Research on the Application of Artificial Intelligence in Ideology and Politics Class

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Abstract. This paper takes the application of artificial intelligence technology in ideological and political classes as the research object, and discusses its application scenes and modes, status quo and effect, problems and strategies. It is found that there are three main application scenes and modes of AI technology in ideological and political classes, namely, intelligent classroom, intelligent counseling and intelligent evaluation, and these applications can enhance the teaching effect of ideological and political classes and cultivate students' ideological and political literacy, but they also face problems and risks in terms of data security, subject status, emotional interaction and educational value. It is recommended to strengthen teachers' cognitive and application ability of AI technology, build a teaching mode for the integration and development of AI and ideological and political classes, and strengthen the management and supervision of the application of AI technology to promote the healthy development of AI technology in ideological and political education.

Keywords. Artificial intelligence; ideology and politics class; application research

1. Introduction

Artificial intelligence technology refers to the technology of using computers and other devices to simulate human intelligence, which has powerful functions of data processing, information acquisition, knowledge construction and decision optimization, and can be widely used in various fields and industries[1]. In recent years, with the rapid development and popularity of AI technology, the education field has also begun to explore and try to use AI technology to reform and innovate educational concepts, educational contents, educational methods and educational evaluation in order to improve the quality and efficiency of education and meet personalized and diversified educational needs.

The ideology and politics class is a compulsory basic course in school education, which has an important role and significance in realizing the national will and transmitting the national culture. However, in the current social context, ideology and politics classes are facing some new challenges and dilemmas, such as students' diversified ideas, diverse values and individualized learning styles, and students' interest and participation in ideology and politics classes are not high.Therefore, how to use artificial intelligence technology to improve the teaching quality and effectiveness of ideology and politics classes and stimulate students' interest and initiative in learning ideology and politics has become an urgent research problem to be solved.

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2. Overview of Artificial Intelligence Technologies

2.1. Definition and evolution of artificial intelligence technology

Artificial intelligence technology is the science and engineering of using computers to simulate, extend, and expand human intelligence[2].

Simulation: AI technology mimics human perception, reasoning, learning, decision-making and other intelligent behaviors through computer programs and algorithms, enabling computers to handle complex problems and tasks.

Extension: AI technology enhances human intelligence through computer hardware and software, enabling humans to transcend their limitations and barriers and achieve more efficient, optimal, and innovative goals.

Expansion: AI technology extends the scope of human intelligence through computer networks and the Internet, enabling humans to cross the limits of space and time to achieve wider, deeper, and more diverse communication and cooperation.

Artificial intelligence technology is an advanced technology based on computer applications, which means that computers "own" the human mind and operate to simulate, extend, and expand human intelligence without much human intervention. It is also a branch of computer science that attempts to understand the essence of intelligence and produce a new intelligent machine that can respond in a similar way to human intelligence, and research in this field includes robotics, language recognition, image recognition, natural language processing and expert systems. It is a machine technology that enables the study of human intellectual behavior by building computer models and is creative according to the human thought process.

The development history of artificial intelligence technology can be divided into the following stages. In the 1950s, the concepts and theories of artificial intelligence began to appear, such as Turing test, logical reasoning, etc. In the 1960s, the research of artificial intelligence entered a boom period, and some important results appeared, such as language translation, expert systems, etc. In the 1970s, the research of artificial intelligence encountered some difficulties and challenges, such as knowledge representation. In the 1980s, the research on AI re-emerged, and some new methods and techniques emerged, such as neural networks, genetic algorithms, etc. In the 1990s, the research on AI began to intersect and integrate with other fields, and some new applications and fields emerged, such as robotics, data mining, etc. From the 2000s to the present, the research on AI has entered a period of rapid development and innovation, and Some breakthrough results and influential applications have emerged, such as deep learning, natural language processing, computer vision, etc.

2.2. The main characteristics of artificial intelligence technology

Artificial intelligence technology is an advanced technology that simulates, extends and extends human intelligence, which has the following main characteristics.

2.2.1 Autonomy

AI systems are able to learn, reason and make decisions to a certain extent autonomously without human intervention and control.

