PROCEEDINGS ARTICLE

Research on the Improvement of Teachers' Digital and Artificial Intelligence Literacy under the Background of the Establishment of Multidisciplinary Interdisciplinary Talent Training System

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Abstract

The promulgation of the standard "Teachers' Digital Literacy" is of far-reaching significance. Its goal is to encourage teachers to improve their comprehensive abilities in an all-round way in the digital age, so that they can skillfully use digital technology to optimize, innovate and change education and teaching activities. At present, colleges and universities shoulder an important mission, and it is necessary to explore practical and effective measures and methods to comprehensively improve teachers' overall digital literacy. The purpose of this paper is to study how to deal with the challenges and opportunities brought by the digital age and the rapid development of artificial intelligence technology to the field of education, and to improve teachers' digital and artificial intelligence literacy through in-depth discussion and practice, so as to optimize educational and teaching activities and promote educational innovation and development.

Keywords: Digital Age; Artificial Intelligence Technology; Teachers' Digital Literacy; Education and Teaching

1. INTRODUCTION

In recent years, artificial intelligence technology has developed rapidly, especially generative artificial intelligence has swept the world, and the field of education has ushered in unprecedented changes and opportunities. In this context, in order to enhance teachers' awareness, ability and responsibility to use digital technology to optimize, innovate and transform educational and teaching activities, the Ministry of Education issued "Teacher Digital Literacy" on November 30, 2022, and implemented it on the same day [1]. Under the background of "improving teachers' digital and artificial intelligence literacy", how to improve teachers' digital and artificial intelligence literacy has become an urgent topic for colleges and universities. In view of this "topic", this article discusses from the following aspects, hoping to provide practical and effective measures, methods and positive and valuable suggestions for colleges and universities to comprehensively improve teachers' overall digital and artificial intelligence literacy.

2. N-DEPTH INTERPRETATION AND ANALYSIS OF TEACHERS' DIGITAL LITERACY

"Teacher Digital Literacy" is an education industry standard issued by the Ministry of Education to promote educational modernization and the deep integration of information technology in the field of education. This standard clarifies the framework of teachers' digital literacy, and clarifies the digital literacy that future teachers should have from five dimensions [2] , namely:

2.1. Digital Awareness

Digital awareness is the foundation of teachers' digital literacy. Teachers need to have a forward-looking vision, be able to foresee and adapt to these changes, and actively learn and master digital technology to meet the challenges of future education [3] .

2.2. Digital Technology Knowledge and Skills

Knowledge of digital technology is the basis for teachers to master digital technology. It requires teachers to understand the concepts and basic principles of some common digital technologies, such as the connotation characteristics of big data, artificial intelligence, virtual reality and other technologies, as well as their procedures and methods in solving problems. This knowledge helps teachers to better understand the essence and application scenarios of digital technology, and provides strong support for the application of digital technology. For example, teachers need to choose appropriate digital teaching equipment, software or platform according to education and teaching application scenarios and teaching needs; At the same time, it is also necessary to be able to skillfully use these devices, software and platforms to carry out educational and teaching activities and solve common technical problems [4] .

2.3. Digital Applications

Digital application requires teachers to analyze learning situation, obtain and manage digital educational resources, design digital teaching activities and create mixed learning environment. For example, teachers can use intelligent terminal devices to support the effective organization and management of teaching activities; Improve teaching links based on student feedback through online teaching activities; Use digital technology to support individualized teaching, etc.

2.4. The Dimension of Digital Social Responsibility

Digital collaborative education is a process in which teachers use digital technology resources to realize home-school co-education and promote students' all-round development. Among them, the moral code of rule of law is the basic code of conduct of teachers in the digital society. These codes of conduct help to maintain the clarity and order of cyberspace and promote the healthy development of digital education.

2.5. Professional Development Dimension

In the digital age, teachers need to establish the concept of lifelong learning, constantly track the frontier of educational technology, update educational ideas and teaching methods to meet the needs of educational reform and development. For example, teachers can use multimedia teaching tools to create teaching situations; Use online platforms to organize cooperative learning; Use data analysis tools to evaluate students' learning effectiveness, etc.

3. EFFECTIVE MEASURES AND METHODS FOR COLLEGES AND UNIVERSITIES TO IMPROVE TEACHERS' OVERALL DIGITAL AND ARTIFICIAL INTELLIGENCE LITERACY

Teachers are the core of talent training in colleges and universities. Therefore, colleges and universities should make efforts in the following aspects.

