



Interdisciplinary approaches and teaching models in English reading instruction

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Abstract: This paper explores interdisciplinary approaches and teaching models in English reading instruction, aiming to enhance students' reading proficiency and interdisciplinary literacy. By analyzing existing literature and practical experiences, the paper takes an interdisciplinary perspective and discusses the application of multidisciplinary knowledge such as linguistics, psychology, and education in English reading instruction. Regarding teaching models, the paper combines examples to analyze the implementation effects of problem-based teaching, cooperative learning, and technology-supported teaching. Finally, the paper summarizes the importance of interdisciplinary approaches and teaching models in improving the effectiveness of English reading instruction and proposes directions for future research.

Key words: English reading instruction; interdisciplinary approaches; teaching models; problem-based teaching; cooperative learning; technology-supported teaching

1 Introduction

English reading is a vital component of students' comprehensive language abilities and an effective means to cultivate interdisciplinary literacy. However, traditional English reading instruction often confines itself to the linguistic discipline, neglecting the integration of knowledge from other disciplines. Therefore, this paper aims to explore how interdisciplinary approaches and teaching models can be utilized to enhance students' overall abilities in English reading.

2 Interdisciplinary approaches in the application of English reading instruction

In the realm of English reading instruction, the application of interdisciplinary approaches serves as a key to unlock the door to a multitude of knowledge. This comprehensive teaching model not only enhances language skills but also nurtures students' interdisciplinary thinking.

2.1 Contribution of linguistics

In English reading instruction, linguistics contributes significantly by delving into the study of grammar structures, syntactic analysis, and vocabulary acquisition. The comprehension of grammatical structures is the cornerstone of reading comprehension. Therefore, teachers can enhance students' understanding of sentence structures and grammar rules through systematic grammar instruction. On the other hand, syntactic analysis enables students to grasp logical relationships within the text more accurately, elevating overall reading comprehension.

Linguistics also plays a crucial role in vocabulary learning. Targeted vocabulary teaching activities enable students to expand their vocabulary and enhance their understanding and application of words in different contexts. The accumulation of vocabulary not only facilitates fluent reading but also deepens their comprehension of the content. These specific

linguistic methods, such as grammar exercises and vocabulary expansion, lay a solid linguistic foundation for students, which are essential for improving their reading comprehension [1].

Overall, the contribution of linguistics in English reading instruction is not only evident in providing theoretical frameworks but also in offering practical and feasible methods for teaching. Through in-depth exploration of linguistic knowledge, teachers can design targeted teaching activities to help students systematically grasp grammar and vocabulary, thereby enhancing their reading comprehension.

2.2 Psychological perspective

In English reading instruction, the psychological perspective provides teachers with profound insights into the mental activities of students during the reading process, serving as a basis for formulating personalized teaching strategies. The principles of cognitive psychology play a crucial role in helping teachers understand students' reading habits, information processing methods, and attention concentration [2].

Firstly, the principles of cognitive psychology enable teachers to gain in-depth insights into students' reading habits. Understanding whether students prefer holistic or detailed reading, whether they focus on details or grasp the overall picture, will assist teachers design personalized reading training plans for different types of students. This personalized attention helps enhance students' initiative in reading tasks, thereby boosting their interest in interdisciplinary learning.

Secondly, psychological theories provide information about the concentration of students' attention during reading. By understanding the distribution of students' attention during the reading process, teachers can design attention-guiding activities to help students improve their ability to capture key information [3]. This contributes to students reading more purposefully, not only enhancing reading speed but also improving the efficiency of information digestion and absorption.

In summary, the psychological perspective offers profound insights into English reading instruction, helping teachers better understand individual differences among students and formulate more scientific teaching strategies. Through the principles of cognitive psychology, teachers can comprehensively focus on students' reading habits and attention distribution, thereby enhancing the specificity and effectiveness of teaching.

2.3 Insights from education

Education provides comprehensive insights into English reading instruction, offering theoretical support for designing reasonable teaching activities. Project-based learning is a significant insight from educational theory in English reading instruction. By incorporating project elements, students can participate in practical projects while reading, thereby enhancing their comprehensive literacy.

