. In personalized teaching of college English, the teacher-led personalized teaching model is mainly characterized by task driven, collaborative exploration, and self-directed learning. The teacher-led personalized teaching model combines teachers' personal knowledge, experience, and skills, which helps students acquire knowledge better in the classroom. The personalized teaching mode of student autonomy can stimulate students' interest in learning English by creating real and natural language communication situations after class. Researchers can also combine multimedia technology to further enhance the exploration and research of learners' autonomous learning ability in the network environment. According to research findings, in personalized teaching of

college English, learners' autonomous learning ability is an important factor that affects their ability to effectively engage in autonomous learning and acquire more knowledge and skills. Therefore, researchers can combine multimedia technology to further explore personalized learning modes that are suitable for the characteristics of different types of students, such as developing an intelligent teaching system based on knowledge graphs to achieve personalized customization and dynamic adjustment of teaching strategies.

When combining technical knowledge and tools to strengthen the exploration and research of personalized teaching models. Researchers and teachers should also notice that though the emergence of knowledge graphs has provided convenient conditions for the research of personalized teaching models. Knowledge graph construction may still have certain limitations, such as incomplete coverage of knowledge points and insufficient refinement of correlation. In addition, with the continuous updating and development of disciplinary knowledge, the knowledge graph needs to be dynamically updated to reflect the latest research results and teaching needs.

Therefore, By utilizing online platforms to build various learning resources, personalized teaching would be beneficial for improving the quality of college English teaching.

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