

Construction of a New Teaching Model for Maritime English under the Background of Digital Empowerment

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Abstract: In the context of digital empowerment, the teaching of English courses in vocational colleges needs to follow the trend and undergo digital reshaping, and maritime English courses, as the core course of maritime technology majors, are even more so. The digital teaching methods such as online course platforms, machine automatic grading systems, smart classrooms, and virtual simulation training software have empowered the reform of maritime English teaching, filling the gaps in teaching environment, teaching resources, and evaluation modes, and to some extent improving students' self-learning and innovation abilities.

Keywords: Digital Empowerment; Maritime English; New Teaching Model.

1. Introduction

In recent years, the Chinese government has attached great importance to the development of digitalization in vocational education and has introduced a series of policies to promote the construction of educational informatization. The Education Modernization 2035 proposes to accelerate the educational transformation in the information age, build intelligent campuses, and coordinate the construction of integrated intelligent teaching, management, and service platforms. The Action Plan for Innovative Development of Higher Vocational Education and other documents clearly state the need to strengthen the informationization construction of higher vocational education; The Development Plan for the New Generation of Artificial Intelligence clearly proposes to strengthen the application of artificial intelligence in the field of education. The introduction of a series of favorable policies has become a favorable driving force for the digital transformation of higher vocational education. The continuous maturity and popularization of emerging technologies such as 5G, big data, and cloud computing have also provided technical support for digital empowerment of vocational education and teaching. Based on this, vocational English courses should fully leverage the advantages of foreign language subjects, and carry out foreign language education reform and construction in accordance with the requirements of the "Higher Vocational Education Specialized English Curriculum Standards (2021 Edition)" in the context of the digital economy, "cultivating high-quality technical and skilled talents with Chinese sentiment and international perspective who can effectively communicate in English in daily life and the workplace."

With the booming development of China's shipping industry, there is an increasing demand for high-quality maritime English talents. Maritime English, as the core certification course for maritime technology majors, is an important way to cultivate applied international talents in the field of navigation. However, the current education system for maritime English in China is not yet perfect. For example, the teaching process still focuses more on imparting theoretical knowledge and lacks practical operation, making it difficult to meet the urgent need for high-quality talents in the modern

maritime industry through reform and innovation. Nowadays, there is an urgent need to use various digital teaching methods to enrich the education mode of maritime English, optimize teaching effectiveness, and also achieve innovative educational effects. Undoubtedly, maritime English urgently needs digital reshaping, exploring the teaching practice of empowering maritime language teaching with the digital economy, and promoting the high-quality development of vocational education..

2. The Digital Empowerment

(1) Digital Empowerment Concept

Digital empowerment is to endow vocational education teachers and students with digital teaching and learning ability through big data, the Internet, the Internet of Things, artificial intelligence, virtual reality and other digital resources, so as to improve the quality of vocational education teaching. In short, it is the use of digital tools and solutions to enhance the abilities of organizations or individuals, thereby achieving more efficient work and learning outcomes. In the field of education, this concept has become a core force driving teaching reform and innovation, especially in the personalized, intelligent, and precise teaching of maritime English, which will show significant influence and inject new vitality..

(2) Overall idea of digital empowerment

The digital empowerment of vocational education teaching reform should follow the basic laws of education. Following the basic idea of emphasizing student centeredness, teacher leadership, and inspiring and cultivating students to actively learn, innovative reforms in teaching methods, teaching management processes, and other aspects are achieved through digital means. Reflected in the specific application of maritime English courses, it will be reflected in innovative teaching models and the comprehensive promotion of blended online and offline teaching; By utilizing advanced teaching platforms, we can integrate data from various stages of teaching, learning, examination, and evaluation in the curriculum, and promote a comprehensive and closed-loop teaching and learning revolution.

3. The Application of Digital Empowerment in Maritime English Teaching

(1) Current Status of Digital Teaching of Maritime English

Currently, maritime English teaching is facing a series of challenges. Firstly, the limitations of traditional teaching models are significant. This model often relies too much on textbook knowledge and neglects the importance of practical operations, which is significantly disconnected from the practical needs of the navigation industry. Secondly, the uneven allocation of teaching resources is also a problem. In some regions and schools, high-quality teaching resources are scarce, making it difficult for students to access the latest and most comprehensive maritime knowledge and skills. In addition, the issue of educational efficiency cannot be ignored. In traditional teaching environments, it is often difficult for students to receive timely and accurate feedback on their learning progress and effectiveness, which poses obstacles to improving teaching effectiveness and optimizing teaching strategies.