2.2.2 Adaptive

AI systems can adjust and optimize their own models and strategies to adapt to different tasks and scenarios according to changes in the environment and data.

2.2.3 Intelligent interaction

AI systems can interact intelligently with humans through technologies such as natural language processing, speech recognition and image recognition to provide a more friendly and convenient user experience. Big data processing capability: AI systems have powerful data processing and analysis capabilities, and can process large amounts of complex data to explore the laws and values there in[3].

2.2.4 Cross-border integration

AI technology can be integrated with other fields such as physics, biology, medicine, social sciences to create new application scenarios and values.

2.2.5 Human-machine synergy

AI technology can form an effective collaborative relationship with humans to achieve complementary advantages and collaborative innovation.

2.2.6 Autonomous intelligence

AI technology can realize self-control, evaluation and correction of its own behavior, goals and values to form a higher level of intelligence.

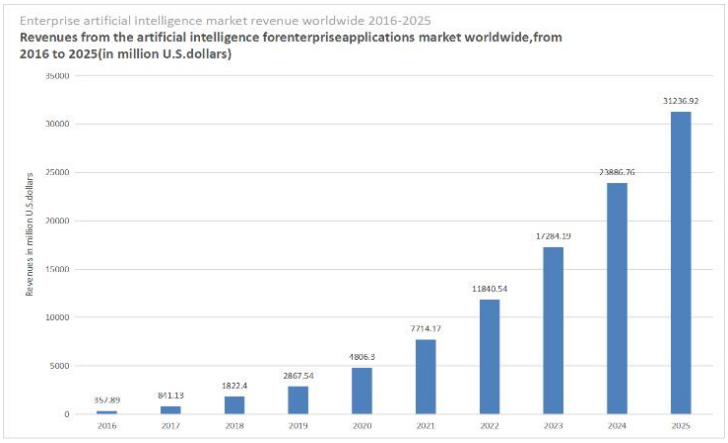

Fig. 1. (Source From Creation) Global Enterprise Application Artificial Intelligence Market Revenue, 2016 to 2025

As shown in Figure 1, the above data shows that with the rapid development of society, the application of artificial intelligence is rapidly expanding and the market revenue is increasing year by year, while providing the technical basis and huge market space for the application and development in the field of education.

3. The Current Situation of the Application of Artificial Intelligence in the Ideology and Politics Class.

3.1. Application of artificial intelligence in education

The application of artificial intelligence technology in education refers to the use of artificial intelligence technology, such as natural language processing, speech recognition, image recognition, machine learning, to assist or improve the process and effect of education and teaching. In a survey on the current status of AI teaching applications for college teachers, 96.78% of teachers have heard of AI teaching applications, 67.14% support the use of AI in daily teaching to improve the quality of teaching, and 65% of teachers believe that AI has a good prospect for development in the future teaching field.

The applications of artificial intelligence technology in education are mainly as follows.

3.1.1 Intelligent tutoring

AI technology can recommend appropriate learning content and teaching methods based on students' learning data to improve students' learning efficiency and results.

3.1.2 Personalized education

AI technology can design personalized teaching plans and materials based on students' interests, abilities and learning situations to help students better master their knowledge.

3.1.3 Intelligent assessment

AI technology can provide more accurate assessment and feedback by analyzing students' answers to help students find and correct their mistakes in a timely manner.

3.1.4 Intelligent interaction

AI technology can provide a more friendly and convenient user experience by interacting intelligently with students through technologies such as natural language processing, speech recognition and image recognition.

3.1.5 Innovation education

AI technology can cultivate students' creative thinking and innovation ability and stimulate their creative potential and enthusiasm.

3.2 Application of artificial intelligence in ideology and politics classes

The application of artificial intelligence in ideological and political science classes is realized through virtual simulation technology, such as three application scenarios and modes of

intelligent classroom, intelligent counseling and intelligent evaluation, smart classroom, smart tutoring and smart evaluation are important components of the digital transformation of education, and their realization needs to rely on artificial intelligence technology, which can use virtual reality (VR), augmented reality (AR), mixed reality (MR) and other technologies to build realistic virtual scenarios, allowing students to feel and participate in the relevant content of ideological and political science classes through immersion. The application in different classrooms can lead to a significant improvement in the quality of teaching and can redefine a new paradigm of theory teaching.

