Research on the Application of Personalized Training Mode for New Business Talents

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Abstract:Under the impact of technological changes such as "Internet plus", artificial intelligence, big data, cloud computing and blockchain, the business environment has undergone disruptive restructuring and innovation. The digital economy has brought about changes in talent demand and supply, leading to changes in the knowledge system and quality capabilities of business talents in the new era. This trend of change places high demands on the personalized cultivation of new business talents. Based on the analysis of the Spark platform, this article proposes to establish a student "portrait" feature library that can fully depict students' personal characteristics through preprocessing, statistics, and analysis of raw data on campus student behavior, in order to analyze and predict students' learning needs, recommend personalized learning plans for students, and ultimately achieve the goal of providing personalized business talents for the development of the new economy.

Keywords: Spark; personalized learning; personnel training; cultivation mode

1 Introduction

The traditional business school formed in the era of industrial economy pays attention to the function oriented training of professionals who understand management and economy, such as marketing, financial management, logistics management, human resource management. Its talent training mode mainly has the problems of emphasizing theory, ignoring practice, many professional and disciplinary barriers, insufficient integration of industry and education, and the disconnection between talent ability and market demand. With the advance of information technology, the global economy has entered a digital and intelligent era. Under the impact of technological changes such as "Internet +", artificial intelligence, big data, cloud computing and blockchain, the business environment has undergone disruptive reconstruction and innovation. The digital economy has brought about changes in talent demand and supply, which has changed the knowledge system and quality and ability of business talents in the new era.

New business is based on the improvement of traditional business, trying to break the professional barriers and disciplinary barriers, and exploring the new business civilization and new business format with the deep integration of "business technology humanities" brought about by the transformation from industrial economic background to digital economic background[1]. Therefore, the focus of new business education is to cultivate new business talents bred by the integration of digital and wisdom. The professional knowledge background of talent demand is the integration of theory and practice of "professional theoretical knowledge

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+ practical skill knowledge" with information technology as the core. From the perspective of professional theoretical knowledge, it includes not only the traditional function oriented marketing, finance, financial management, human resource management, but also the new industry-oriented wealth management, financial technology, cloud marketing, the professional theoretical knowledge structure integrates the major and related majors. From the perspective of practical skills knowledge, it includes not only business skills, but also the application of business methods and tools, data thinking, innovation ability, etc. the framework of practical skills knowledge integrates the major and new technology analysis tools. The knowledge background of the above talent needs reflects the new business features created by big data, artificial intelligence, mobile Internet, cloud computing, Internet of things, blockchain and other technologies, that is, the innovation, high adaptability and high efficiency of the integration of digital and intelligence[2]. Taking the digital economy as the background, the new business school corresponds to the new business economy driven by the three wheels of "knowledge data wisdom" and the new business civilization and new business ecology deeply integrated with "business technology humanities". It needs to apply new business thinking and follow new business rules. "New business" should actively respond to technological innovation and social change, and cultivate interdisciplinary, compound and innovative talents who understand economy, management and new technology application based on industry orientation.

This article analyzes the requirements of new business for the cultivation of new subject talents, and proposes that new business requires higher personalized training of talents. This is also the problem of cultivating business talents at present.

In response to the above analysis results, this article elaborates on the characteristics and advantages of the Spark platform, and proposes to establish a student "portrait" feature library that can fully depict students' personal characteristics based on the raw data of campus student behavior. This library aims to analyze and predict students' learning needs and recommend personalized learning plans for students, The ultimate goal is to provide personalized business talents for the development of the new economy.

2 Research on talent training mode of new business

This study takes the international business major of Wuhan University of Commerce as a research case for the cultivation of new business talents. There are two main considerations: First, the major is typical and representative. As a local application-oriented university, Wuhan Business School emphasizes the needs of the times and serving the local economy in running schools. The international business major offered by Wuhan Business School has the most initial universal characteristics in the talent training model, which reflects the needs of the times and the development trend of business in recent years. The second is the availability of research materials related to professional personnel training[3]. This research is based on the "Wuhan Business School International Business Professional Talent Training Program (2022)".

2.1 Research ideas

New business is a new thing, but it is not a complete abandonment of traditional business, but a repositioning and reform of business talent training. The training of new business talents must be carried out under the guidance of clear training objectives. With clear personnel training

objectives, the corresponding talent training directions and specifications can be formulated, and then a reasonable curriculum system, teaching methods and effect evaluation can be set up in the specific implementation process. Based on this, this study firstly explores, summarizes and completely restores the experience, basic paths and outstanding characteristics of talent training for international business professionals in case schools at the technical level. analyze.

