

## The Research on Management Science Innovation Path under the Vision of Artificial Intelligence

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**Keywords:** Artificial intelligence, Vision, Management, Scientific innovation, Path research.

**Abstract:** The educational reform brought about by new technologies is in the ascendant. Artificial intelligence and wisdom education have led the innovation of education and teaching, which has become an inevitable trend in the development of educational information. With the development of technological innovation, how to analyze and manage large amounts of data to support accurate prediction is a new topic facing the artificial intelligence era. This paper mainly introduces the scientific and technological innovation management mode under the field of artificial intelligence, realizes the rational use and sharing of scientific and technological information on artificial intelligence platform, thus effectively strengthening the management of scientific and technological innovation in colleges and universities, and points out a new path for the scientific and technological innovation management of colleges and universities.

### 1. Introduction

Artificial Intelligence (AI) is an important professional course in computer science and technology. It is a comprehensive study that uses computer simulation and extends human brain function. It studies how to use computers to imitate thinking activities such as reasoning, proofing, identification, understanding, design, learning, thinking, planning, and problem solving in the human brain, and to solve complex problems that require human experts to deal with, such as consulting and diagnosis. Decision-making issues such as forecasting and planning [1]. Artificial intelligence is a cross-disciplinary and comprehensive discipline involving mathematics, computers, cybernetics, informatics, psychology, and philosophy. At present, many research fields of artificial intelligence, such as natural language processing, pattern recognition, machine learning, data mining, intelligent retrieval, robotics, intelligent computing, etc. are at the forefront of information technology, and many research results have entered and affected people.

Higher education that adapts to the development of the knowledge economy should place its creative spirit of creativity and innovation in a prominent position. Innovation is the life of basic research, and the teaching of colleges and universities can only make a difference in cultivating students' innovative spirit if they are closely integrated with scientific research. To this end, for the characteristics of artificial intelligence courses, we actively carry out research-based teaching, research-based learning, and improve the research and practice of college students' learning ability, practical ability and innovative ability. In the textbook, we selected "Artificial Intelligence" published by Tsinghua University Press and written by Ma Shaoping. The main content of our teaching research and practice includes three aspects: heuristically imparting artificial intelligence to solve problems; unstructured thinking; systematic experimental training; and graduation thesis, school student research project funding plan, national university students' innovation the experimental plan is related to the scientific research training [1]. These three main aspects, progressive and interlocking, are the complete innovative artificial intelligence teaching practice.

### 2. Analysis of the basic principles and characteristics of artificial intelligence technology

Artificial intelligence technology consists of multiple systems, and the research direction is

numerous. The research system that has achieved the greatest achievement is the expert system. Because the relationship between the expert system and the library work is more closely, this paper takes the expert system as an example to introduce the basic principles and characteristics of artificial intelligence technology in detail. The so-called expert system means that in a computer program, an intelligent program is added to help people solve complex problems that can be solved only by those who have acquired high knowledge skills in a certain field. In essence, the expert system is an intelligent model of knowledge reasoning [2]. From the function and specific function process of the expert system, the ability of the artificial intelligence technology to play its role mainly depends on the professional knowledge possessed by the intelligent model. The development of artificial intelligence technology is inseparable from knowledge. It is a knowledge-based technology that combines the best of multidisciplinary knowledge and its influence in the field of scientific research is self-evident.

In general, artificial intelligence technology systems include components such as knowledge bases, inference engines, work memory, and human-machine interfaces. The core of this technology system is the knowledge base and the inference engine. When building the knowledge base, it is necessary to formulate key problems and reasonably select the knowledge and its representation methods so as to accurately convey the knowledge in a certain field. After determining the knowledge and its representation, it is necessary to use the inference engine to design the scientific reasoning mechanism, so that the artificial intelligence technology system can carry out related work according to the needs of users and solve related complex problems. In the artificial intelligence technology system, the human-machine interface is used to deal with various consulting problems. This interface is a user window. When users use the artificial intelligence technology system, they only need to access the content they need in this window, and then they can obtain related information. . The work memory is used to record the reasoning process, which is equivalent to the role of the blackboard in the teaching process [3]. The structural representation of the artificial intelligence technology system in the deactivation of the national policy is generally knowledge + reasoning, which is very different from the traditional program structure, and its application effect is far superior to the traditional program system.

