Strategies for Teaching Maritime English for Vocational Undergraduate Students from the Perspective of Computer Network Assisted Constructivism

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Abstract: With the development of maritime industry and the acceleration of globalization, the teaching of maritime English is receiving increasing attention. However, traditional teaching methods are no longer able to meet the needs of modern students. Therefore, how to improve the effectiveness and quality of maritime English teaching has become an urgent problem to be solved in the field of maritime English teaching. The constructivist education theory proposes a teaching model centered on students and guided by teachers. At the same time, the development of computer network technology has also provided new ways and methods for maritime English teaching.

1. Introduction

With the rapid development of China's maritime industry, the importance of vocational undergraduate maritime English education has become increasingly prominent. However, traditional teaching methods are no longer sufficient to meet the needs of modern education, and more advanced teaching methods and means are needed. Computer network assistance and constructivist perspectives are currently popular research directions in the field of education, which can provide beneficial insights for vocational undergraduate maritime English teaching. Therefore, this article will explore vocational undergraduate maritime English teaching strategies from the perspective of computer network assistance and constructivism, aiming to provide valuable references for educators.

2. The basic concepts and principles of constructivist education theory

2.1. Basic concepts

Constructivism is an educational theory that regards learners as the center of learning. This theory suggests that the goal of learning is based on students' interests and needs, as well as their previous experiences and knowledge. Students construct knowledge as their own through interaction and reflection with the real world. Constructivist education theory believes that the construction of knowledge is a positive process, and students should play an active role in this process.[1] Teachers should play the role of guides and supporters, rather than imparting knowledge. Constructivism education theory emphasizes that students are responsible for their own learning process, promoting

the development of students' self-directed learning, creativity, and critical thinking abilities. Therefore, this theory has been widely applied and recognized in modern education.

2.2. Principles

2.2.1. Learner initiative

In constructivist theory, learners are the subject of knowledge construction, and they should become active learners and decision-makers, able to choose and arrange learning activities based on their own needs and interests. This initiative can be achieved by providing students with opportunities to choose and explore, such as allowing them to independently choose topics of interest for exploration, encouraging students to ask questions and find answers, and so on.

2.2.2. Constructiveness of knowledge

In constructivist education theory, learners should construct their own knowledge structure through interaction with the external environment and others, and interact and integrate it with existing knowledge. Teachers should provide students with learning opportunities and environments, so that they can explore and discover new knowledge, develop their thinking abilities and creativity. This can be achieved by providing students with opportunities for problem solving and cooperative learning, and encouraging them to carry out inquiry learning.[2]

2.2.3. Social interaction

In constructivist educational theory, learning is not an isolated process, but rather achieved through interaction and communication with others. Learners gain different perspectives and experiences through interaction with others, and further understand and construct knowledge through discussion and communication. Therefore, teachers should provide students with opportunities for cooperative learning and collective inquiry, and encourage them to jointly construct knowledge through communication and cooperation.

2.2.4. Individual differences

In constructivist education theory, each learner is unique and has different backgrounds, experiences, knowledge levels, and interests during the learning process.[3] Therefore, teachers should provide personalized learning support and resources for students to meet the needs of different learners. This can be achieved by providing students with diverse learning experiences, personalized learning plans, and evaluation methods.

2.2.5. Reflection and metacognition

In constructivist educational theory, reflection and metacognition are important components of learning. Learners should be able to reflect on their learning process and outcomes, and draw inspiration and lessons from them to further improve their learning outcomes. At the same time, learners should also possess metacognitive abilities, that is, the ability to monitor and adjust their learning behavior and strategies to adapt to different learning contexts. Teachers can encourage students to engage in reflective and metacognitive activities to help them improve their learning outcomes and self-regulation abilities.

3. The specific application of computer network assisted teaching in maritime English teaching for vocational undergraduate students

3.1. Conducting online communication and discussion

In the era of networking, computer networks have become an important channel for students to communicate and interact, providing more possibilities for teaching. In vocational undergraduate maritime English teaching, using network tools to organize communication and discussion among students can not only promote knowledge sharing, but also stimulate their learning interest and creativity. In online discussion forums, students can freely express their opinions and ideas, and communicate and explore with others, thereby promoting mutual learning and growth. In addition, through online communication and discussion, students can meet more like-minded classmates and maritime English professionals, and establish good interpersonal relationships and professional networks.

3.2. Using multimedia teaching resources

With the continuous development of computer network technology, multimedia teaching resources have become an indispensable part of vocational undergraduate maritime English teaching. Maritime English learning videos, maritime English listening materials, audio pronunciation of professional terms, and maritime English translation tools provide students with a more comprehensive and intuitive learning experience. Teachers can utilize these resources to make abstract concepts and knowledge content more concrete and vivid through methods such as images, audio, and video, thereby helping students better understand and master knowledge. In addition, these multimedia teaching resources can also provide students with different learning paths, allowing them to choose suitable learning methods based on their interests and learning styles. Therefore, the application of computer network assisted teaching in vocational undergraduate maritime English teaching can provide students with more abundant and diverse learning resources, enhance their learning interest and motivation, and help them better complete their studies.

3.3. Providing online self-learning resources

Computer assisted teaching can also provide students with a series of online self-learning resources. These resources not only help students better understand and master knowledge, but also enhance their self-learning ability and learning outcomes. For example, teachers can provide online courseware and instructional videos for students to learn and review anytime and anywhere outside the classroom. In addition, teachers can also provide online testing and evaluation for students, allowing them to independently test and evaluate their learning outcomes and levels. These online self-learning resources can meet students' different learning needs and habits, and enable them to better engage in personalized learning and self-improvement.

