

Research on the Path of Developing Information Literacy of Teachers from Colleges of Foreign Languages from the Perspective of Artificial Intelligence

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Abstract. With the popularization of artificial intelligence in various fields, its application in the education industry has also been deepening. Based on the literature and experts' opinions on teachers' information literacy and the application of artificial intelligence in teaching, artificial intelligence is believed to provide more effective supports for the development of teachers' information literacy in foreign language colleges and universities. The research of this subject is expected to explore an effective path of developing the information literacy of teachers from colleges of foreign languages, so as to provide a useful reference for the further research.

Keywords: Artificial Intelligence; Teachers in Colleges and Universities; Information Literacy

1. INTRODUCTION

At present, the victory of AlphaGo, the success of unmanned driving, the breakthrough progress of pattern recognition, and the rapid development of artificial intelligence have stirred our nerves time after time. With the popularization of artificial intelligence in various fields, the application of artificial intelligence has also been deepening in the education industry. The integration of artificial intelligence and education is becoming increasingly obvious. Artificial intelligence technology represented by natural language processing, speech recognition, machine translation, image recognition, knowledge graph and machine learning, etc. can assist teachers to realize the diversification of teaching methods and maximize the teaching effect. In the meantime, it also poses new challenges and revolutions to teachers' information literacy. The application of artificial intelligence technology in education and teaching has become a common concern in academic circles.

According to the record of Baidu Encyclopedia, about 2.79 million relevant results related to the keyword "information literacy of college teachers" can be found, which shows that relevant research is at the forefront of academics. Li Xiaoxiang, et al. (2016) believed that college English teachers should have strong information awareness, rich information knowledge and skilled information skills under the noble information ethics and ethics standards, and excellently integrate information technology into the information literacy of English teaching. [1] Liu Yawen et al. (2018) studied the application of artificial intelligence technology in experimental teaching, English teaching, and university

management, and explored the application of artificial intelligence technology in various development trends, such as student learning analysis, teacher's personalized education, assisting or guided teaching, and the exchange of the role of teachers and students. They pointed out that artificial intelligence can not only promote the improvement of students' learning ability, assist the development of teachers' teaching ability, but also enhance the school's teaching management ability. [2] Xu Lixing (2019) pointed out in his research that the premise of teaching design is the analysis of teaching needs. The introduction of artificial intelligence can help teachers analyze the learning characteristics and learning needs of students. By analyzing a large number of data samples, artificial intelligence can help teachers clarify their teaching goals, improve teaching efficiency and teaching quality. [3] "Ministry of Education's Work Points in 2019" proposed to promote the in-depth integration of information technology, education, and teaching, boost the transformation and upgrading of education informatization, and enhance the information literacy of teachers and students. [4] At the 2019 National Education Informatization Work Conference, Zhong Denghua, Vice Minister of Education, delivered a theme report on "Promoting Education Informatization 2.0 to Develop Fairer and Higher Quality Education", emphasizing on accelerating the leapfrog development of educational informatization 2.0, strengthening the training to improve the information literacy of teachers. [5] At the end of 2019, a novel coronavirus epidemic broke out in Wuhan, and the fight against the novel coronavirus pneumonia epidemic across China was cruel and tragic. Under the call of the Ministry of Education to suspend classes without stopping teaching and learning, online education ushered in a flourishing era and live teaching attracted tremendous attention. Also, the advantages of micro-classes and MOOCs were highlighted. In this large-scale online teaching process, many problems, for example, panic in skills and technologies were worthy of our attention and discussion. The key to solving these problems lies in the improvement of teachers' information literacy. Hence, it is of great significance to focus on important practical issues in the construction and development of online course resources in colleges and universities, and select a path of developing information literacy of teachers from foreign language colleges and universities for research.

2. ARTIFICIAL INTELLIGENCE CAN PROVIDE TECHNICAL SUPPORT FOR FOREIGN LANGUAGE COLLEGE TEACHERS

TO IMPROVE THEIR THE INFORMATION LITERACY

Artificial intelligence is an emerging intelligent technology. Its technical functions such as language understanding, speech recognition, and machine translation demonstrate sound effects in the process of language learning. Artificial intelligence can not only accurately recognize multiple languages, but also quickly give feedback to achieve real-time translation, providing convenience for language learning. With the help of social and economic development, artificial intelligence technology has gradually been popularized in various fields, and it has also brought an impact on the development of foreign language teaching. The education of artificial intelligence is the general trend of educational development, and the future education model will certainly deepen the integration of artificial intelligence education and traditional education. The outstanding teachers in the future would certainly be the teachers who are good at using artificial intelligence technology. The education in the future will certainly be the education of the coexistence of man and machine.

2.1. Artificial Intelligence Technology can Effectively Integrate with the Foreign Language Teaching Process to Provide Intelligent Teaching Design.

The application of artificial intelligence technology can not only perform in-depth analysis and accurate judgments on various problems in the foreign language teaching process, but also analyze the problems and formulate solutions and make effective suggestions, such as simulating human pronunciation, correcting students' pronunciation problems; forming a diagnosis report according to the language test results, discovering students' learning abnormalities and knowledge weaknesses in time, and then providing targeted teaching interventions and psychological counseling, and providing students with reference learning suggestions to promote the improvement of comprehensive foreign language skills.

2.2. Artificial Intelligence can Offer Personalized Learning Support Services.

Human teachers and intelligent teachers will help students improve the quality of learning in different dimensions (see Table 1), and students will get more effective learning interaction and support.

2.3. Artificial Intelligence Technology can Provide Data-based Teaching Management Services.

With the implementation and improvement of online courses, the development of teacher and student teaching activities will generate a large amount of teaching data. By adopting artificial intelligence technology to conduct an in-depth mining and analysis of teaching management data, teachers can better grasp the full-cycle learning performance of students and improve the effectiveness of distance learning management.