Among them, the data analysis model of artificial intelligence in the Civics course can be used to help teachers and students better understand, analyze and apply the data in the Civics course.

(1) Theme model: using the big data analysis capability of AI, it helps teachers extract the lecture themes in the Civics and Political Science course, diversify the design of the teaching form, grasp the teaching focus, and adjust the teaching content.

(2) Learning Behavior Analysis Model: Through students' learning behavior data, such as the learning time, browsing times, and homework submissions of students in the Civics course in learning software such as Rain Classroom, we analyze the students' learning habits and learning effects, and conduct personalized analysis of each student, and provide teachers with the mastery of the course, so that it is easier for teachers to formulate a teaching format that meets the needs of the students.

(3) Social network analysis model: By collecting data on students' interactions on online learning platforms or mainstream social media such as WeChat, an analysis model is constructed to explore the degree of interactions and changes in students' thoughts about the Civics class, and to give teachers guiding suggestions for designing teamwork and group discussions in the Civics classroom.

(4) Teaching assessment model: Using the classroom student performance data and feedback during the semester, a teaching assessment model is built to assess the teaching effect of teachers in the Civics classroom from multiple dimensions, such as student learning outcomes, and provide Civics teachers with suggestions for improvement and optimization in subsequent courses to improve the quality of teaching.

Based on machine learning, deep learning, data mining and other technologies, AI provides teachers with useful guidance for decision-making and promotes the in-depth development of Civics education by analyzing and modeling student data in Civics courses.

3.3. Analysis of the effect of the application of artificial intelligence in ideological and political science classes

The deep integration of artificial intelligence and education is an important direction for educational change and innovation in the new era, and an effective way to improve the teaching quality and effectiveness of ideological and political courses.

First, improve the personalization and precision of ideological and political science class teaching. Students' learning data can be collected and analyzed to achieve personalized and

accurate pushing for students, so as to provide highly targeted, adaptable and interactive ideological and political science class teaching contents and services[4].

Second, enriches the form and method of teaching ideological and political science classes. Through the use of virtual reality, augmented reality, voice recognition, image recognition and other technologies[5]. It can create diversified, three-dimensional, immersive ideological and political science class teaching scenes and environments, thus enhancing the image and infectious power of ideological and political science class teaching. Taking the Learning Power APP as an example, as of December 2022, the total number of registered users of the platform "Learning Power" has exceeded 300 million, and the daily reading volume has remained at 800 million to 1 billion[6], which indicates that the teaching of ideological and political lessons has entered daily life in an easy way, and is not only confined to the classroom.

Third, enhance the intellectual and scientific teaching of ideological and political science class. Intelligent management and scientific assessment of ideological and political science class teaching can be achieved through the use of big data, cloud computing, machine learning and other technologies, thus improving the quality and level of ideological and political science class teaching. At the same time artificial intelligence in the classroom application should also do a good job of data collection and research and analysis of the application effect.

According to Figure 2, the current situation of domestic Al+ education investment and financing shows that Al+ education track financing in 2017 is the highest in the policy-driven, 2013-2017 Al+ education financing heat climbed, up to 83; Al+ education financing accounts for about 12% of the overall education financing events. 2020 Al+ education financing total is the highest since 2017 Al+ education financing number has decreased, but still remains at a high level; and the total financing is steadily increasing, especially in 2020, excluding the super-large financing of ape coaching in the year is still the highest in the past 10 years, reaching nearly 8.5 billion yuan. The number of Al+ education financing has declined since 2017, but still remains at a high level; and the total amount of financing is steadily increasing, especially in 2020, which is still the highest in the past 10 years, reaching nearly 8.5 billion yuan after excluding the super-large financing of ape coaching during the year.