3.4. Conducting online testing and evaluation

In vocational undergraduate maritime English teaching, computer-assisted teaching can also provide convenient online testing and evaluation tools for teachers. Teachers can use these tools to conduct formative and summative assessments on students, understanding their learning situation and mastery level. By conducting regular online tests and assessments, teachers can promptly identify students' learning problems and difficulties, effectively monitor and control their learning progress and effectiveness, and thus better guide and assist students. At the same time, through these online

tests and evaluations, teachers can also provide timely feedback and evaluation to students, identify their shortcomings, and provide corresponding improvement suggestions to help students improve their learning effectiveness and grades. These tools can also promote students' self-evaluation and learning reflection, allowing them to have a deeper understanding of the learning content and improve learning outcomes.

3.5. Carrying out remote teaching and online tutoring

Another important function of computer network assisted teaching is to provide remote teaching and online tutoring services. This service allows teachers and students to learn and communicate anytime, anywhere, without being limited by time and location. Through online tools, teachers can provide real-time video teaching and online tutoring, enabling students to solve problems and difficulties in learning in a timely manner, while also helping students better grasp the learning content. In addition, teachers can also provide students with recorded courses for remote teaching and online tutoring, allowing them to choose their own learning time and location according to their own schedule. This flexible learning method can help students better adapt to their learning pace and complete their studies more efficiently.

4. Strategies for teaching maritime English for vocational undergraduate students from the perspective of computer network assisted constructivism

4.1. Personalized teaching strategies

From the perspective of computer network assisted constructivism, personalized teaching can not only be implemented more flexibly, but also bring more advantages. For example, through online teaching platforms, teachers can adjust course content and teaching methods in a timely manner based on students' learning situation and progress, ensuring that every student receives sufficient attention and support. In addition, teachers can also utilize online resources to provide students with a richer and more diverse learning experience. Through multimedia teaching, interactive games, virtual experiments, and other methods, students can learn in a relaxed and enjoyable atmosphere to improve learning efficiency and interest. Finally, personalized teaching from the perspective of constructivism assisted by computer networks can also promote interaction and cooperation among students. Through online discussions, team projects, and other means, students can better communicate and share, so as to enhance the social and interactive nature of learning.

4.2. Problem driven learning strategies

In vocational undergraduate maritime English teaching, the design of teaching methods and resources for teachers is crucial. In order to enhance students' learning enthusiasm and cooperation, teachers can guide students to solve problems through interaction and communication by designing interesting questions and scenarios. For example, teachers can design a simulation scenario of a maritime emergency, allowing students to play different roles in the team and solve problems through language communication and collaboration. Such teaching activities can not only stimulate students' interest in learning, but also improve their language proficiency and teamwork ability. In addition to designing teaching methods, teachers can also use online tools to provide students with more realistic maritime English scenarios. For example, through virtual laboratories and maritime English scene simulations, students can learn and explore in real scenarios.

4.3. Cooperative learning strategy

In modern education, cooperative learning strategy has been widely used as an important means to promote students' learning and development. From the perspective of computer network assistance, teachers can use network tools to organize collaboration and communication between students, thereby further promoting students' learning outcomes. Teachers can design collaborative projects and assignments that allow students to collaborate and complete tasks together. Such cooperative learning strategy can effectively stimulate students' interest and passion in learning, and improve students' learning effect and results. At the same time, teachers can also use online tools such as online document editors, instant messaging tools, remote conference tools, etc. to provide students with a more convenient collaboration and communication environment. Students can collaborate and communicate anytime and anywhere through these tools, making it more convenient to complete learning tasks.

4.4. Exploring learning strategies

In maritime English teaching, teachers can guide students to engage in exploratory learning by designing questions and scenarios, thereby improving their learning effectiveness and outcomes. For example, teachers can design a question about ship structure and machinery, allowing students to understand the principles and applications of ship structure and machinery through practical operation and exploration. This type of exploratory learning can enable students to have a deeper understanding of the learning content and improve their practical and application abilities. In addition, teachers can also utilize online resources and tools to provide students with a more convenient and authentic exploratory learning environment. For example, teachers can use virtual laboratories and simulation tools to allow students to explore and practice in real maritime environments, thereby gaining a deeper understanding of the application and practice of maritime English. Exploring learning strategies can stimulate students' interest and motivation in learning, improve their learning outcomes and outcomes.

4.5. Reflective learning strategies

In maritime English teaching, teachers can guide students to reflect on learning strategies and improve their learning outcomes and outcomes. For example, teachers can have students summarize and reflect at the end of the course, review the learning content and process, and summarize learning experiences and lessons learned. Such reflective learning strategies can help students gain a deeper understanding of learning content and methods, while also improving their self-evaluation and self-management abilities. In addition, teachers can also utilize online tools and resources to provide students with a more convenient and diverse reflective learning environment. For example, teachers can design online reflection questionnaires and reflection diaries, allowing students to reflect and summarize anytime and anywhere. Such reflective learning strategies can help students better understand and apply learning content, while also improving their self-awareness and self-management abilities.

5. Conclusion

In short, the vocational undergraduate maritime English teaching strategy based on the perspective of computer network assisted constructivism is a teaching model that adapts to the development needs of the times. By fully utilizing computer network technology and constructivist concepts, students can better participate in learning, master knowledge and skills, and adapt to the needs of future career development. I hope these strategies can provide some new ideas and methods for vocational

undergraduate maritime English teaching, and contribute to the development of education and teaching.

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