Pedagogics Reform of Application-Oriented Undergraduate Universities Based on Big Data and Artificial Intelligence

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Abstract:

The rapid development of big data technology and artificial intelligence imperceptibly accelerates the development of the indoctrination field of applied undergraduate colleges, and provides new tools and methods for the indoctrination and instruction of application-oriented undergraduate universities. But there are also many problems exposed in practical use. For example, to ensure that the use of indoctrinational AI reaches the expected ideal state; how to urge teachers' instruction concepts to follow up the development of AI technology. Through the pedagogics resources and instruction environment, instruction and learning methods and instruction evaluation and instruction management, we explore the instruction reform and innovation of private colleges based on big data technology and artificial intelligence, based on OBE indoctrination concept, the model, and improve the instruction effect of private colleges.

Keywords: *Artificial intelligence, Instruction reform, Big Data*

I. INTRODUCTION

The term "AI" first originated from the 1956 Dartmouth Conference, a concept that has been proposed for more than 60 years [1]. With the increasingly renewal and development of the Internet era and the arrival of the era of big data, artificial intelligence has entered a new stage of development, which has brought a great impact on people's production and life. In the field of indoctrination, the 2020 Horizon Report pointed out that "AI technology, as an important part of the 'technology trend' of global indoctrination development, is profoundly affecting the development of global indoctrination" [2]. With the rapid development of big data technology and artificial intelligence, a new idea of instruction reform and development has been opened. But AI has many applications in indoctrination still face problems. For example, how to develop an intelligent instruction system suitable for applied undergraduate college students and reasonably apply it to daily instruction activities, and whether it can achieve the expected indoctrinational results. With the improvement of technology update, the intelligent system is difficult to meet the needs of application-oriented undergraduate colleges; the instruction philosophy and the existing AI technology need to be further improved. How to integrate human artificial intelligence in indoctrination and instruction and improve the effect of indoctrination and instruction has become a hot topic in the

indoctrination and technology circles. In the instruction process, there have been preliminary attempts to attract artificial intelligence elements, and we have achieved certain results. All kinds of knowledge-sharing platforms with artificial intelligence as the core are also in a period of vigorous development, profoundly changing the connotation and way of learning. For vocational indoctrination, the virtual learning scene and intelligent instruction revolution brought by artificial intelligence provide a new opportunity for its development. Therefore, it is necessary to explore the indoctrination reform and reasons brought by big data technology and artificial intelligence to application-oriented undergraduate colleges and universities.

II. THE INNOVATION AND DEVELOPMENT OF THE TWO-DIMENSIONAL INSTRUCTION MODE

With the continuous innovation of instruction mode, traditional instruction resources have no longer meet the personalized learning needs of application-oriented undergraduate colleges, especially application-oriented local colleges mainly in rail transit, which is difficult to promote the reform of instruction mode. With the development and application of artificial intelligence technology in instruction brings opportunities and challenges to indoctrinational reform, and promotes the innovative development of two-dimensional instruction mode of application-oriented undergraduate colleges, namely instruction resources and instruction environment. Artificial intelligence technology can intelligently push and retrieve instruction resources, and provide a personalized and intelligent instruction environment for teachers and students.

2.1 Human-Machine Collaborative Instruction Platform is Intelligent

The traditional indoctrinational theory and practical framework formed in the industrial era are gradually unable to adapt to the arrival of the "Internet +" era, and the integration of instruction, learning, management, evaluation and measurement of indoctrination and instruction makes us have to think about the profound changes in the concept, system and way of indoctrinational governance. Artificial intelligence is profoundly changing people's way they produce, live and learn, and promoting human society to usher in an intelligent era of man-machine collaboration, cross-border integration, and co-creation and sharing. Intelligent instruction platforms will appear subsequently, such as rain Classroom, Wisdom Tree, China University MOOC, Educator and many other intelligent indoctrination platforms. Artificial intelligence instruction platform is a instruction system integrating intelligent lesson preparation, teacher-student interaction, evaluation and analysis, data mining, etc., providing a channel for personalized "instruction and learning" in application-oriented undergraduate universities. Students in the traditional classroom have low learning enthusiasm, low interaction, and poor instruction quality [3]. Through the powerful functions of the intelligent instruction platform, students can conduct independent preview and find the required information in the pushed resources; the teacher can intelligently prepare lessons, test classes, ask questions, and accurately analyze the learning feedback of the instruction group and the instruction process, covering every link of the instruction, and solve the problems of low head rate and more sleep in the traditional classroom, significantly improving the instruction effect. We will attach great importance to

the profound impact of AI instruction platforms on indoctrination, actively promote the deep integration of artificial intelligence and indoctrination, and promote indoctrinational reform and innovation.