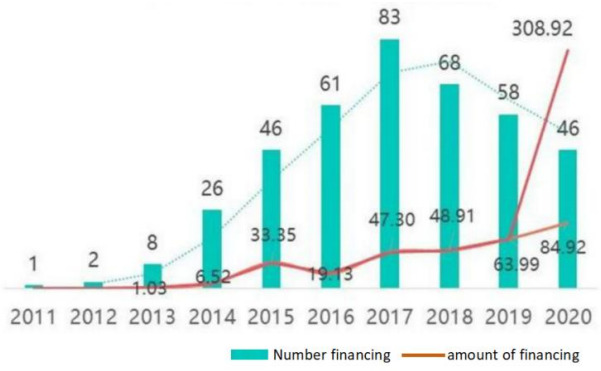

Fig. 2. (Source 2021 China AI+Education Application Report) AI+Education financing in the last 10 years

In order to better understand the application of artificial intelligence in the ideology and politics class, a survey was conducted through questionnaires to investigate the application of artificial intelligence in the classroom by 100 teachers of ideology and politics in Beijing colleges and universities(as shown in Figure 3), and it was analyzed that the use of artificial intelligence by male and female teachers has certain regular changes with the growth of teaching experience, specifically male teachers use artificial intelligence more frequently in the classroom, and teachers with 6-8 years of teaching experience use artificial intelligence more frequently. The reason for this is that these teachers are in a period of rapid development of AI during their school years, and they have a better grasp of the application technology and some teaching experience, which makes it easier for them to combine technology with teaching.

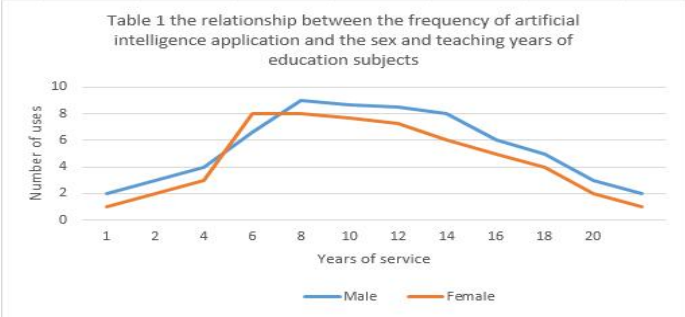

Fig. 3. (source self-created) Frequency of AI application in relation to gender and seniority of educational subjects

3.4. Problems with the application of artificial intelligence in the ideology and politics class

The concept of combining mathematics and science applications is not yet mature. The mathematical and scientific integration of artificial intelligence and ideological and political education requires innovation and reform in educational objectives, educational contents and educational methods, but there is a lack of corresponding theoretical guidance and practical exploration. For example, how to determine the scope and degree of application of AI in ideological and political science classes? How to ensure the correctness and reasonableness of AI in ideological and political science classes? How to evaluate the application effect of AI in ideological and political classes? All these questions need to be studied and explored in depth.

Weakened discourse subjectivity and authority. Artificial intelligence empowering ideological and political education may lead to the transfer of the discourse of ideological and political education from educators to technology, thus weakening the subjectivity and authority of ideological and political education[7]. For example, if students acquire ideological and political knowledge through AI, they may develop excessive trust or blind obedience to AI and ignore educators' guidance and explanations. Or, if students express ideological and political views through AI, then they may be influenced or manipulated by AI and lose the ability to think and judge on their own.

There is a digital divide in one-way indoctrination education. Artificial intelligence empowering ideological and political education may turn ideological and political education into a one-way indoctrination process, ignoring students' active participation and feedback, and may also create a digital divide between different regions and groups. For example, if AI only provides students with uniform ideological and political information without taking into account their individual needs and differentiated characteristics, it may lead to reduced interest and motivation, or even resistance and resentment. Or, if there is unfairness or inequality in the application of AI in ideological and political education, then it may intensify social division and antagonism.

Data security risk. AI-enabled ideological and political education requires the collection and analysis of a large amount of student data, which may involve information about students' privacy, personality, and values, and may lead to data leakage, misuse, or tampering if not effectively protected and managed[8]. For example, if student data is illegally accessed or used, then it may cause harm or loss to the student. Or, if student data is incorrectly or maliciously analyzed or processed, then it could mislead or impact students.