With the international competition of the shipping industry, maritime education has shifted from simple technical education to quality education. In this context, digital transformation is particularly crucial for the future development of maritime English teaching. By applying digital technology to maritime English teaching, it is possible to achieve the sharing of teaching resources, optimization of teaching methods, and improvement of teaching quality. The introduction of digital means such as intelligent teaching platforms, online interactive courseware, and virtual reality technology not only greatly enriches teaching content and forms, but also enhances the interactivity and fun of learning. The application of these technologies enables learners to receive education anytime and anywhere, breaking through the limitations of time and space. At the same time, it also enables teachers to more accurately track and analyze students' learning progress, achieving personalized teaching. For cultivating maritime professionals with an international perspective and cross-cultural communication skills, digital empowerment not only changes the way they acquire

knowledge, but also opens a door to the world for them.

(2) Digitalization empowers the teaching application of maritime English courses

The maritime English course is different from vocational English. The innovation of this specialized English course cannot be limited to ideological level reforms such as teaching concepts, teaching models, and teaching methods, but also requires material level reforms such as teaching equipment, teaching forms, and teaching environment.

1) Digitalization of teaching scenarios

The STCW78/95 Convention of the International Maritime Organization and the Rules for the Qualification Examination, Evaluation, and Certification of Seagoing Ship Crew issued by the Maritime Administration of the People's Republic of China require graduates in the field of navigation to be proficient in using English to complete work tasks, express, communicate, negotiate, and cooperate in the driving position of ocean going vessels. The teaching scenarios mainly based on traditional classrooms and multimedia classrooms have relatively single functions and cannot arouse students' interest in learning. The interaction between students and teachers is relatively single, and it is also difficult to collect data in real-time for precise teaching. With the help of digital empowerment, the smart classroom, navigation simulator, radar training room, navigation instrument training room and multimedia training platform of navigation skill center built based on modern information technology such as Internet, big data and cloud computing have solved this problem well. Teachers can create corresponding scenarios based on the teaching content and incorporate interactive exploratory teaching practices, paperless exercises, and evaluations into teaching design. Not only does it promote the sharing, fast and efficient implementation of the entire teaching process, but it also helps to achieve situational and immersive learning experiences in maritime English classrooms. It not only enhances the creativity, experiential and inspiring nature of the teaching process, but also leverages deep changes in classroom teaching, innovates educational teaching and talent cultivation models, and truly embodies student-centered learning. The educational philosophy centered on student development and learning outcomes.

2) Digitalization of teaching content

Table 1. Digital Mode Diagram of Maritime English Course Teaching

Teaching Steps	Teaching methods and tools	Objective
Autonomous learning before class	PPT, MOOC, Virtual Simulation Platform, Learning Platform	Content digitization
Teacher's classroom explanation	PPT, MOOC, Virtual Simulation Platform, Learning Platform	Content digitization
Student project design	Learning Platform, Electronic Task Sheet	Content digitization
Project feedback evaluation	Learning Platform, Correction Network	Digital evaluation
After class expansion & review	Learning Platform, MOOC, QQ groups, etc.	Content digitization, evaluation digitization,

The main content of comprehension based teaching for professional vocabulary cognition and reading texts in maritime English courses. In the field of shipping, maritime English courses are not a simple supplement or extension of vocational English. Many professional terms and expressions in maritime English are closely related to maritime activities, ship operations, and the marine environment. In practical teaching, we need to ensure the accuracy and professionalism of language, as well as the authenticity and practicality of language use. Due to the particularity and complexity of the

course Maritime English, relying solely on textbook teaching is clearly not enough. Although there are many textbooks on maritime English on the market, there are still relatively few that can meet the various needs of students. Therefore, in the teaching process, in addition to using paper textbooks, teachers can also provide richer digital learning resources, such as self-made PPT courseware, online MOOCs, interactive learning platforms, etc., so that the learning process can be carried out anytime and anywhere. The specific application of teaching methods and digital methods

is shown in Table 1. Digital learning content also increases the fun and interactivity of learning, allowing students to explore the mysteries of the world of navigation while also experiencing the convenience and fun brought by technology, truly realizing the "student-centered" education concept advocated by the Ministry of Education. The concept of "education is society, and society is education" proposed by Minister Huai Jinpeng [5] is also applicable to maritime English courses.

Firstly, we should recognize the uniqueness of maritime English. This course requires students to be able to excel in language expression in their job positions, so it is crucial to improve their oral situational expression skills in daily teaching. However, due to the limitations of teaching hours, it is difficult to meet the needs of students in terms of oral output. Combining digital applications can effectively solve this problem, and students can effectively utilize the teaching cloud platform to upload oral output works in a timely manner. We can also introduce some interesting digital learning tools, such as virtual simulation technology. Students can conduct simulated training on sea navigation in virtual simulation software, which not only improves their English oral expression ability, but also enhances their practical operation ability and ability to cope with unexpected situations.

