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The Implementation Path of Digital Transformation of Foreign Language Curriculum under the Background of Artificial Intelligence

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Abstract: *This article takes the oral English course as an example to analyze the process of digital transformation of vocational foreign language courses under the background of artificial intelligence. The course integrates artificial intelligence into foreign language courses to achieve a versatile talent training goal of "foreign language+machine translation". The course builds a foreign language course resource platform centered on developing digital textbooks and constructing online courses. The course combines artificial intelligence and machine translation, develops a corpus of machine translation terminology, and promotes the deep development of school-enterprise cooperation and industry-education integration. This study has great significance for how to promote the digital transformation of vocational foreign language courses under the background of artificial intelligence.*

Keywords: *Artificial Intelligence; Digital Transformation of Foreign Language Courses; Machine Translation*

1. Introduction

The main problems in the digital transformation of English oral courses in vocational colleges currently include: 1. Most courses focus on social topics, lacking vocational knowledge and skills training, and unable to connect with job position requirements; 2. Traditional English listening and speaking courses are mostly taught in large classes, making it difficult to provide differentiated and personalized teaching based on the characteristics of different students; 3. The task-oriented mechanism of the course is not clear, and effective combination of course, competition and certification cannot be achieved; 4. The effectiveness of school-enterprise cooperation in traditional oral courses is not represented, and the conversion rate of students' achievements is low.

On the other hand, the development of artificial intelligence technology has a profound impact on the form of vocational education, and digital transformation has become a new trend for the development of vocational education. Various disciplines and majors are actively exploring the integration of artificial intelligence technology with their respective fields, promoting digital transformation through various forms such as MOOCs, micro courses, digital textbooks, virtual classrooms, and simulation laboratories. How to promote the digital transformation of foreign language courses under the background of artificial intelligence becomes urgent issues that need to be addressed. Scholars mainly focus on: the digital transformation and development of foreign language courses [1][2][3][4], the improvement of teachers' digital technology literacy[5][6], and the integration of classroom teaching with technology[7][8][9], exploring from different perspectives how to promote the digital transformation of foreign language courses and how to use artificial intelligence to achieve high-quality development of foreign language courses.

Based on this, this article will take English oral course as an example to explore the digital transformation of English oral courses in vocational colleges under the background of artificial intelligence.

2. Reshaping talent cultivation goals and innovating curriculum system

Based on a survey of the employment situation of graduates majoring in Applied English in vocational colleges and the development of the Machine Translation major, our school's Applied English major has reshaped its talent cultivation goals "machine translation+foreign affairs". The goal

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is to cultivate innovative talents who have international perspectives and cross-cultural communication skills, master machine translation techniques and methods and engage in foreign affairs management and service work.

To meet the requirements of machine translation positions and international trade positions, the 1+X Vocational Skill Certificate, and the National Vocational Skills Competition-English Speaking Competition, this major has built a curriculum system that integrates basic courses, core courses, on-campus practical courses, and off-campus practical courses around the machine translation positions and international trade positions. It has also added core courses such as computer-aided translation, translation technology and information retrieval, translation project management, and terminology management to help students understand the working procedures of artificial intelligence, be proficient in using machine translation tools, and develop corpus data.

The English oral course is divided into three modules: daily communication module, workplace communication module, and English speaking and debate module.

Daily communication module. This module aims to train students' daily communication skills and cross-cultural communication abilities and promote teaching and learning through competitions. Students have won awards in various competitions such as the Dubbing Competition. The curriculum integrates on-campus training venues and off-campus practice bases. The on-campus training venues include simultaneous interpretation training rooms and VR experience rooms. Our college has signed a school-enterprise cooperation agreement with Chaoxing Company and established an off-campus training base. Students complete projects designated by the company, including video dubbing, PPT production, and animation production, in order to achieve the integration of teaching content and production content, and gradually establish a three-level talent training system of "on-campus training-off-campus selection - enterprise task-driven", promoting the cultivation of skilled talents in this major.

