

An Exploration of AI Empowering High-Quality Innovative Talent Training Model for Mathematics and Applied Mathematics(Normal Major)

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Abstract: The advent of the era of artificial intelligence(AI)has had a profound impact on talent training.With the rapid development of AI technology,the needs and requirements are also changing for talents in all walks of life.Therefore,colleges and universities need to actively explore the talent training model to adapt to the new era in order to train top talents with innovation ability and practical experience.This paper explores the high-quality innovative talent training model of mathematics and applied mathematics(normal major)empowered by AI,analyzes the impact of the age of AI on the talent training of mathematics and applied mathematics(normal major),and proposes corresponding reforms.

Keywords: AI;Talent Training; Mathematics and Applied Mathematics; Normal Major

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1. Introduction

With the rapid development of artificial intelligence technology,AI has gradually penetrated into various fields and has had a profound impact on all walks of life.The education sector is no exception,and the development of AI technology has brought new opportunities and challenges to education.As an important branch in the field of education,mathematics and applied mathematics(normal major)also needs to keep pace with The Times and explore a talent training model to adapt to the age of AI.This paper will start with the influence of the age of AI on the talent training of mathematics and applied mathematics(normal major),analyze the shortcomings of the existing talent training model,and put forward the corresponding reforms.

2. The Influence of the Age of AI on the Talent Training of Mathematics and Applied Mathematics(Normal Major)

2.1 The Transformation of Educational Philosophy

Under the background of the age of AI,the transformation of educational philosophy is an important factor affecting the talent training of mathematics and applied mathematics(normal major).The traditional education mode of mathematics and applied mathematics(normal major)is teacher-centered,in which teachers are responsible for imparting knowledge,and students are in a passive position to accept them.In the age of AI,however,it has fundamentally changed.With the emergence of new education methods such as intelligent education platforms and online courses,students can learn more autonomously,and the role of teachers is gradually changing.Teachers are no longer just the transmitters of knowledge,but become the guide and mentor for students in learning.This transformation of educational philosophy requires that mathematics and applied mathematics(normal major)should pay more attention to cultivating students'self-learning ability and innovation ability in the process of talent training,so that they can adapt to the development trends of future education.

2.2 The Reform of Teaching Methods and Means

The development of AI technology has had a profound impact on teaching methods and means. In the era of AI, traditional chalkboards and chalks have been replaced by modern educational technologies such as multimedia teaching and online education. The application of these technologies makes the teaching process more vivid and intuitive, and helps to improve students' interest in learning and learning effect. The mathematics and applied mathematics (normal major) need keep up with the development of The Times and cultivate talents who have mastered modern educational technology and can use AI tools for teaching. It means that students majoring in mathematics and applied mathematics (normal major) need to have certain technical abilities and innovative thinking to be able to apply AI tools in teaching practice to improve the quality and effect of teaching.

2.3 Interdisciplinary Integration Among Subjects

The overlapping and fusion of AI technology with mathematics, education and other fields has brought new opportunities for the talent training of mathematics and applied mathematics (normal major). In the era of AI, students majoring in mathematics and applied mathematics (normal major) not only need to have a solid knowledge of mathematics, but also need to understand educational psychology, modern educational information technology, computer science and other related knowledge. This interdisciplinary knowledge structure helps to cultivate students with a broader vision and stronger innovation ability. Therefore, the talent training model of mathematics and applied mathematics (normal major) should pay attention to interdisciplinarity, and cultivate talents with interdisciplinary literacy by setting up interdisciplinary courses and carrying out interdisciplinary research, which will provide students with a broader space for their future career development, and make them better adapt to the development needs of the society^[1].

3. The Deficiencies of the Current Talent Training Model for Mathematics and Applied Mathematics (Normal Major)

3.1 Single Curriculum

According to the current National Standards for Teaching Quality of Undergraduate Majors and the Guiding Opinions on Relevant Talent Training Programs, current curriculum of mathematics and applied mathematics (normal major) place too much emphasis on the systematic learning and in-depth research of subject knowledge, resulting in a single curriculum content that lacks the integration of interdisciplinary knowledge such as educational psychology, computer science, and artificial intelligence. This curriculum neglects the cultivation of students' comprehensive qualities, leading to the fact that students are lack of necessary knowledge reserves and skill training when facing the trend that AI technology continuously integrates into the education sector, which makes it difficult for students to adapt to the needs of future education and is not enough to provide comprehensive guarantees for the achievement of the talent training goals of mathematics education in middle schools.