3) Digitalization of teaching evaluation

In terms of course evaluation, data-driven teaching evaluation can more finely depict the characteristics of teaching and learning between teachers and students, and make targeted improvements. Therefore, when teaching maritime English, we can also simulate practical operations such as ship navigation, cargo operations, and ship exercises through online platforms. Through real-time feedback and data analysis, we can improve teaching efficiency and effectiveness. By utilizing technological means to selectively promote teaching resources and services, we provide technical support for personalized teaching. Before class, we

can use digital education platforms such as Chaoxing Learning Platform to achieve hybrid and personalized teaching mode settings. The voting and other interactive modes on this platform can effectively stimulate classroom activity. Intelligent analysis of the data generated by the Chaoxing Learning Platform can help us understand the learning situation of students and adjust teaching strategies in the later stage. In the classroom, we can combine the use of correction websites for teaching. The intelligent grammar correction function of this system can help us conduct machine intelligent evaluation of students' language, content, discourse structure, technical specifications, etc., and combine it with human evaluation to promote feedback through machine evaluation. The establishment of a multidimensional evaluation system provides a professional solution for our digital evaluation. We can use methods such as information tracking and mining, digital backtracking analysis, scientific monitoring and evaluation, and based on the precise learning evaluation provided by big data to depict the learning trajectory of students, providing data support for implementing personalized educational programs and teaching guidance. This digital application will undoubtedly help reshape our education methods and make them more in line with the requirements of the times.

4. Digital Teaching Effectiveness

In order to evaluate the impact of digital empowerment of maritime English on teaching effectiveness, the author conducted a survey among freshmen and sophomores majoring in maritime technology using questionnaire and interview methods. The survey results indicate that the application of digital teaching mode in maritime English courses has gained widespread recognition among students, not only stimulating their enthusiasm for learning, but also achieving significant teaching results.

Table 2. Satisfaction with the Digital Empowerment Teaching Effect of Maritime English Curriculum

Digital Empowerment Methods	Teaching effectiveness	Degree of Satisfaction
Diversified digital teaching resources	Enriched teaching resources	80.3%
	Cultivated critical thinking ability	77.6%
	Increased occupational situational awareness and sense of identity	82.1%
Application of Teaching Cloud Platform	Improve learning efficiency	75.3%
	Clarify learning objectives	72.7%
	Improve the ability of self-directed learning	80.2%
Application of interactive mode in smart classrooms	Increased teacher-student interaction	89.3%
	Improved the fun of the course	90.4%
	Improved timely feedback	86.5%
Learning experience of virtual simulation training methods	Improved mastery of technical skills	78.4%
	Enhanced understanding of professional knowledge	77.3%

We also randomly selected a gradient portion of the students who participated in the teaching and conducted two group interviews, each lasting approximately half an hour. The interview mainly focuses on the application and impact of digital teaching mode in the teaching of maritime English translation courses. It was found that over 80% of students strongly agree with this diversified teaching model (see Table 2), believing that its teaching effectiveness far exceeds that of traditional language based learning models. At the same time, they also expressed that this teaching method has a significant help in improving their self-learning and innovation abilities,

and helps to expand their professional knowledge, which will also increase their work confidence in future performance. The digital application of teaching content in maritime English courses actually integrates traditional teaching methods with modern information technology, presenting and transmitting knowledge through digital technology. This approach can effectively improve teaching efficiency, enabling them to acquire more knowledge in a shorter period of time. The digital application of teaching content in maritime English courses also helps to enhance students' interest in learning. The digital teaching method helps them

to understand and master knowledge more intuitively through interaction, games, and other means, thereby enhancing their learning interest and motivation, achieving self-learning and self-improvement. They can learn anytime and anywhere through online learning platforms, without being limited by time and location. It can not only meet their personalized learning needs, but also help them engage in lifelong learning. The digital application of teaching content in maritime English courses is an important trend in the development of educational informatization. We should actively embrace this change, utilize digital technology, improve teaching efficiency, stimulate students' interest in learning, help them engage in lifelong learning, and promote the construction of a learning society.

5. Conclusion

The important role of digital empowerment in maritime English teaching cannot be ignored. By conducting comprehensive data analysis and application from learning resources, teaching content, teaching evaluation, and teaching expansion, digital empowerment of the entire teaching process can be achieved. It provides new possibilities for teaching with its unique advantages, resulting in a significant improvement in teaching effectiveness. However, this is not the finish line, but a new starting line. Looking ahead to the future, we look forward to the development direction of digital teaching in the field of maritime English becoming more diversified, precise, and personalized. We will embrace the new challenges and opportunities brought by digital teaching in the field of maritime English with a more open

mindset and professional competence.

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