Workplace communication module. This module aims to train students' business communication skills. By introducing enterprise work cases, it helps students master work processes and job skills, and exercises their business expression abilities. The course tells the stories of job interviews, business trips, market research, marketing strategies, and business negotiations in the international trade. It develops a loose leaf and school-enterprise cooperation textbook suitable for students at our university. The course implements a dual mentor system “school teachers+enterprise mentors, promotes enterprise mentors into the classroom, carries out a dual examination mechanism of "course assessment+enterprise project assessment", and cooperates with the school propaganda department, advertising company, and cultural and creative company through "on-campus practical training+off-campus practice training" dual channel to establish a college student innovation and entrepreneurship incubation base, and creates a three-level curriculum system of "course teaching+task management+innovation and entrepreneurship base" to promote the transformation and application of student achievements.

English speaking and debate module. This module aims to train students' English speaking and debating abilities, detailing English speaking skills such as the basic structure and rhetoric of speeches, as well as English debating skills including how to construct arguments, how to refute different types of arguments, and how to identify logical fallacies. It combines the English speaking competition of the National Vocational College Skills Competition with classroom teaching, promoting the integration of teaching, competition and certification.

The English oral course trains students' daily communication skills, business communication skills, and English speaking and debate skills, thus promoting the achievement of talent cultivation goals.

3. Establish school-enterprise cooperation and build a digital resource platform

Centered on the construction of ideological and political education, through three-level modules of daily communication, workplace communication, and English speaking and debate, the course aims to cultivate students' cross-cultural communication skills, vocational skills and English speaking and debate skills. The course combines classroom teaching with job requirements and skill competition, thus promoting the integration of curriculum, competition, and skill certificates.

3.1 Developing digital curriculum resources

The digital curriculum resources includes loose leaf and school-enterprise cooperation textbooks, as well as online courses. Firstly, the development of school-enterprise cooperation textbooks. In the daily

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communication module, students' daily communication skills are improved through "(pre class) topic introduction - (in class) listening and oral practices - (post class) group project presentation". In the workplace communication module, workplace work cases are integrated into classroom teaching to help students grasp work processes and job skills, and enhance their workplace communication abilities, through “(pre class) project driven - (in class) workplace case analysis - (after class) enterprise project completion". In English speaking and debate module, the course introduces cases of English speeches and debates, and enhances students' English speech and debate abilities as well as their critical thinking through "(pre class) case introduction - (in class) practice of English speech and debate skills - (after class) English speech and debate presentation".

Secondly, the construction of high-quality online courses. The course has established online course resources on the Chaoxing platform for development and use by teachers and students from our school and other institutions. On the basis, the course has developed a loose leaf and school-enterprise cooperation textbook suitable for students in our school. At the same time, we have collaborated with other vocational colleges and corporates to develop online course resources, expand the social service scopes of online courses, and achieve the unity of economic and social benefits of online courses.

Thirdly, the integration of artificial intelligence and digital curriculum resources. In recent years, there has been a heated discussion both domestically and internationally about the impact of artificial intelligence on education. Foreign scholars mainly focus on the risks and issues that ChatGPT may bring[10][11], potential ways for learners and teachers to apply GAI[12][13], and ethical norms for applying GAI[14]; Domestic scholars have discussed the impact of ChatGPT on foreign language teaching methods, independent learning, and the role of teachers[15]. This study will explore the application of artificial intelligence in the development of digital curriculum resources. Firstly, the digital textbooks and online course resources will use digital AI character images and VR devices to integrate daily communication scenarios and workplace production scenarios into English oral teaching. Through game challenges, students will be able to experience digital teaching, which thus enhances their interests in English learning. During the teaching process, AI is used to assist students in completing tasks such as article analysis, essay grading, and speech exercises, thereby improving students' classroom learning efficiency.

3.2 School-enterprise cooperation

This major visited several enterprises and signed school-enterprise cooperation agreements with companies such as Shanghai Yiyi Information Technology Co., Ltd. and Shanghai Huizhan Information Technology Co., Ltd. to accelerate the integration of industry and education. The course establishes a three-level talent training system "school teachers+enterprise mentors - on-campus practice base- off-campus student practice base ". Through the development of digital course resources, it promotes the blended teaching of online and offline, the formulation of talent cultivation plans, student innovation and entrepreneurship, and social services and corporate practices. The course introduces a value-added assessment mechanism. In addition to the diversified evaluation mechanism online and offline (such as machine scoring, student self-evaluation, group peer evaluation, and teacher evaluation), this course also includes student competitions, social practices, and enterprise projects in the final assessment, thereby promoting the transformation of student achievements and the integration of industry and education. This course has made great achievements in the competitions, social practice, and industrial project incubation. This course establishes a "1+1" training mode, which includes one week of on campus training and one week of off campus training. On campus training includes English speaking and debate training, business etiquette training and machine translation training; Off campus training includes varieties of volunteer activities and corporate practices. A total of 1240 students participated in volunteer activities such as the China Toy Fair, FHC Shanghai Global Food Exhibition and ABACE Airshow. The accumulated service time was over 4550 hours, achieving a close connection between the teaching process and the production process.