Subject position transmutation. Artificial intelligence empowering ideological and political education may make the subject of ideological and political education shift from people to machines, thus affecting the humanistic nature of ideological and political education, lacking humanistic care of educational themes, and easily neglecting students' psychological health development.

4. The Application of Artificial Intelligence in the Ideological and Political Science Class Suggestions

4.1. Improve teachers' knowledge and application of AI technologies

In ideological and political education, artificial intelligence technology can help teachers in teaching design, teaching implementation, and teaching evaluation to improve teaching effectiveness and education quality. It can provide teachers with more information resources, interactive methods, personalized services, etc[9]. It can provide teachers with more information resources, interaction methods, personalized services, etc., and enhance the relevance, effectiveness and attractiveness of ideological and political education. However, artificial intelligence technology also brings new challenges and problems to ideological and political education [10], such as the concept of combining mathematical and scientific applications is not yet mature. These problems require the main body of ideological and political education - teachers - to have the appropriate literacy and ability to effectively cope with and solve them. Therefore, to improve the cognition and application ability of ideological and political education teachers on AI technology, we need to start from the following three aspects:

Improve ontological knowledge of AI technology. Teachers should master the basic concepts, principles, methods and applications of AI technology, understand the development history, current status and trends of AI technology, and recognize the advantages and limitations of AI technology, as well as the impact and challenges of AI technology on education. In this way,

teachers can effectively analyze and evaluate educational content, educational process and educational effects under the perspective of AI technology.

Improve the ability to apply artificial intelligence technology to education. Teachers should select appropriate AI technologies, design and implement effective teaching strategies, and build an intelligent teaching environment with four-dimensional space (i.e., physical space, virtual space, social space, and psychological space) according to educational goals and students' needs. In this way, teachers can utilize AI technology to improve the efficiency and quality of teaching and promote students' active and deep learning .

Improve the ethical awareness and responsibility of AI technology. Teachers should abide by the ethical principles and norms of AI technology, protect students' data security and privacy, respect students' individuality and values, and guide students to use and evaluate AI technology correctly. In this way, teachers can cultivate students' ethical literacy and sense of social responsibility while AI technology empowers ideological and political education [11].

4.2. Building a teaching model for the integration and development of artificial intelligence and ideology and politics classes

In the ideology and politics class teaching, the teaching mode can be designed according to the education subject-teacher, education object-student, different teaching style needs, etc. to be able to teach according to the material. For example, according to the different purposes of teaching, build virtual simulation experience teaching mode . The use of virtual reality, augmented reality and other technologies to provide students with immersive ideological and political education scenarios, allowing students to experience, feel and participate in the virtual environment, enhancing the authenticity, infectiousness and attractiveness of ideological and political education. For example, virtual reality technology can be used to let students visit revolutionary memorial sites and heroic martyrs' cemeteries to feel the spirit and sacrifice of revolutionary martyrs; augmented reality technology can also be used to let students watch the history and current situation of national development and recognize the strength and wealth of the country.

According to the different needs of teaching objects, build intelligent personalized teaching mode . Using big data, cloud computing, artificial intelligence and other technologies, we can provide students with personalized ideological and political education content, methods and services to meet their individual needs and differentiated development, and improve the relevance, effectiveness and satisfaction of ideological and political education. For example, big data technology can be used to analyze students' ideological characteristics, interests, learning habits, and push ideological and political education resources suitable for them; artificial intelligence technology can also be used to build intelligent question and answer systems, intelligent tutoring systems, to provide timely ideological and political education consultation and guidance for students.

According to different education scenarios, build an all-media interactive teaching mode. Using technologies such as the Internet, mobile devices, and social media to provide students with diversified ideological and political education channels, platforms, and carriers, expand the coverage and influence of ideological and political education, and promote the communication and sharing of ideological and political education. For example, Internet technology can be used to build ideological and political education websites, WeChat public

numbers, microblog accounts, etc. to release ideological and political education information and activities; mobile device technology can also be used to develop ideological and political education APPs, applets, H5s, etc. to provide ideological and political education courses and services [12].