### **3. Analysis of the status quo**

#### **3.1 Defects in the management system of innovation and entrepreneurship education**

Innovative entrepreneurship education related courses are new courses in many colleges and universities, such as: innovative thinking training and practice, entrepreneurship management, etc. Some colleges are opened in freshmen, and some are offered in junior or seniors. However, according to relevant surveys, most universities have not yet established a comprehensive and systematic innovation and entrepreneurship education curriculum system. Some colleges only start courses for a certain major, such as marketing, most of the majors do not have courses related to innovation and entrepreneurship; and lack of the combination of compulsory courses and elective courses, some universities even only single innovation and entrepreneurship courses it is set as an elective course; there is a lack of practical practice courses, and the practice bases and platforms that are compatible with the entrepreneurial theory courses are also lacking. It is difficult for college students under this education management system to cultivate positive innovation and entrepreneurship concepts and put them into practice [4].

#### **3.2 Students' awareness of innovation management is weak**

Most of the contemporary college students are only children. They grew up under the care of their parents. After graduating from college, many of them are dependent on their parents to get a job. The sense of innovation and entrepreneurship is naturally weak. Inertia is the nature of human beings. The relaxed feeling of getting nothing makes college students pampered and has no interest in innovation and entrepreneurship.

### **3.3 Not fully aware of the management of science and technology innovation**

The management of scientific and technological innovation has a very important significance for college students. This is an important guarantee for students to grow in the era of technological innovation [3]. However, at present, there are many misunderstandings and problems in the information management of colleges and universities. It is believed that the management of science and technology innovation is a measure of data and scale. It does not really realize the importance of big data, which has led to the slow development of science and technology innovation management in universities.

### **3.4 The level of scientific and technological innovation management is lacking.**

Although many colleges and universities have realized the management of students' scientific and technological innovation, the relative problems are more prominent, showing that the level of application is low, limited to the analysis of various materials, and lack of more research and comparison [4]. These issues are highlighted in the student's employment direction and profession. It has not fully played its true role in the management of technological innovation. Most schools have manual processes, such as: application, approval, etc. are still using the traditional management model.

### **3.5 Lack of innovation in student management.**

First of all, we must understand the important influence of big data knowledge on the management of college students [3]. For the present, there is an understanding of innovation in the unification, and it is not clear enough about the concept of technological innovation. Therefore, under such circumstances, it has not played an important role in student management, leading to more problems and obstacles, and it is impossible to guarantee the implementation of scientific and technological innovation management for college students.

## **4. The advantages of scientific innovation management in colleges and universities from the perspective of artificial intelligence**

### **4.1 Artificial intelligence helps to improve the information level of education management**

Artificial intelligence technology relies on the analysis and integration of a large amount of data information to achieve scientific and accurate management and decision-making. For example, in the construction of the question bank, artificial intelligence technology can effectively solve problems such as difficulty analysis of test questions, coverage of test questions, quality of test questions, and effective combination of test questions and teaching situations [5]. Introducing artificial intelligence management in many fields such as student status management, performance files, library management, and personnel management, and real-time data analysis can improve management efficiency and reduce the work intensity of managers [6]. At the same time, the development and popularization of mobile terminal devices has made it possible to widely use artificial intelligence technology. If we can achieve data input, accuracy confirmation, data standardization and detection technologies, etc., it will undoubtedly increase the level of education management information in colleges and universities.

