



Research on the Intelligent Construction Mode of Vocational Education Based on Big Data Mining

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Abstract. Smart campus has become the main trend of national education informatization efficiency improvement. The realization of all this depends on the research and development of key technologies of smart education, especially the research and development of big data mining and analysis. Therefore, the research on big data mining of key technologies of smart education is the future of smart education. Key factor in development. This paper mainly studies the behaviors of daily teaching and life based on big data mining, integrates various resources, and builds a construction model of smart education.

Keywords: Big data mining · smart education · teaching and learning behavior analysis

1 Introduction

Carry out research based on the concept of “big data”, explore and practice based on the current mode of smart education construction, and realize information through mining and analysis of process data and behavioral data resources of teachers and students in many vocational schools Resource sharing and academic discussion, build a new generation of smart education network education system with high speed, wide popularity, full coverage, and intelligence in schools, realize humanized management, precise management, and realize the color education model of different schools. In the true sense, an open, multi-dimensional learning space and scientific research space are built, and a multi-mode learning environment and scientific research environment are established.

2 Realize Smart Education Management Mode Through Big Data Mining and Data Analysis Algorithm

In response to these types of problems, this paper integrates the data information in the teaching process and management process through data mining, and conducts in-depth research, judgment and analysis of various types of information collected to further solve data management, big data mining, and overall construction of smart campuses.

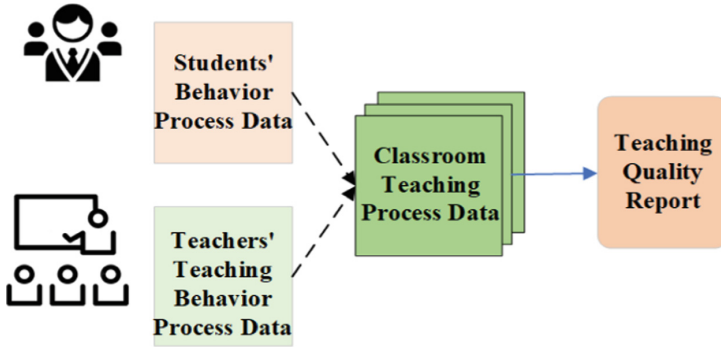


Fig. 1. Formation of classroom teaching data

2.1 Big Data Mining Analysis to Find Hidden Rules of Smart Education from Massive Data

From a large amount of data, data analysis, data display and analysis and early warning are realized through tools such as worksheets, charts, and Kanban. Build a big data analysis platform, mainly from four aspects of data to mine the daily management of the school, the daily behavior of teachers and students, analyze and judge, new education models and laws.

Mining Teaching Process Data

Dynamically collect process data of teachers' teaching behavior and students' behavior, form classroom teaching process data, and form teaching quality analysis reports. See Fig. 1.

Mining Daily Behavioral Data

Analyze the usage data of all students and teachers, including students' class, leisure, life, etc., activities initiated by teachers, resource construction of teachers, etc. All user behavior data can be completely recorded to form behavioral analysis data. Through teachers' data preparation behavior, classroom teaching behavior, social research situation, students' daily learning behavior, life behavior, social behavior and other data, the comprehensive collection of various process and result data can be realized, and output as Feasible talent training models and student management methods provide managers with a visual data management interface, and provide objective and real data support for management decision-making, teaching analysis and other scenarios. See Fig. 2.

Mining Daily Management Data

Establish a digital service hall centered on serving teachers and students and take smart service as the main line, sort out and optimize the work process, realize the intelligence of campus life, and improve the overall service level.

Mining Emotion in Education and Teaching

Wisdom is to make understanding to the extreme. Emotions play a vital role in human thinking, behavior, learning, and memory.