4.3. strengthen the management and supervision of the application of artificial intelligence technology

The management and supervision of AI technologies is a complex issue that requires the joint efforts of governments, R&D subjects and technology providers. Our government has issued a series of position papers on the ethical governance of AI, requiring governments to strengthen ethical supervision of international collaborative research activities in AI, and relevant technological activities should comply with the AI ethical management requirements of the countries where each party is located and pass the corresponding AI ethical review[13]. In addition, R&D subjects should strengthen self-restraint on AI R&D activities, take the initiative to integrate ethics into all aspects of the AI R&D process, avoid using immature technologies that may have serious negative consequences, and ensure that AI is always under human control. Technology providers should also clearly inform their obligations, comply with AI-related regulations, policies and standards, take the initiative to integrate AI ethics into the entire management process, and take the lead as practitioners and promoters of AI ethical governance.

First, establish laws and regulations and standard specifications for the application of artificial intelligence technology. Develop and improve the laws and regulations related to the application of artificial intelligence technology, clarify the definition, scope, principles, responsibilities, rights of the application of artificial intelligence technology, to provide legal protection and basis for the application of artificial intelligence technology.

Second, establish a special AI technology application regulator, responsible for developing and implementing regulatory policies and measures for AI technology applications, coordinating and communicating with various stakeholders, and handling and resolving issues and disputes related to AI technology applications[14].

Third, establish ethical guidelines and social responsibility for the application of AI technology. Advocate and promote ethical guidelines for the application of AI technology, emphasize the legitimacy, rationality, transparency, fairness, interpretability of the application of AI technology, and avoid the abuse, misuse, and abuse of power of the application of AI technology. At the same time, strengthen and implement the social responsibility of AI technology application, protect personal privacy, data security, intellectual property rights.

Last, adhere to the people-oriented. The purpose of ideological and political education is to cultivate socialist successors with all-round development of morality, intelligence, physical fitness and aesthetics, rather than making robots. Artificial intelligence technology is only a tool and aid for ideological and political education, and cannot replace the main position and responsibility of educators and educated people[15]. It should respect students' individuality, interests and needs, stimulate their initiative, creativity and participation, and promote their comprehensive development.

5. Prospects and Prospects for the Application of Artificial Intelligence in Ideological and Political Classes

First, The prospects and value of the application of artificial intelligence technology in ideological and political courses are mainly reflected in the following aspects: first, it can improve the teaching efficiency, reduce the burden of teachers, and make the teaching more accurate and efficient; second, it can improve the students' interest and participation in learning, and stimulate the students' enthusiasm for learning; third, it can promote the innovation and development of ideological and political courses, and promote the modernization process of ideological and political education.

Second, The limitations of the research mainly include the following aspects: first, the research sample is small, and the research results may have certain bias; second, the research time is short, and the research results may not be comprehensive and in-depth; third, the research method is not scientific and rigorous enough, and there may be certain errors.

Third, The future direction of the research mainly includes the following aspects: first, further in-depth exploration of the prospects and value of the application of AI technology in ideological and political courses; second, further improvement of the teaching mode of the integration and development of AI and ideological and political courses; third, further strengthening of the management and supervision of the application of AI technology, to ensure that it can be safely and reliably applied in the ideological and political courses.

6. Conclusion

The conclusion of the research on the application of artificial intelligence in ideological and political classes is an emerging field. Artificial intelligence technology can be applied to the work of ideological and political education in modern colleges and universities, turning the variables of artificial intelligence into the increment of educational work, which will bring a new working environment and mode to the work of ideological and political education.

AI technology can enhance the relevance and effectiveness of ideological and political education and help cultivate the socialist successors who have all-round development of morality, intelligence, physical fitness, aesthetics and labor. The use of artificial intelligence technology can realize the real-time analysis and multi-dimensional control of students' ideological dynamics, assisting educators to make the correct guidance. At the same time, artificial intelligence technology is also the environmental constraint variable of ideological and political education innovation, as well as the driving factor of the innovation process. In short, the conclusion of the research on the application of artificial intelligence technology in ideological and political classes is a field worth exploring and studying.

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