3.3 Create a Translation Service Center

Our school has signed school-enterprise cooperation agreements with multiple language service enterprises and institutions, including Shanghai Yiyi Information Technology Co., Ltd., Shanghai MaMa Translation Co., Ltd., Shanghai Yiguo Yimin Translation Service Co., Ltd., Shanghai Translation Publishing House, and Shanghai Foreign Language Education Publishing House, to jointly establish a vocational education translation center. The Translation Center adopts project-based teaching methods and a dual mentor system of "school teachers+enterprise tutors", using various

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technology tools such as translation software and data processing tools to help students complete projects designated by enterprises, including corpus data processing, translation file processing, thereby promoting the integration of industry and education.

Many scholars at home and abroad have conducted in-depth research on corpora. Granger established the first International Corpus of Learners English. At present, multiple learner corpora have been established, such as the Hong Kong University of Science and Technology Learner Corpus, Cambridge English Learner Corpus, National University of Singapore English Learner Corpus, HOO, HOO2012, CoNLL2013, CoNLL2014, BEA2019, Lang-8 Corpus, JFLEG。

At present, research on learner corpora mainly focuses on corpus annotation and automatic grammar error detection, such as the Global Chinese Interlanguage Corpus and CGED evaluation. CGED evaluation covers multiple training sets from TOCFL and HSK, providing recommendations for Chinese language teaching based on learners' evaluation data and error analysis. There is relatively little research on machine translation terminology spoken language corpora.

Based on this, this article plans to develop a machine translation terminology spoken language corpus from four aspects: (1) corpus collection. This research aims to collect corpus related to machine terminology, which includes professional terminology resource libraries such as Microsoft Terminology Database, BBC Corpus, Corpus Online, etc. The corpus will be saved in TXT format. (2) Corpus cleaning. We need to clean up blank characters, replace full width characters with half width characters, restore escaped characters to their original form, remove unnecessary punctuation marks in the text, and convert simplified and traditional Chinese language materials. (3) Corpus alignment. We need to use Tmxmall online alignment tool to segment and align machine translated terminology text materials. (4) Corpus annotation. This article uses TreeTagger, a free corpus annotation tool developed by Beijing Foreign Studies University, to annotate machine translation terminology spoken language corpus through a combination of automatic and manual annotation. This study selected "Machine Translation: Fundamentals and Models" as the data source for book annotation, and improved the annotation standards for machine translation terminology during the annotation process. The implementation process of corpus construction is divided into three stages: the first stage involves analyzing the characteristics of machine translation terminology books and materials, constructing a machine translation terminology knowledge annotation system, drafting a machine translation knowledge annotation specification, and developing annotation tools. In the second stage, experts and scholars independently annotate the machine translation terminology corpus, analyze the annotation results when they are inconsistent with the previous round's results, and update the annotation standards. In the third stage, the annotated data is filtered, the annotated model is automatically extracted, and the machine translation terms are formally annotated by classification and layering. After several rounds of annotation revisions, the raw data is randomly sampled and handed over to experts and scholars for annotation. Afterwards, the annotated samples are used for model training, and the constructed model and framework are revised to achieve optimal results. Finally, the algorithm and model of the constructed machine translation terminology corpus were optimized through system feedback and error correction. The machine translation terminology spoken corpus helps students master machine translation technology, promotes the achievement of curriculum technology education goals, and achieves the unity of curriculum learning and skill training.