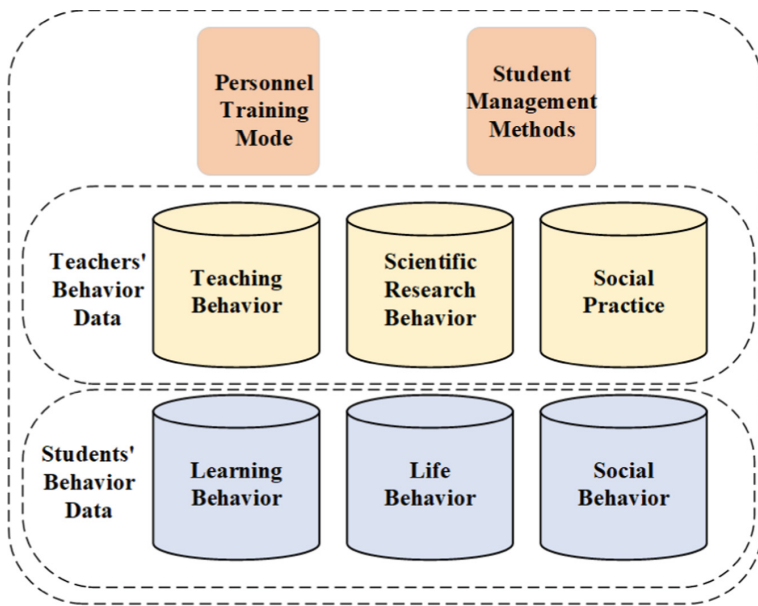


Fig. 2. Teaching Data Model

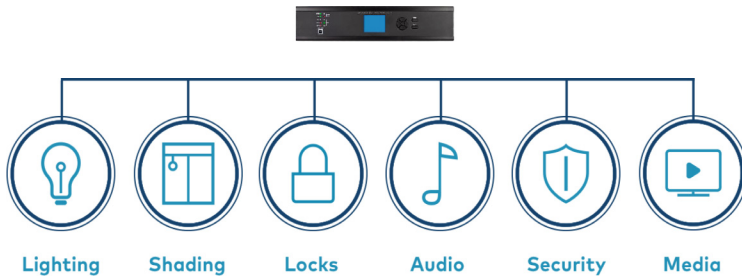


Fig. 3. Sensor Range

One is situational awareness. It is mainly reflected in the ability to perceive the physical environment and learning behavior in smart education. Air, temperature, light, sound, color, smell, etc. are the physical factors of the environment, which directly affect the physical and mental activities of teachers and learners. At present, the development and popularization of domestic sensor technology enables classrooms to monitor indoor noise, light, temperature, smell and other parameters in real time through various sensors, and automatically adjust curtains, lamps, air conditioners, fresh air systems and other related equipment according to preset ideal parameters., to adjust the sound, light, temperature and air in the classroom to a state suitable for learners' physical and mental health. See Fig. 3.

The second is affective computing. The language, state, physical condition, etc. of people when they speak can be calculated. Collect teaching signals in a timely manner,

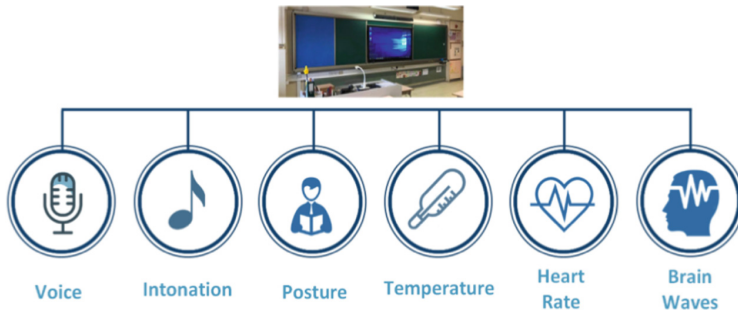


Fig. 4. Affective Computing

and through a large screen in the classroom, teachers can know the students' listening status at any time, and know how the students listen when they teach the key points of knowledge. On this basis, personalized teaching can be carried out, allowing the machine to generate exercises for different students in a targeted manner. In the long run, students can also customize their studies, etc. Make education personalized and precise. See Fig. 4:

Completing emotional computing through data analysis can more sensitively perceive people or things in the real environment, and more accurately predict the general laws and development trends of teachers' teaching and students' learning.

3 Conclusion

With the accumulation of various data on campus, data mining personnel have to dig deep user data from massive data, analyze, find problems, optimize them, and present them in a visual form, so as to conduct intelligent management and decision-making on campus. How to make good use of these data is the key embodiment of smart campus intelligence. The use of educational big data and the fundamental factors for the realization of smart education at present, the daily teaching process and life process of teachers and students are dynamically monitored through the smart education platform, and the teaching management mode is optimized by in-depth mining and analysis of the teaching process data., to help teachers better share teaching resources, maximize the co-construction and integration of teaching resources, guide students in course study and career planning, improve the school's database, and provide data support for major decisions in the school's overall development.

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