2.2 Data source

The survey and analysis were conducted with the 2022 graduates of Wuhan University of Business and international business cooperative enterprises as the research objects. A total of 220 people participated in the questionnaire, and 212 valid questionnaires were obtained.

2.3 Measuring tools and methods of use

The questionnaire adopted includes four dimensions of scale questions, which are examined from three aspects: the current situation of business professional training in colleges and universities, the future employment expectation under the existing training mode, and the training suggestions for new business talents. By using the statistical data analysis SPSSAU platform to analyze the results of 212 questionnaires, this paper studies the opinions and feedback of the undergraduate students majoring in economics and management in local application-oriented universities and cooperative enterprises on the business talents training mode of the university.

2.4 Result analysis

Reliability analysis: Reliability analysis, also known as reliability analysis, is mainly used to detect whether the feedback results of samples are reliable. Cronbach's Alpha coefficient (abbreviated as α Coefficient) is to check the internal consistency of the scale. The specific measurement standard is when α When the coefficient is less than 0.7, it indicates that each item in the scale is highly inconsistent and needs to be revised. It can be seen from Table 1 that Dimension I "Current situation of business professional training" α The coefficient is 0.895, and the Dimension II "Future employment expectation under the existing training mode" α The coefficient is 0.863, and the Dimension III "Suggestions for new business talents training" α The coefficient is 0.904, above α The coefficients were 0.7 higher than the threshold value, indicating that each scale had good reliability.

Table 1. Cronbach Reliability Analysis

Dimensions	Items	α coefficient
Current situation of business professional training	5	0.895
Future employment expectation under the existing training mode	5	0.863
Suggestions for New business talents training	5	0.904

Descriptive statistics: It can be seen from Table 2 that, according to the analysis of the questionnaire, in the three dimensions, the average of the expected future employment score under the existing training mode is the highest, 2.863; The average score of the status quo of business professional training is the lowest, 2.175. In Dimension I "Current situation of business professional training", the average score of project 3 "Strong and high basic business ability training" is the highest, 3.243; The average score of Item 4 "The school attaches great

importance to the cultivation of modern business professional quality" is the lowest, 2.047. In dimension II "Future employment expectation under the existing training mode", the average score of Item 1 "You have a good understanding of your future major and know your own efforts and direction" is the highest, 3.014; The average score of Item 3, "Can be directly competent for relevant jobs after graduation", is the lowest, 2.519. In Dimension III "Suggestions for new business talents training", the average score of Item 2 "You think that professional courses should be closely combined with digital technology" is the highest, 2.782; The average score of Item 5 "Strengthening the study of business theoretical knowledge" is the lowest, 2.015.

Table 2. Descriptive Analysis

Dimensions	**Items**	**Mean value**
Current situation of business professional training	5	2.537
Future employment expectation under the existing training mode	5	2.863
Suggestions for New business talents training	5	2.175

Correlation analysis: Correlation analysis can be used to measure the degree of correlation between variables. It can be seen from Table 3 that there are significant differences between Dimension III "Suggestions for New Business Talents Training" and Dimension I "Current Situation of Business Talents Training", and Dimension II "Future Employment Expectations under the Existing Training Mode". The correlation coefficient values are 0.713 and 0.754 respectively, and the correlation coefficient values are greater than 0, which means that Dimension III "Suggestions for New Business Talents Training" and Dimension I "Current Situation of Business Talents Training", The second dimension, "future employment expectation under the existing training mode", has a positive correlation.

Table 3. Correlation Analysis

	Current situation of business professional training	Future employment expectation under the existing training mode	Suggestions for New business talents training
Current situation of business professional training	1		
Future employment expectation under the existing training mode	0.812	1	
Suggestions for new business talents training	0.713	0.754	1

2.5 Analysis conclusion

Through the analysis of the international business major of the case school, the project team carried out analysis from three aspects: the training objectives of new business talents under the background of digital economy, the exploration of new business talents training mode, and the application of new technologies based on intelligent support such as artificial intelligence.

The research results are discussed below.

Break through dogmas and routines, with a more open and compatible attitude, constantly refine new thinking, expand new perspectives, and enhanced high-level innovation, cultivating new business talents with stronger innovation awareness and ability, and able to actively carry out innovative and entrepreneurial practices, is a major direction of future business education.