### **4.2 Artificial intelligence application promotes the sharing of knowledge and intellectual resources**

Institutions of higher learning are places with intensive talents and a wealth of knowledge and intellectual resources. These resources have long been confined to the university campus and cannot be shared by the whole society. This cannot be said to be a great waste. The wide application of information technology and artificial intelligence provides the possibility for such resources to be shared by the society. Some limitations of traditional teaching, such as teaching location, time, scale, etc., are being broken by network and mobile technology [5]. The teaching methods with

micro-curriculum and MOOC as the main forms are spreading rapidly and widely. Freedom and innovation have been more reflected in the limitations of time and space. In the context of artificial intelligence, the education management of colleges and universities is constantly updated, and the traditional concept is undergoing the test of the era of artificial intelligence. College teachers use network artificial intelligence technology to fully understand the differences of students' individual thinking based on the analysis of students' personal information, and establish a personalized teaching mode in combination with the characteristics of teachers themselves, truly becoming an effective way to realize teaching in accordance with their aptitude in the new era.

## **5. Countermeasures for innovative university education management mode under the vision of artificial intelligence**

### **5.1 Establishing artificial intelligence thinking mode of education management**

In the information age, colleges and universities as the forefront of intellectual intelligence and the cradle of cutting-edge talents, their management level must advance with the times, cannot be ruthless, and remain unchanged [2]. The innovation and improvement of the education management mode of colleges and universities is inseparable from the development and application of artificial intelligence technology, which is inseparable from the innovative research of efficient educators. Therefore, college administrators and teachers must establish an artificial intelligence thinking mode and fully understand the role of artificial intelligence technology in promoting education development [5]. The establishment of artificial intelligence thinking mode will naturally play a positive role in promoting management concepts. In terms of management philosophy, we must also pay attention to mobile terminals. Facing massive data and complex information sources, college administrators must aim at the development of students and guide students to make proper use of artificial intelligence to provide a correct path for talent training. In this way, the education management of colleges and universities can be adapted to the needs of the times.

### **5.2 Rational planning of university education management data platform**

The most important point of application of artificial intelligence technology is the collection of data and integration analysis. The artificial intelligence of college education management must be based on the university education management data platform. Therefore, it is necessary for higher education institutions to set up a special information platform management department to integrate various systems within the university. This platform system analyzes statistical results by collecting, updating, and sharing student data. In the management process, students' information can be more comprehensively grasped. At the same time, schools must establish standardized and perfect platform management and use rules, and must comply with the norms in all aspects of information collection, use and sharing to ensure student information security and prevent information leakage [6].

### **5.3 Pay attention to the cultivation of artificial intelligence talents**

In the field of artificial intelligence, the education management model of colleges and universities should continuously optimize and innovate with the advancement of technology. The wide application of artificial intelligence technology brings new opportunities to the education management of colleges and universities, and it is accompanied by enormous challenges. As the forefront of knowledge and intelligence, institutions of higher learning must seize this opportunity to promote the informationization and standardization of higher education management [6]. Therefore, it is necessary to establish a team of professional teachers with artificial intelligence thinking mode and mastering the use of artificial intelligence. It is necessary to strengthen the advanced professional technical training for college teachers, so that they can master and flexibly use relevant capabilities, such as management data platform, master data analysis theory, data analysis methods and use related data analysis tools. In the education and teaching work, the artificial intelligence management method is adopted to optimize the talent training.

## **6. Summary**

In short, the development of artificial intelligence technology has a high application value and far-reaching impact on the scientific innovation management of colleges and universities. Under the background of artificial intelligence, the scientific innovation management mode realizes the rational use and efficient sharing of information through artificial intelligence platform, thus effectively strengthening the scientific innovation management work of colleges and universities and promoting the sustainable development of higher technology.

## **Acknowledgement**

Project fund support: 1. "Blending Learning Research in the Context of Internet +", 2017 annual project of Education management information center of the ministry of education (project number: EIJYB2017-073); 2. "Study on Independent and Cooperative Learning Strategies of College Students in Chinese-foreign Cooperative School-running Mode", University foreign language teaching and research project of Foreign Language Teaching and Research Press (project number: 2018060109).

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