The indoctrination model of human-machine collaboration reshaped the structure and pattern of society and breaks the social relationship foundation of traditional "indoctrination management". Through the intelligent instruction platform, teachers can share instruction plans and improve advanced instruction concepts and instruction methods through the intelligent platform before instruction. The intelligent platform can distribute different preview materials to students according to students' learning ability and mastery. Through the collection of students' learning process, as well as the interaction between teachers and students, timely adjust the instruction design, and truly realize the personalized learning mode. During the instruction process, the students can see the attendance of the instruction group by scanning the code, answering the questions and interacting in real time. Sending test questions, the intelligent instruction platform can remember students 'performance and conduct real-time interaction to improve students' participation. After the instruction, students complete the homework on the intelligent platform, and the platform completes the homework correction and real-time feedback to improve the efficiency of after-school tutoring. It is very necessary to actively carry out the application picture and development path of man-machine coordination in the field of indoctrination governance and promote the modernization of indoctrination governance system and governance capacity.

2.2 Human-Machine Collaborative Instruction Resources are Intelligent

To break the social relationship foundation of the traditional "indoctrination management", to promote the transformation of instruction methods, and to provide technical and social relationship level support for the reform of indoctrination governance through human-machine coordination. The traditional indoctrination mode cannot meet the employment and learning needs of students of application-oriented undergraduate universities, especially the employment needs of local application-oriented undergraduate students in rail transit. According to the influence of talent training program and employment and other factors, instruction resources, like instruction platforms, need to constantly update themselves, constantly mature development, and constantly adapt to the learning needs of students in application-oriented undergraduate colleges. Through man-machine collaborative indoctrination management, in the process of instruction resources intelligent evolution, to carry out multiple, multi-level instruction mode, with students as the center, relying on OBE indoctrination concept to carry out results oriented output, through machine learning, before releasing the quality of resources, score, qualified after release, truly according to their aptitude, results oriented. Through machine understanding and processing of information, according to the form of resources, it is convenient for students to retrieve learning resources in the later stage. The relationship between resources are reorganized to realize the continuous and orderly evolution of instruction resources [4-5].

2.3 Intelligent Push of Human-Machine Collaborative Instruction Resources

Big data, artificial energy, cloud computing, Internet of Things, blockchain and other machine energy

are accelerating the change of the concept, methods and tools of indoctrination governance, providing technical support from indoctrination management to indoctrination governance. Human-machine collaboration will further transcend human intelligence and machine intelligence, build a higher level of intelligent form, and further realize the reform of the structure and relationship between the indoctrinational subject [6-7]. As a quantitative element of indoctrination, intelligent push of instruction resources can effectively solve the contradiction between the learning resources of students in application-oriented undergraduate universities in the environment of big data and those with limited time in practical practice, social practice and student metalworking practice. Based on the OBE indoctrination concept, the intelligent platform first records students' learning status, what they want to learn, how to learn and what procedures they want to achieve, then extracts and analyzes characteristic information and puts it into the data management warehouse, and then conducts in-depth mining and analysis to push the learning content suitable for students.

III. THE TEFORM OF INSTRUCTION AND LEARNING METHODS IN APPLICATION-ORIENTED UNDERGRADUATE COLLEGES

The intelligence of instruction resources and instruction environment is the basis of the instruction reform in application-oriented undergraduate universities in the new era. Change the traditional school indoctrination and its governance mechanism, so that schools can avoid excessive intervention from other factors, make the indoctrination process more open and flat, and make teachers in application-oriented undergraduate colleges more intelligent in lesson preparation, instruction, q & A, student preview, interaction, deep learning and other processes more intelligent.

3.1 Intelligent Instruction

Traditional instruction adopts "cramming instruction ", teachers generally use blackboard, chalk and other instruction tools, become the instruction leading, students passively accept the task, the classroom is monotonous. The traditional instruction mode ignores the subject status of students, the instruction quality is low, the instruction progress is slow, and the instruction effect is general. The instruction environment based on artificial intelligence provides strong support for the training of students' employment positions. With the help of artificial intelligence-related equipment to assist teachers in lesson preparation, practical training and evaluation, teachers spend more time and energy to improve instruction quality and instruction innovation. In the learning process, students can ask questions through the intelligent platform and search for learning resources at any time to reduce their fear of learning and stimulate their interest in learning. The instruction reform of man-machine collaborative intelligence is the transformation of instruction mode.

3.2 Change of Instruction Mode

Intelligent instruction environment and intelligent instruction resources are bound to promote the intelligent instruction mode. Instruction subjects realize the multi-dimensional intersection between

teachers and equipment, between students and equipment, and between teachers and students. The instruction mode includes three links: before, during and after class. The instruction based on artificial intelligence technology is more efficient than the traditional instruction in all links, driving the construction of intelligent instruction mode. The teacher complete the corresponding instruction design according to the student feedback and preset the instruction process. The platform will recommend excellent instruction plans and suitable instruction resources, and teachers will use the intelligent lesson preparation system to prepare lessons and conduct accurate instruction [8].Artificial intelligence can be used to dynamically combine personalized learning content in line with students' specific style, specific abilities, and specific learning strategies [9].