Based on the new business concept, to solve the problem of homogeneity in the training of business professionals in business colleges, business colleges should combine the advantages of disciplines, integrate the regional economy into it, link the development of disciplines with the regional economy, integrate the characteristics of regional economic development into the talent training objectives, and cultivate professionals who are connected with the development of the economic market[4]. Due to the inherent attribute of Local Application-oriented Universities Based on the region and radiating the surrounding areas, the key goal should be to cultivate local new business talents and serve the needs of local economic and social development. At the same time, the local economic and social development has also provided a teaching practice base for the training of new business talents, creating natural conditions for the integration of industry and education and the coordinated development. On the one hand, local colleges and universities should be familiar with their own regional business environment and industrial development status, and cultivate marketable local new business talents[5]. On the other hand, they should make good use of the advantages of local leading industries, emerging industries and characteristic industries to continuously enrich and update the new business education and teaching content.

3 Design of personalized talent cultivation plan based on Spark student portrait

The talent cultivation based on the new business concept should be optimized in combination with the regional industrial development plan and the national development strategy to meet the development needs of modern society and personal growth needs. In the digital economy era, students' personalized learning needs are more complex. In order to change this situation, the new business theory teaching should make full use of advanced information technology, guide students to participate in all aspects of teaching, change passive learning into active learning, understand the theoretical teaching content from multiple angles and at multiple levels, and meet the needs of students' personalized development through the implementation of personalized teaching methods to achieve common progress of individuals and society[6].

The accumulation of campus student behavior data provides a data foundation for obtaining personalized training plans for students. This article is based on the raw data of campus student behavior on the Spark platform. After preprocessing, statistics, and analysis of the raw data, a student "portrait" feature library is established that can fully depict students' personal characteristics and various aspects of campus behavior. It predicts students' learning needs, recommends personalized learning plans, and achieves the goal of providing personalized business talents for the development of the new economy.

3.1 Technology Architecture of Spark

Spark is a distributed big data computing engine based on memory, and its overall architecture is shown in the following figure 1.

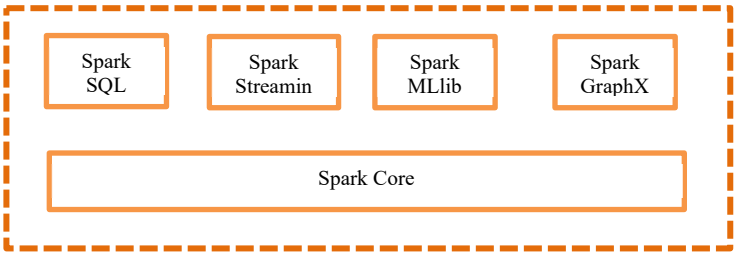

Fig. 1. Technology Architecture of Spark

Spark's built-in modules include Spark Core, Spark SQL, Spark Streaming, Spark MLlib, and more. Spark Core implements the basic functions of Spark, including task scheduling, memory management, error repair, and interaction with the storage system. It supports data sources such as Hive tables; Spark Streming is a module for real-time data computing, which includes many operational APIs; Spark MLlib includes clustering algorithm, regression algorithm, classification algorithm and collaborative filtering algorithm. In addition, Spark also has the advantage of being able to integrate well with different cluster managers and run independently, not only in HadoopYarn, but also in Apache's Mesos and Spark's built-in independent scheduler, which are perfectly compatible.

3.2 personalized talent cultivation system architecture Based on Spark

The system (Figure 2) is based on multi-source data such as student consumption, grades, academic attendance, access control, and book borrowing to analyze student behavior, predict student learning needs, and recommend personalized learning plans. First, preprocess the data, integrate multi-source data, and store the data in the distributed system HDFS to ensure the consistency between the data and the data in the relational database, so that the data can be easily converted between the distributed storage and the relational database. At the same time, machine learning algorithms such as clustering analysis, association rule mining, collaborative filtering, etc. are parallelized on Spark through K-means, and this technology is applied to the distributed processing of historical data to complete clustering segmentation of student behavior, prediction and early warning of student learning behavior, personalized recommendation of student learning courses, etc. Finally, the analysis results are presented in a visual form using a web framework and ECharts technology, and friendly user query interaction functions are provided.