3.1. Strengthen the Construction of Hardware Infrastructure

Hardware facility guarantee is the fundamental guarantee for improving the overall digital and artificial intelligence literacy of college teachers. Therefore, colleges and universities should increase capital investment in the purchase of hardware facilities, and equip corresponding technical personnel while purchasing equipment. In addition, colleges and universities can also conduct in-depth cooperation with science and technology enterprises, master the information of the latest hardware facilities, invite science and technology enterprises into the campus, explain the use of the latest hardware to teachers, and provide teachers with all-round practical opportunities.

3.2. Strengthen the Construction of Teacher Training System

As each university has its own actual situation, when improving teachers' digital and artificial intelligence literacy, colleges and universities should first combine their own actual situation, analyze their advantages and disadvantages in digital literacy cultivation, design specific plans, and strengthen the construction of teacher training system. For example, offer systematic digital literacy courses, covering digital technology applications, online teaching methods, etc.; Set up artificial intelligence training workshops and invite industry experts to give lectures and guidance, so that teachers can have an in-depth understanding of the application scenarios and potential of artificial intelligence in education; At the same time, build a digital teaching practice platform, encourage teachers to actively participate, and transform theoretical knowledge into practical teaching ability; Furthermore, establish an incentive mechanism to commend and reward teachers who have performed well in improving digital literacy, and stimulate teachers' enthusiasm and initiative [5] .

3.3. Build an All-Round Teaching and Research Community

Integrating digital literacy training into teachers' daily teaching and scientific research work and forming a normalized promotion mechanism is the best way to improve the overall digital and artificial intelligence literacy of college teachers. Therefore, building a cross-school, cross-regional, and interdisciplinary teaching and research community, allowing artificial intelligence to provide teachers with a high-quality educational platform and become an advanced teaching tool is the only way to build an all-round teaching and research community. For example, schools can invite relevant information technology personnel to develop artificial intelligence courses and learning resources suitable for teachers, including teaching materials, case libraries, online learning platforms, etc., and strengthen the co-construction of collaborative knowledge bases by praising schools, cross-regional, interdisciplinary and other ways, focusing on cultivating students' ability to comprehensively use multi-disciplinary knowledge to solve problems in different situations, making teaching methods more flexible and teaching horizons wider. Students can "listen" to the lectures of big coffee makers from a long distance.

3.4. Incorporate Teachers' Digital and Artificial Intelligence Literacy into the Teacher Assessment System

In order to better implement and improve teachers' digital and artificial intelligence literacy and encourage teachers' continuous exploration and practice in the field of digital and artificial intelligence, colleges and universities should incorporate teachers' digital and artificial intelligence literacy into the year-end teacher assessment standards. For example, colleges and universities can consider giving extra points to teachers who perform well in the fields of digital and artificial intelligence when evaluating and selecting key teachers; In professional title evaluation and professional development evaluation, the weight of teachers' digital and artificial intelligence literacy can be added.

4. THE NECESSITY OF IMPROVING TEACHERS' DIGITAL AND ARTIFICIAL INTELLIGENCE LITERACY

The rapid development of digital technology and artificial intelligence is quietly changing the pattern of higher education in China. Actively promoting the integration and development of education and teaching, digital technology and artificial intelligence, and improving teachers' digital and artificial intelligence literacy are inevitable requirements for college education. This paper will take the integration of "Northeast Anti-Alliance Spirit" into the ideological and political content of the curriculum and the construction of a "multidisciplinary interdisciplinary talent training system" as examples to fully expound the necessity of improving teachers' digital and artificial intelligence literacy.

4.1. "Northeast Anti-Alliance Spirit" is Integrated into the Ideological and Political Content of the Curriculum and the Application of Artificial Intelligence

As the earliest anti-Japanese armed force with the most difficult conditions and the longest duration under the leadership of the Communist Party of China (CPC), the Northeast Anti-Japanese Allied Forces experienced the longest and most tragic 14-year anti-Japanese struggle. The Northeast

Anti-Alliance Spirit is the representative of the indomitable national spirit of the Chinese people to resist Japanese aggression, the precious wealth of the Chinese nation, and the important content of the ideological and political curriculum. Making full use of and giving full play to the advantages of digital technology and artificial intelligence, and integrating the spirit of the Northeast Anti-Alliance into the ideological and political education of colleges and universities more vividly and vividly, will undoubtedly publicize and carry forward the spirit of the Northeast Anti-Alliance and deepen patriotic education. It will bring the greatest benefits. This requires college teachers to have good digital and artificial intelligence literacy.