In the course of instruction, the learning objectives and preview content of this lesson are sent to the platform, and students use their fragmented time to conduct independent preview. Teachers can remotely monitor the students 'preview situation through the platform, and then push the appropriate learning resources and provide key guidance according to the students' preview situation. Teachers automatically generate preview reports through the platform, check the situation of the whole major, understand the content that needs to be taught in key points and difficult points, adjust the instruction content in real time, and design classroom activities for the corresponding knowledge points.

Intelligent learning is students according to their own situation, in the intelligent learning environment for learning resources, independent learning activities, enjoy personalized learning support services, get timely feedback evaluation, can correctly understand self insufficiency and advantages, promote comprehensive quality and innovation ability, through self mining their own excellent and inferior, students can conduct intelligent learning after class [10]. Students can obtain learning resources according to demand, independently carry out learning activities suitable for them, and can obtain feedback and evaluation in time to promote the improvement of their own comprehensive quality.

IV. INSTRUCTION EVALUATION AND INSTRUCTION MANAGEMENT BASED ON ARTIFICIAL INTELLIGENCE

The traditional indoctrination model's evaluation of students' learning results is biased to the result evaluation, mainly relying on the written test, and does not consider the process evaluation adapted to the personal situation. In the development of artificial intelligence technology, the instruction evaluation should be adjusted, and the "formative evaluation" and "summary evaluation" should be carried out, and various evaluation should be classified into the continuous instruction work, and finally the artificial intelligence technology should be used to complete the evaluation.

An important part of the instruction process of application-oriented undergraduate colleges includes instruction evaluation and instruction management. The intelligence of instruction environment, instruction resources and instruction mode is bound to promote the innovation of instruction evaluation and instruction management, and more automated, intelligent and scientific. Instruction evaluation has changed from traditional manual evaluation to intelligent evaluation of big data, and from standardized evaluation to differential evaluation.

With the development of artificial intelligence technology, the data in the instruction process is becoming more and more abundant. Use relevant technologies to mine and analyze the instruction data to realize the automation and intelligence of instruction evaluation and instruction management [11], Personalized evaluation of the students' personalized learning.

4.1 Intelligent Instruction Evaluation

Through intelligent technology and intelligent algorithms, student evaluation is not only through the examination, but also the overall, comprehensive and comprehensive instruction activities. You can record the students' learning attitude before class, the participation and investment in the class, and the final learning effect to generate visual reports.

From the evaluation of students 'learning ability, the traditional learning ability prediction is generally to test students' early mastery of knowledge in the form of questionnaire, survey and interview, but it is not good to predict students' knowledge and skills, learning motivation, learning interest and style. Through intelligent technology and means, students can predict their learning ability, and carry out targeted instruction. From the perspective of the student assessment results, the intelligent system can test the students according to the weak knowledge points, and compile the examination papers with different difficulty system. And use the intelligent learning way to automatically review the examination paper. A" paper analysis report" shall be provided after the machine marking. Students can grasp the subject knowledge points and ability points at a glance.

4.2 Intelligent Instruction Management

Instruction management is about collecting information and making decisions. The premise of the smooth development of application-oriented undergraduate universities is to have efficient instruction management. The integration of artificial intelligence promotes the more orderly and efficient development of instruction management in private colleges and universities. At present, in the instruction management, many work, such as data collection, input and summary, still need to be completed manually. Through the intelligent instruction management system, the sharing and dynamic update can be realized. Make the traditional instruction management manual mode towards the intelligent mode. Through artificial intelligence technology and algorithm, the correlation of the training scheme and curriculum setting were analyzed. It provides theoretical guidance for relevant managers to scientifically formulate training programs for application-oriented undergraduate universities and reasonably set up courses.

V. SUMMARY

People are used to curing the "planting machine" as an auxiliary tool of indoctrinational governance, and the subject of" Bu can coordinate governance with natural person. In fact, with the innovation of technologies such as seed sensing, memory networks, deep learning, reinforcement learning, knowledge mapping, and generative adversarial networks, machine-autonomous decision-making is becoming a

reality. Artificial intelligence has comprehensively improved instruction efficiency, increased the participation of students, improved instruction results, and promoted the continuous transformation and upgrading of instruction in Napplication-oriented undergraduate universities. Based on the instruction of artificial intelligence, optimizing the instruction process has practical guiding significance for the instruction methods and instruction technology of applied undergraduate colleges as well as the learning methods of students.

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