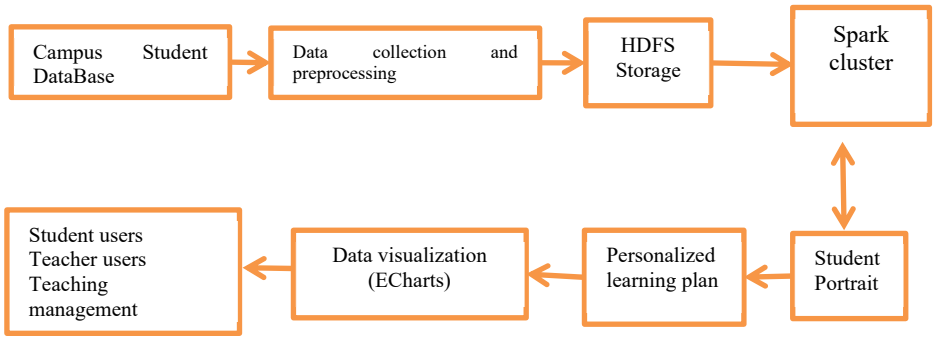

Fig. 2. Personalized talent cultivation system architecture Based on Spark

Data collection and preprocessing: Complete the collection and storage of data, and integrate and preprocess various heterogeneous data to ensure data integrity and uniformity. Provide personal information, campus consumption data, classroom attendance data, library access and book borrowing records, and other data for the system, which is the underlying data support of the entire platform.

Spark data processing: based on Spark big data analysis platform, it analyzes and processes various data provided by the data perception layer, and uses clustering, collaborative filtering and other algorithms to mine the association relationship and potential value between data to provide storage and distributed computing services.

Data interaction service: Realize data interaction through the API provided by Spark SQL component, associate the background offline analysis and calculation results with the foreground data visualization component, and realize data conversion between distributed data storage and relational database.

Data visualization: The Spring MVC framework of JavaWeb and Echarts component are used to realize the visualization of data processing results, and charts are used to provide users with results display to achieve a friendly user interface.

3.3 "Intelligent" Curriculum Learning System Based on Spark

Education is a subject that studies people's learning behavior. Big data analysis technology can "digitize" people based on factual data, and mine valuable implicit information and interpret it. Therefore, the user portrait technology based on big data will be applied to the education and teaching process, mining the business teaching, learning and evaluation and other conditions that are in line with the actual situation of students and teaching, so as to formulate and implement education and teaching policies and strategies with a targeted view, and reform the traditional business education philosophy and education thinking from a deeper level[7]; Use big data technology to present the micro performance of each individual student in the teaching process, so as to teach students in accordance with their aptitude and carry out personalized education; Use big data technology to support and optimize various decision-making and control activities in teaching management, such as training program formulation, teaching plan revision, teaching process control, teaching effect evaluation to further improve the quality of education and teaching.

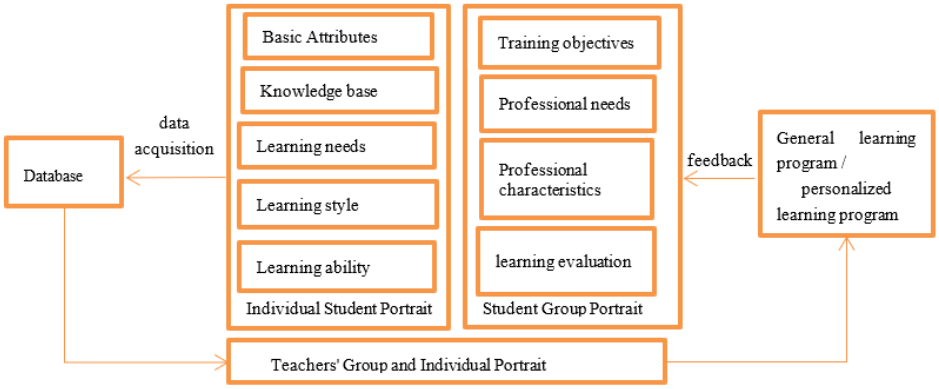

Fig. 3. Intelligent Learning System Based on Spark

The Intelligent Learning System (Figure 3) adopts online and offline mixed mode, including general programs and personalized programs. The general learning program is for the knowledge that the students must master according to the training objectives and characteristics of the specialty. Personalized learning program is provided by teachers according to their own actual needs to learn independently.