In the history of War of Resistance against Japan, China, the Northeast Anti-Japanese Alliance is an eternal topic. With the collation and in-depth excavation of literature and historical materials, China has accumulated a large number of fruitful research results in the research field of Northeast Anti-Japanese Alliance. Making full use of digital and artificial intelligence technologies to show these rich achievements vividly and vividly to students in the classroom is the best way for students to have a deep understanding of the Northeast Anti-Union soldiers who surpass human limits, serve difficulties and obstacles in customer service, and resist foreign invasion bravely and unyielding. It is also the best way to publicize and carry forward the Northeast Anti-Union spirit and carry forward patriotism. For example, in 2021, the big data construction project of the Northeast Anti-Japanese Alliance Historical Facts Exhibition Hall was launched. The project scanned 200GB of propaganda works about the historical facts of the Northeast Anti-Japanese Alliance, produced 45GB of two-dimensional videos, and produced 10 issues of red anti-Japanese alliance stories; At the same time, the Northeast Anti-Union Historical Facts Exhibition Hall has completed the establishment of cultural resource classification data set on the bottom association inheritance system of the national cultural big data system, imported data materials such as panoramic photos and 3D modeling of six exhibitions, and obtained ISLI codes [6] . Teachers in colleges and universities can "find" the above information through big data, and show the above information to students in class through digital and artificial intelligence technologies, so that students can be there, feel the real situation of the Northeast Anti-Union fighters resisting foreign invasion, perceive the indomitable heroic spirit of the Northeast Anti-Union fighters who are not afraid of sacrifice, have a deeper understanding of the greatness of the Northeast Anti-Union spirit, and truly see the outstanding contribution made by China under the leadership of the Communist Party.

4.2. Construct a "Multidisciplinary Interdisciplinary Talent Training System" and the Application of Artificial Intelligence

Today, with globalization and increasingly frequent international exchanges, the cultivation of young talents with "international competence" is a new requirement for colleges and universities. In the new era of building Community of Shared Future for Mankind and developing new productive forces, college education should cultivate "multidisciplinary interdisciplinary talents" with national feelings, global vision, ability to expand cultural communication, and ability to solve complex interdisciplinary problems. This requires better integration of various resources in different disciplines, strengthening the mutual penetration and intersection of disciplines by breaking the boundaries of disciplines, and fully blending the ideas of various disciplines. Artificial intelligence and digital technology just meet the needs of the "multi-disciplinary interdisciplinary talents" training system. This requires teachers to have certain digital and artificial intelligence literacy. For example:

First, in the design and optimization of the multi-disciplinary cross-curriculum system, teachers are required to make use of digital and artificial intelligence technologies, achieve advanced layout, integrate existing curriculum resources, and build a comprehensive curriculum system covering multi-disciplinary fields while avoiding simple superposition of curriculum content, so as to realize the organic integration of multi-disciplinary courses with professional courses as the mainstay.

Secondly, in terms of innovative teaching methods and means, teachers are required to make full use of digital and artificial intelligence technologies to explore methods suitable for interdisciplinary teaching. For example, through project-based learning, problem-oriented, team collaborative learning, etc., students' foreign language application ability can be improved, and the core value elements of national feelings can be integrated into the whole process of training, so that students can not only have

cross-cultural communication skills, but also master the most cutting-edge international development trends, enhance students' leadership, and stimulate students' learning interest and innovation ability.

Thirdly, in terms of strengthening practical teaching, teachers are required to make full use of digital and artificial skills, establish interdisciplinary practical teaching platforms efficiently and quickly, and make good use of international and domestic platforms to carry out comprehensive practical projects, such as: (1) Increase internship opportunities: recommend students to practice in multinational enterprises, government departments, foreign-related institutions, etc.; (2) Increase international exchange programs and actively build international exchange platforms: organize students to visit international organizations and academic institutions for short-term visits and exchanges, and attend international academic conferences; (3) By simulating and solving relevant international dispute cases, improve students' relevant skills in handling international affairs, and cultivate students' ability to solve practical problems and interdisciplinary practical skills.

5. CONCLUSION

With the development of digital technology and artificial intelligence, learning is no longer limited to traditional classrooms. Intelligent platforms and interdisciplinary and cross-regional learning have become new trends in teaching and scientific research in colleges and universities. This paper starts with an in-depth interpretation and analysis of Teachers' Digital Literacy promulgated by the Ministry of Education, and elaborates on the effective measures and methods to improve teachers' overall digital and artificial intelligence literacy in colleges and universities. Taking the integration of the "Northeast Anti-Alliance Spirit" into the ideological and political content of the curriculum and the application of artificial intelligence, the construction of a "multidisciplinary interdisciplinary talent training system" and the application of artificial intelligence as examples, this paper analyzes in detail the necessity of improving the digital and artificial intelligence literacy of college teachers. Under the background of the establishment of a multidisciplinary interdisciplinary talent training system, it is expected that the discussion in this article can provide a positive and useful reference for colleges and universities to improve teachers' digital and artificial intelligence literacy.

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