

Research on Big Data Driven Intelligent Development of Education and Teaching

Xinglu Huang, Xiaoshan Gou

College of Computer Science, Chengdu University, Chengdu, Sichuan 610106

Abstract: The age of big data further promotes the pace of education reform in China, adjusts the surface and one-sided application of previous education data, strengthens the construction of intelligent campus under the support of big data, pays attention to the application and value of education big data from multiple perspectives, and accelerates the realization of intelligent education and teaching in China to a greater extent.

Keywords: Big data; Drive; Education and teaching; Intelligent development

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In recent years, with the development of big data technology and the continuous expansion of its application fields, people also have a clearer understanding of big data. According to big data scientific information, people will also expect education to be more functional. At the same time, big data technology can guide learning and career planning when analyzing students' learning behavior and exam scores. Big data will not only bring about changes in learning methods, but also in teachers' teaching methods. New education policies will be formulated to guide the development of smart education under big data. Big data is the frontier technology of data analysis, and it is the ability to quickly obtain valuable information from various types of data. Big data mainly includes big data technology, big data science, big data application and other fields. Big data science also pays more attention to discovering and verifying the laws contained in big data information and its relationship with natural and social activities during the development and operation of big data networks.

1. Big data brings changes to education

1.1 Change of learning style

There are obvious differences in the personal experience and knowledge structure of each learner, and the better learning methods that need to be adopted are also obviously different. Based on the big data education platform, students can obtain a variety of mutual learning models, along with a variety of assessment methods and reward mechanisms, and even combine game settings to obtain various knowledge. Each learner can finally get a learning method that meets his/her own needs according to his/her own characteristics, effectively enabling students to achieve personalized learning and development. Big data also provides more diversified learning resources, as well as a variety of virtual learning environments. These virtual learning environments can immerse people and increase their interest in learning^[1].

1.2 Reform of teaching methods

The development characteristics of the information age are outstanding. If we simply rely on traditional teaching methods, we can no longer meet the increasingly diversified needs and growing amount of knowledge. Teachers should fully apply more energy to guided teaching and open teaching to enhance students' thinking ability. In the context of the obvious complexity and diversity of big data information, higher education teaching is also facing a relatively big challenge. Knowledge and skills need to be obtained through more and more channels. At the same time, higher education needs to weigh all aspects, not only to further ensure that students learn the knowledge and skills they should have, but also to promote their all-round development and become people with outstanding

comprehensive quality and more sound personality. The education mode should also be able to change from "indoctrination" to "interaction", break the boundaries of higher education limited to theory, and establish an open and critical education concept, so as to be consistent with the development of the big data era^[2].

1.3 Reform of teaching management

The school has more structured and unstructured data information, and the value of data information is more prominent. The education management personnel will pay more attention to the development planning and construction of intelligent education, and the construction of intelligent data collection system can help college students obtain high-quality teaching management data. Through in-depth mining and analysis of its data resources, a new education platform based on data application and interactive between schools and the public is developed. And extract more scientific information content from school management and teaching data, combine information to achieve necessary teaching management decisions, and reduce the blindness of decision-making behavior. Let the data reflect the rationality of the education system, and gradually improve it to serve teachers and students with big data. The reform of teaching management will also include the possibility of different assessment methods for specific students. The school is no longer a "factory" processing, but allows greater freedom of development according to the students' personal characteristics. In the age of big data, school management emphasizes more on the cultivation of intelligent management. The construction of big data teaching management platform will greatly promote the education level and management service quality of the school^[3].

2. Big data drives intelligent development and innovation of education and teaching

2.1 Promoting personalized learning

Using the network teaching platform to help students change from traditional passive learning mode to active learning mode, with the support of rich teaching resources shared by teachers, they can achieve the goal of learning anytime and anywhere, and the release of teaching resources will also focus on short and precise learning mode, which will promote students' interest in learning. Diversified learning methods such as knowledge point detection and knowledge expansion will attract more students and ultimately help students achieve fragmented learning. Operations involved on the network platform will generate real data. Students can also be guided according to their own learning situation and pay attention to their learning effects and problems. Through the intelligent data collection system, students' learning and examination behaviors are observed to study the impact of their learning behaviors on the results. All information is formed into a data file for later data analysis. The results of these data are also to understand the real learning situation of students and provide them with personalized learning mode^[4].

2.2 Fine process management

The big data platform can realize the management of students in all aspects and help students to participate in various affairs of the school. In particular, students' employment activities and learning processes can have management records, with data materials as the basic basis, which can avoid the problem of data islands caused by traditional management. With the help of big data, we can comprehensively and deeply analyze the learning situation, find out individual differences, and carry out targeted teaching activities. It is particularly important to improve the effectiveness of teaching and change the low efficiency of teaching. For example, the online preview of students before class, the learning feedback of students in class, and the homework information of students after class all contain a lot of valuable fresh data. We collect these normalized teaching data, conduct in-depth and effective analysis and mining, find laws, find problems, and put forward some personalized learning suggestions, so that the data can serve students throughout the teaching process. The education big data, post practice, innovation and entrepreneurship and other data are real, which makes the static management data become dynamic data, it is beneficial for the school to supervise and manage the employment of students^[5].

2.3 Improve education evaluation

It is beneficial for the intelligent teaching platform to generate education data information, effectively innovate the teaching quality evaluation system, and finally improve the existing single evaluation standard by combining diversified assessment modes. After the teaching platform is built, the teaching evaluation can be set up to dynamically monitor and record the whole process of students' learning, and form a more just evaluation system and comprehensive evaluation physique. To promote students to pay more attention to the learning process, to a certain extent, it can also prevent students from having problems with exams, help students learn more knowledge and refine the knowledge content. The use of education big data can more truly reflect the learning attitude and level of students, promote educators to deeply understand students, and provide convenience for file management and teaching managers based on big data.

2.4 Promoting cooperative learning of students

Teaching should be a process with diversified and rich teaching contents, and it should also be a dynamic collaborative class-

room. Teachers can use the school's big data platform to establish teaching behavior trajectory, and comprehensively evaluate the teaching process and efficiency according to classroom quantitative indicators. As students' learning process is dynamic, teachers' teaching in schools also needs to be more flexible and multi-dimensional, meeting the needs of coordinated development of all students to a greater extent. The use of big data technology means is integrated into the teaching application process. Teachers use the teaching methods of "adjusting to class conditions" and "adjusting to people's conditions" to carry out situational teaching based on real scenes, unit teaching based on overall tasks, thematic teaching based on special inquiry and other teaching methods, which can more comprehensively stimulate the comprehensive improvement of students' ability and quality, so as to better meet the needs of students.

Concluding remarks

It is conducive to the big data platform to carry out effective student learning analysis, which can not only create a customized learning environment and personalized courses for each student, but also timely grasp the students' psychological dynamics by mastering their learning, living conditions and the content they pay attention to, and eliminate the potential risks arising from psychological problems. At the same time, reasonable, challenging and gradually interested learning plans should be set according to the students' learning progress. It can be said that the future education model is the product of big data development, promoting the further development of education in the new era.

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About the author:

Xinglu Huang , (1986-) , Male, Han nationality, Chengdu, Sichuan, master candidate, experimenter, Research Direction: Intelligent Education, laboratory management.

Xiaoshan Gou , (1986-) , Female, Han nationality, Chengdu, Sichuan, master candidate, experimenter, research field: image processing, laboratory management.