Project-based learning not only emphasizes knowledge transfer but also focuses on practical application. In English reading instruction, teachers can design various reading projects related to real-life scenarios, allowing students to integrate an understanding of other disciplinary fields into their reading and fostering their interdisciplinary literacy. For example, through reading articles on technology, students can be guided to understand relevant technological trends and engage in practical projects, thereby enhancing their practical application of English reading skills [4].

Additionally, educational theories emphasize the importance of students' interests and motivation in learning. In English reading instruction, teachers can design engaging reading materials to stimulate students' interest. Simultaneously, by understanding students' subject interests, teachers can design projects more specifically to increase students' motivation for learning English reading.

In conclusion, insights from education provide diversified teaching methods for English reading instruction. Through project-based learning and the emphasis on students' interests and motivation, teachers can better promote students' comprehensive development, enabling them to enhance not only their language abilities but also their interdisciplinary

literacy through English reading [5].

3 Innovative approaches and practices in teaching models

In English reading instruction, the innovation and implementation of teaching models are crucial for students' comprehensive development. This chapter delves into the implementation of problem-based teaching, cooperative learning, and technology-supported teaching, aiming to provide specific and effective teaching strategies.

3.1 Problem-based teaching

Problem-based teaching is an instructional approach that emphasizes students' active participation and deep thinking, which is particularly suitable for English reading instruction. This model places students in real-world problem-solving situations, using thought-provoking questions to guide students' active thinking and stimulate their interest and critical thinking in reading.

In problem-based teaching, the teacher's role extends beyond being a knowledge provider to that of a learning guide. Teachers should carefully design questions aimed at guiding students to delve into reading materials, understand the main ideas, and explore detailed information. This question design needs to consider students' cognitive levels and interests, ensuring that the questions have a certain level of difficulty to prompt thoughtful reflection without overwhelming the students [6].

An important feature of problem-based teaching is its emphasis on fostering students' independent thinking skills. By addressing questions, students are guided to analyze and evaluate information, form their own perspectives, and engage in in-depth discussions under the teacher's guidance. This helps cultivate students' critical thinking and logical reasoning abilities, enhancing their depth of understanding of reading materials.

When implementing problem-based teaching, teachers can employ diverse teaching strategies. For example, through group discussions, students can share different viewpoints and thinking approaches, promoting intellectual collisions and enhancing teamwork. Additionally, teachers can guide students to use charts, examples, and other means to concretize abstract problems, aiding students in better understanding and answering questions.

Problem-based teaching not only improves students' reading comprehension but also cultivates their initiative and creativity in problem-solving. Confronting challenges during reading enables students to gain a deeper understanding of language and culture, enhancing their interdisciplinary literacy. Therefore, problem-based teaching is a powerful instructional model that is expected to inject more vitality and depth into English reading instruction.

3.2 Implementation of cooperative learning

Cooperative learning is an instructional model that emphasizes students learning and problem-solving collaboratively in groups. In English reading instruction, the implementation of cooperative learning provides students with broader learning resources and richer learning experiences.

Firstly, cooperative learning emphasizes group collaboration, allowing students to share different reading comprehension and problem-solving strategies through interactions within the group. This interaction not only broadens students' perspectives but also promotes the development of teamwork and communication skills. In collaborative groups, students can encourage each other, collectively tackle reading challenges, and develop their abilities to leverage individual strengths within a team.

Secondly, cooperative learning highlights mutual assistance among students. Within a group, each member can contribute unique insights and perspectives based on their interests and expertise. This mutual assistance process not only enhances students' comprehensive understanding of reading materials but also fosters skills for individuals to contribute their strengths in a collaborative team setting.

In the implementation of cooperative learning, the teacher's role emphasizes guidance and the stimulation of students' intrinsic interest in learning. By providing appropriate collaborative tasks, teachers can guide students to engage in in-depth discussions within the group, sharing their reading experiences and fostering more active participation in English reading.

Teachers can design a variety of cooperative learning activities, such as group reading discussions, collaborative problem-solving, and joint projects. These activities can take the form of real-world examples, multimedia resources, etc., allowing students to apply their English reading skills more effectively and cultivating their comprehensive literacy.

Overall, the implementation of cooperative learning holds significant importance in English reading instruction. Through group collaboration, students not only enhance their English reading abilities but also develop teamwork, communication, and problem-solving skills. This practice provides students with a more extensive learning platform, allowing them to grow collectively in collaboration, laying a solid foundation for future learning and work.