2.4. Artificial Intelligence Technology can Provide Accurate Resource Recommendations

The recommendation technology of artificial intelligence can automatically push learning resources, reduce students' query time and information load, help students accurately obtain learning resources that meet their own abilities and

levels, assist students to quickly understand and master learning content, and improve learning efficiency. ^[6]

Table. 1 Comparison of learning support functions between artificial intelligence and human teachers.

Learning Support Comparative Dimension	Artificial Intelligence	Human Teacher
Learning Environment	Mobile Terminal, Virtual Device, Internet	Classroom, Outdoor
Resource Recommendation	Adaptive Adjustment and Push	Suggestions Based on Teaching Experience
Learning Supervision	Big Data Analysis, Intelligent Perception and Feedback	Talk, Supervision, Sense of Responsibility
Learning Costs	Low	High
Interactivity	Voice and Text Recognition, Large-scale One-to-one Interaction	Face-to-face Conversation, Limited Scope of Communication and Interaction
Knowledge Base	Large-scale Domain Knowledge Map	Professional Knowledge and Personality Charm

a. Sample of a Table footnote. (Table footnote)

3. EFFECTIVE WAYS TO DEVELOP INFORMATION LITERACY OF FOREIGN LANGUAGE COLLEGE TEACHERS FROM THE PERSPECTIVE OF ARTIFICIAL INTELLIGENCE

3.1. Construct a Smart Education Environment

Colleges and universities should increase investment in hardware equipment, promote the construction of a smart education environment, and help teachers conduct independent inquiry learning. Smart education environment can be divided into traditional education environment and online education environment, as shown in Figure 1, and the full name and corresponding abbreviation are shown in Table 2. Artificial intelligence technology can collect or perceive learning environment information, provide intelligent learning guidance, interaction and support services, and the information literacy of foreign language college teachers will be improved in the application of smart education environment.

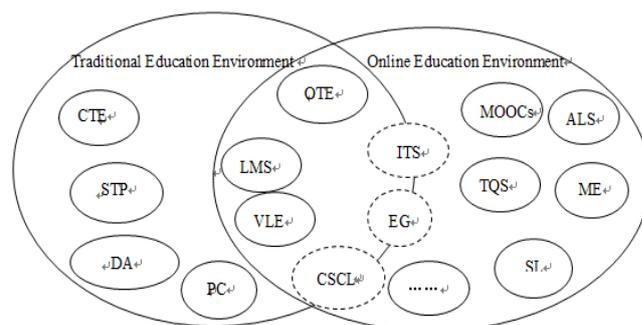


Fig. 1 Diagram of the smart education environment..

Table. 2 Full Names of the Abbreviations

Abbreviations	Unabbreviated form
CTE	Closed Teaching Environment
STP	Stand-alone Teaching Platform
DA	Desktop Applications
PC	Personal Computer
OTE	Open Teaching Environment
LMS	Learning Management System
VLE	Virtual Learning Environment
ITS	Internet Teaching System
EG	Educational Games
CSCL	Computer Supported Cooperative Learning
MOOCs	Massive Open Online Courses
TQS	Transaction Query Subroutine
ALS	Automated Location System
ME	Mobile Environment
SL	Social Learning

a. Sample of a Table footnote. (Table footnote)

3.2. Establish a Sound Standard for Teacher Information Literacy Training

To provide data references for teachers' information literacy evaluation, the information literacy requirements for teachers are formulated through the standard system. The training of information literacy for teachers mainly includes the wisdom of teachers' education concepts, the training of relevant professional knowledge, artificial intelligence technology skills, organizational capabilities, and evaluation systems. The work content is divided into multiple levels, and the information literacy evaluation indicators for teachers are formulated, so as to set up a scientific and standardized information literacy standard for teachers under the smart education system.

3.3. Set up a Teacher Assessment and Evaluation Mechanism Based on Big Data Technology

The assessment and evaluation of teachers empowered by artificial intelligence technology tends to be multi-dimensional and comprehensive. Big data intelligent analysis technology is used to collect, organize, integrate and analyze teachers' online teaching activity data, and conduct diversified classification assessments. The performance appraisal results of artificial intelligence technology application ability can be linked with appointment, promotion and evaluation, etc., so as to encourage teachers to practice technology in teaching, scientific research and management.

3.4. Speed up Information Literacy Training for Teachers

The content of information literacy training for teachers is divided into sections, and professional courses are designed according to the skills of the sections. According to the teacher information literacy training plan formulated in the previous period, the research on teaching materials under the smart teaching system is strengthened and the

corresponding training system projects are carried out. The existing education and teaching platform is utilized to transfer professional knowledge, and teachers' use of skills is enhanced in the intelligent education platform, so as to meet the overall development requirements of teachers' comprehensive quality.

3.5. Increase Investment and Support for Research on the Integration of Artificial Intelligence and Foreign Language Teaching

Scientific research is one of the basic functions of a university, and it is also an effective way to cultivate and improve teachers' information literacy. In terms of research content, the innovation and application of the integration of artificial intelligence and foreign language teaching are strengthened, and due attention is given to the cutting-edge issues of AI + online education applications, so as to promote the publicity and construction of artificial intelligence applications.

Artificial intelligence technology will exert a profound impact on the knowledge transfer, teacher-student relationship, teaching and research, and education management of universities in the future. Teachers should take the initiative to improve information literacy and promote their own development to adapt to the various changes brought about by the new technologies and the new era. To explore an effective way of developing teachers' information literacy, it is expected to provide a useful reference for further research on information literacy of teachers from colleges of foreign languages.

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