4. Create a 'dual teacher' teaching team

The integration of artificial intelligence into foreign language teaching and the digital transformation of foreign language teaching will inevitably lead to the transformation of foreign language teachers. In foreign language teaching, AI has a massive knowledge reserve and rapid response ability, which can simulate English dialogue situations and provide efficient feedback to students. It has significant advantages and is gradually weakening or replacing foreign language teachers. Therefore, foreign language teachers must learn to effectively utilize AI technology tools to assist teaching. Sun Youzhong and Tang Jinlan proposed the "Four New" concept and the "Four Wheel" driving model, which promoted the development of foreign language teachers in Chinese universities in the era of artificial intelligence.[16] This study will explore the construction of a "dual teacher" teaching team in vocational colleges based on this foundation.

Firstly, establish a three-level "dual teacher" enterprise practice system of "national level, city level, school level". Through school-enterprise joint construction projects and government enterprise cooperation platforms, teachers are encouraged to practice on the front line of enterprise production,

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understand the development of new technologies and production processes, and enhance their practical abilities in their positions. The school should improve the assessment and reward mechanism for teacher enterprise practice projects, and enhance the enthusiasm of full-time teachers to participate in enterprise practice through various methods such as process management, target assessment, and evaluation incentives. The school should establish close connections with enterprises and research institutes, introduce a group of enterprise skill masters as part-time teachers, and form a dual mentor skill innovation team of "on campus teachers+enterprise mentors". Based on actual production needs and enterprise job requirements, school develops talent training plans with enterprises, introduces new technologies and production processes into classroom teaching and promotes the transformation of students' innovative achievements. Schools cooperates with enterprises to jointly develop loose leaf textbooks and jointly build and share digital teaching resources.

Secondly, improve the reform of teacher classification and hierarchical evaluation mechanism, and create a "dual teacher" teaching team that integrates "teaching competitions, scientific research innovation, and social services". The school should improve the selection and cultivation mechanism for teaching ability competitions, establish a "school level, city level, national level" teaching ability competition system, and enhance the enthusiasm and competitiveness of teachers to participate. The school should try to optimize the teacher structure of the participating teams, expand the coverage of the competition, widely attract young teachers, backbone teachers, senior teachers, and part-time teachers from other universities and enterprises to form cross-border teaching teams, fully leverage competition to promote teaching and mutual learning, and comprehensively improve the overall teaching level of the teaching team. The school should encourage frontline teachers to actively participate in various teaching ability competitions and student guidance skills competitions, and reward teachers who have won awards in teaching ability competitions, as well as those who have guided students to win awards in skills competitions. Teachers who have been approved for scientific research projects will be rewarded. The school needs to improve the evaluation and incentive mechanism. The school should be encouraged to incorporate high-level competitions into the evaluation criteria for professional and technical positions. The school should be encouraged to implement a competition award and research project performance sharing mechanism in the promotion of professional titles, and broaden the channels for promotion of professional and technical positions. The colleges should expand the channels for teachers' social services, include the number of social service personnel and the amount of revenue from horizontal scientific research projects in salary performance evaluation indicators, and carry out targeted social service work in various departments.

Thirdly, with obtaining vocational skills certificates as the core, establish a teacher evaluation and reward mechanism. The standard for measuring "dual teachers" is whether they have "dual certificates": one is to have a teacher qualification certificate; The second is to have a vocational qualification certificate. The school should provide a certain amount of subsidies to teachers who have obtained senior technician qualification certificates, and reimburse relevant expenses such as vocational skill appraisal fees, textbook fees, and training fees. In teacher evaluation and recommendation, obtaining vocational skill certificates will be included in the performance indicator system, and skill certificates will be clearly regarded as important evaluation indicators for talent project selection, professional title promotion, annual assessment, and employment period assessment.

5. Conclusion

This course has created a three-dimensional hybrid curriculum system of combining teaching ability competitions, National Vocational Skills Competition, 1+X Vocational Skill Certificate, enterprise practice base and scientific research. Through the construction of digital curriculum resources, the establishment of school-enterprise cooperation practice platforms, and the promotion of horizontal projects (such as the establishment of community senior colleges, the launch of vocational activity experience days, and the introduction of intangible cultural heritage into communities), it promotes the comprehensive development of hybrid curriculum teaching, student innovation and entrepreneurship, social services, enterprise practice, and industry-education integration, thereby achieving the unity of economic and social benefits of the course.

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