3.3 Technology-supported teaching

Technology-supported teaching plays a crucial role in English reading instruction by leveraging modern technological means, such as multimedia teaching and online resources, to enhance the teaching experience.

Firstly, multimedia teaching provides a vivid and interesting presentation of English reading content. Teachers can use carefully designed multimedia materials, such as charts, images, videos, etc., to concretize abstract English reading content and stimulate students' interest in learning. For example, showcasing authentic English accents through videos or presenting key information from the article through charts can enhance students' understanding and memory of reading materials. Such multimedia teaching not only captures students' attention but also enhances the appeal of English reading, making the learning process more dynamic.

Secondly, technology-supported teaching, through the use of online resources, offers students a broader and deeper range of reading materials. Students can access articles from different countries and fields through the Internet, enriching their reading experience. The richness of online resources helps meet individualized learning needs, enabling students to choose reading content that aligns with their interests and proficiency levels, thereby increasing their active participation in English reading.

Furthermore, the real-time interaction platform provided by technology-supported teaching facilitates convenient communication and collaboration among students. Through online discussions, collaborative editing, and other methods, students can share their understanding of reading materials, pose questions, and collectively solve challenges. This interaction not only promotes collaboration among students but also strengthens the atmosphere of collective learning in English reading.

In summary, technology-supported teaching injects new vitality into English reading instruction. By utilizing multimedia teaching and online resources, students engage in English reading within a more diverse learning environment, encouraging a deeper understanding of language and culture. The implementation of technology-supported teaching not only enhances the appeal and diversity of English reading instruction but also cultivates students' abilities to obtain information and collaborate in the digital age. This positively influences the cultivation of students' interdisciplinary literacy and comprehensive development.

3.4 Design of personalized learning paths

In English reading instruction, the design of personalized learning paths is a key innovation aimed at better meeting the diverse learning needs and interests of students. Through differentiated teaching strategies, it becomes more effective in enabling students to achieve better academic performance in English reading.

The design of personalized learning paths considers differences among students in language proficiency, subject interests, and learning pace. Firstly, for students with higher English proficiency, more challenging reading materials can be provided to encourage in-depth consideration of the content and stimulate critical thinking. Conversely, for students with lower English proficiency, simplified reading materials or grammar explanations can help them gradually improve their language comprehension skills.

Secondly, personalized learning paths also take into account the diversity of students' subject interests. By introducing reading content related to students' interests, motivation for learning can be stimulated. For example, by selecting reading materials related to students' majors and integrating subject knowledge, students can experience the pleasure of practical application in reading, enhancing their experience of subject integration.

In addition, personalized learning paths focus on students' learning pace. By flexibly arranging learning tasks and schedules, students can engage in English reading learning at times that suit their learning preferences, thus improving learning efficiency. This personalized time management helps alleviate students' learning pressure and encourages them to actively engage in learning.

The design of personalized learning paths is not static but requires continuous adjustment based on students' developmental changes. By continuously tracking students' academic performance and feedback, teachers can better understand students' needs and adjust personalized learning paths to better fit students' actual situations.

In conclusion, the design of personalized learning paths plays a crucial role in English reading instruction. By considering students' language proficiency, subject interests, and learning pace, personalized learning paths can better meet individualized learning needs, improving students' learning experience and academic performance in English reading. This innovative teaching model helps cultivate students' abilities for self-directed learning, laying a solid foundation for their future academic and career development.

4 Interdisciplinary integration and optimization of teaching models

4.1 Challenges of interdisciplinary integration

Interdisciplinary integration is considered an effective approach to enhancing students' comprehensive literacy in English reading instruction. However, in practice, it faces a series of challenges.

Firstly, the issue of textbook compilation poses a primary challenge to interdisciplinary integration. Current textbooks are often compiled according to disciplinary divisions, making it difficult to integrate knowledge from various disciplines. Addressing this issue requires systematic textbook reforms to establish materials more closely aligned with practical needs. Interdisciplinary writing teams need to collaborate closely to ensure that textbooks not only cover key points in English reading but also integrate relevant knowledge from other disciplines, forming more comprehensive learning resources.

Secondly, teacher training is another significant challenge. Teachers need to possess sufficient understanding of interdisciplinary teaching concepts and methods to better integrate knowledge from various disciplines into English reading instruction. Training programs should include both theoretical knowledge transfer and practical exercise to enhance teachers' interdisciplinary teaching capabilities. Schools and educational institutions can promote understanding and application of interdisciplinary integration teaching among teachers by organizing workshops, professional training courses, and other means.