3.2 Practice is Insufficient in Education

The educational practice of mathematics and applied mathematics (normal major), such as education application, practice teaching, education study, etc., is an important link to cultivate students' practice teaching skills, educational practical ability and experience in teaching and research activities. However, there are many problems in the existing educational practice. Firstly, the time schedule is often insufficient for educational practice, and students only touch superficially to "experience" the practice, which is difficult for them to fully master relevant teaching skills in a limited time. Secondly, there is a serious problem with the formalization of educational practice, becoming a mere formality, which is lack of effective training for students in their actual teaching abilities. Finally, the combination is not high between educational practice and AI technology, and it is difficult for students to access the latest AI educational technology in the process of education application, practice teaching, education study, resulting in the fact that they cannot learn and master these modern educational innovation concepts and technologies in practice.

3.3 Lack of Sufficient Teachers

With the advent of the era of AI, for teachers in mathematics and applied mathematics (normal major), their roles and literacy requirements have changed significantly. However, there are obvious deficiencies in the existing teacher resources. Firstly, the age of teachers is relatively elder, and although they have rich experience, their understanding and mastery are limited for AI technology, making it difficult to effectively integrate AI technology with mathematics education. Secondly, there is a lack of teachers of mathematics and applied mathematics (normal major) with interdisciplinary background, which makes it difficult for students to get interdisciplinary knowledge and vision in the learning process. In addition, due to the shortage of teachers, it is often difficult for teachers to provide teaching content and methods to keep pace with The Times in the teaching process, which leads to

the difficulty for students to adapt to the educational environment of The Times after graduation,thus objectively prolonging the adaptation period for teaching.

4. An Exploration of AI Empowering High-Quality Innovative Talent Training Model

4.1 Optimizing the Curriculum

In order to meet the needs of the era of AI,the mathematics and applied mathematics(normal major)must reform the its existing talent training model.Firstly,the curriculum should be optimized to cultivate students'interdisciplinary literacy and practical application ability.It means that the curriculum should not be limited to the knowledge in the field of pure mathematics,but should be integrated into interdisciplinary courses such as educational psychology,modern educational information technology,and computer science on this basis.In this way,students will be able to acquire a more comprehensive knowledge structure and better adapt to future changes in the educational environment.At the same time,the mathematics and applied mathematics(normal major)should also add courses related to AI educational technology.These courses can teach students about the latest applications of AI in education,such as intelligent teaching systems,personalized learning recommendation algorithms,virtual educational assistants,etc.By studying these courses,students can not only understand the basic principles of AI technology,but also master how to apply these technologies to teaching practice,thereby improving their learning effect and learning experience.

4.2 Strengthening Practice

The practice of education plays an important role in the talent training of mathematics and applied mathematics(normal major).In order to improve students'practical ability,practice should be strengthened.Firstly,the time for educational practice should be guaranteed to ensure that students have enough opportunities to practice in real or simulated teaching environments.Secondly,educational practice should be closely combined with AI technology,so that students can learn and apply AI educational technology in educational practice. For example,students can gain hands-on experience by using intelligent teaching platforms for teaching design,implementation and evaluation.In addition,some partial aspects of educational practice can also be carried out through project-based learning,question-oriented teaching research,and other forms,allowing students to cultivate their innovative thinking and ability to research on their own in the process of solving practical teaching problems.Through these measures,students will be able to continuously improve their teaching ability in practice,and make preparation for being an excellent mathematics teacher in the future.

4.3 Perfecting Teacher Resources

Perfecting teacher resources is the key to realize the high-quality development of mathematics and applied mathematics(normal major).In order to achieve this goal,colleges and universities can take the following measures.Firstly,they can introduce teachers with interdisciplinary backgrounds,such as experts in computer science and educational psychology,to enrich the disciplinary structure of teaching staff.Secondly,existing teachers are encouraged to participate in continuing education and professional training to enhance their understanding and application ability of AI educational technology.Thirdly,they can strengthen the construction of teachers. teaching seminars,teaching observation and others can be used to promote the communication and cooperation among teachers to improve the quality of teaching.Finally,colleges and universities can also cooperate with educational institutions and enterprises to invite teachers or experts with rich teaching experience and the ability to use AI technology to lecture or offer short-term courses,jointly carry out scientific research projects with enterprises to allow students to participate in actual research work Etc ,Take this to widen students'views and provide them with more learning resources^[2].

5. Conclusion

The arrival of the era of AI gives new challenges to the talent training of mathematics and applied mathematics(normal major).In order to adapt to this change,colleges and universities should optimize the curriculum,strengthen practice,perfect teacher resources,strengthen cooperation and other aspects to uphold integrity and innovate and improve quality and reform.By exploring the talent training model that is adapted to the era of AI,professionals in mathematics and applied mathematics,with innovation ability and practical experience,can be cultivated to contribute to the development of education cause in China.

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