Lastly, the construction of an evaluation system is also an urgent issue. Traditional disciplinary evaluation systems struggle to comprehensively assess students' performance in interdisciplinary learning. Establishing a more comprehensive and flexible assessment mechanism is crucial, including project assessments, comprehensive evaluations, and other diversified assessment methods, to better reflect students' interdisciplinary literacy. This requires joint efforts from

educational management departments and schools to innovate assessment standards and promote the evolution of the evaluation system.

To address these challenges, schools and educational institutions can take the following measures. Firstly, they can promote close collaboration among teachers from different disciplines, establishing interdisciplinary teams to jointly participate in textbook compilation and course design. Secondly, they can develop teacher training plans specifically for interdisciplinary integration, covering both theoretical knowledge and practical exercises to enhance teachers' interdisciplinary teaching abilities. Lastly, they can drive innovation in the assessment system, introducing more diversified assessment methods to ensure evaluations comprehensively reflect students' interdisciplinary capabilities.

In summary, interdisciplinary integration holds tremendous potential in English reading instruction, but challenges related to textbook compilation, teacher training, and evaluation systems need to be overcome. Through collaborative efforts, continuous optimization of interdisciplinary approaches and teaching models can be achieved, enhancing the quality of English reading instruction and students' comprehensive literacy.

4.2 Optimization of teaching models

The optimization of teaching models plays a crucial role in interdisciplinary English reading instruction. Different student groups exhibit variations in the adaptability to teaching models; therefore, continuous optimization is essential to improve teaching effectiveness and align with practical needs.

Firstly, personalized learning is a key aspect of optimizing teaching models. Students have diverse learning interests, subject backgrounds, and learning abilities when it comes to studying English reading. Therefore, teaching models should be more flexible to meet individualized learning needs. By introducing personalized learning plans, materials of varying difficulty levels, and diverse teaching activities, it is possible to better cater to students' differentiated needs, enhancing their motivation and interest in learning.

Secondly, emphasizing inquiry-based learning models contributes to optimizing interdisciplinary English reading instruction. This model breaks away from traditional teaching methods, focusing on students' active participation and deep thinking. By guiding students to ask questions, conduct independent inquiries, and share discoveries, inquiry-based learning can stimulate students' interest in learning and autonomy. This approach not only helps cultivate students' critical thinking but also encourages them to better understand and apply interdisciplinary knowledge.

Furthermore, project-driven teaching is also a worthwhile optimization model to explore. By integrating English reading with real projects, students can apply their acquired knowledge to solve practical problems. This teaching model not only enhances students' interdisciplinary integration skills but also nurtures their teamwork and problem-solving abilities. Project-driven teaching enables students to better comprehend the practical applications of English reading, increasing the practicality and interest in learning.

Lastly, utilizing technological means for blended learning is an effective strategy for optimizing teaching models. By integrating online teaching resources, multimedia materials, and teaching platforms, it is possible to enrich teaching content and enhance students' learning experience. Blended learning not only expands students' pathways for obtaining information but also encourages them to actively participate in the learning process, strengthen interaction and feedback, and ultimately improve the effectiveness of English reading instruction.

When optimizing teaching models, attention should be given to coordinating with the assessment system. Evaluation methods should align with the optimized teaching models, fully reflecting students' comprehensive abilities in interdisciplinary English reading. Such an assessment system can guide continuous optimization of teaching models and provide robust support for students' academic development.

In conclusion, continuous optimization of teaching models and incorporating strategies such as personalized learning, inquiry-based learning, project-driven teaching, and blended learning, hold the potential to improve the adaptability and effectiveness of interdisciplinary English reading instruction. This optimization not only impacts students' learning experiences but also contributes to their comprehensive development in interdisciplinary subject integration.

5 Conclusion

This paper provides a comprehensive analysis of the application of interdisciplinary approaches and teaching models in English reading instruction, revealing their positive roles in enhancing students' reading abilities and interdisciplinary literacy. In future research, there is a need for a more in-depth exploration of how different disciplinary knowledge can be more effectively integrated and how teaching models can be optimized based on individual student characteristics, thereby promoting the further development of English reading instruction.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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