The theoretical teaching method is embedded with information technology development, data analysis and intelligent data processing means, so that students can become the main body of teaching, improve students' participation in teaching, shorten the distance between students and theoretical teaching, resolve students' difficulties in learning theoretical knowledge, and promote students' understanding and mastery of theoretical knowledge.

For example, before learning theoretical knowledge, students are required to preview and collect relevant content of knowledge points through teaching space, micro classes, teaching websites, teaching animations, teaching games, teaching APPs, etc. They can also shoot their understanding into small videos and share them in real time on communication platforms such as class QQ groups and WeChat groups[8]. Students and teachers can discuss the collected data and small videos taken by students at any time, Find and understand problems from it; In class, teachers can discuss the correct and wrong information collected by students and the small videos taken by students respectively, and at the same time, they can further deepen students' understanding of theoretical knowledge with the demonstration of cases. After class, let the students find out the content related to or similar to the theoretical knowledge they have learned in life, and integrate the theory into life practice.

3.4 Establishing personalized curriculum resource recommendation system based on collaborative filtering algorithm

The core of the construction of intelligent curriculum system is to solve the problem of "information overload", that is, there are many learning resources on the network. In the face of massive curriculum resources, students are often difficult to choose, lost in confusion and impatience, and lose interest in learning. This project proposes to build a collaborative filtering

recommendation model to realize personalized and customized recommendation of course resources for students, and optimize and improve the collaborative filtering model with K-means algorithm (Figure 4).

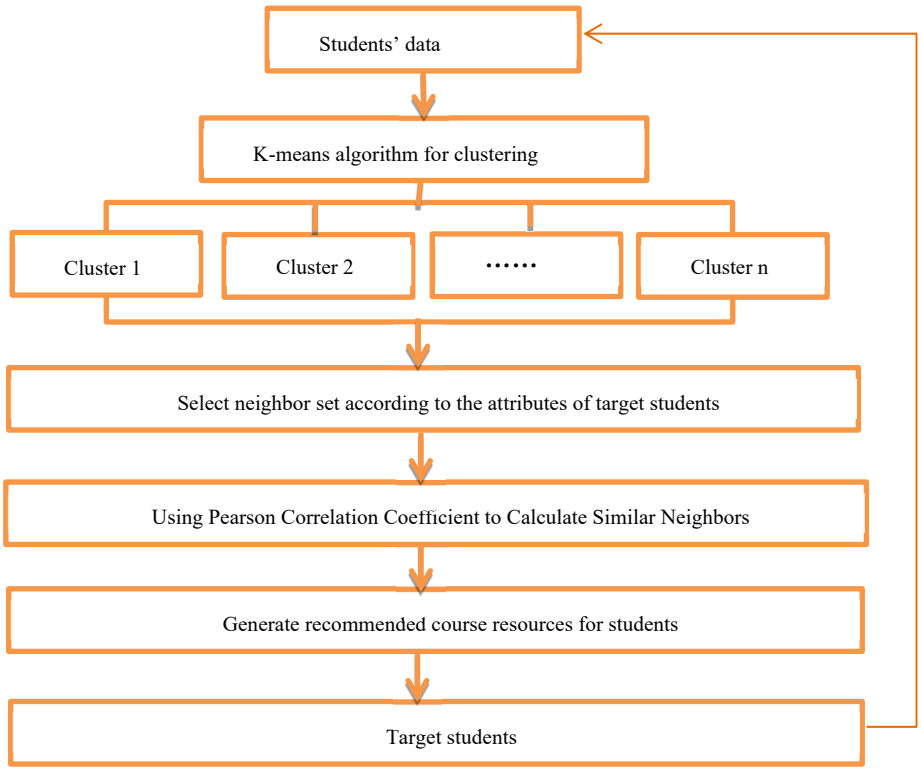

Fig. 4. Collaborative filtering recommendation system based on K-means algorithm

Collaborative filtering is one of the most effective recommendation technologies. It can record and extract the user's personality information, and use this information to establish a user model. The recommendation system established using the recommendation algorithm actively recommends information that meets the user's interests to users. However, for recommendation tasks in big data environment, the recommendation efficiency of conventional collaborative filtering is low. A feasible solution is to use K-means clustering algorithm and collaborative filtering to form a combined recommendation algorithm[9].

Collaborative filtering recommendation model can implement personalized course recommendation for student users, but the model has problems of cold start and data sparsity. Among them, the cold start problem is divided into the problem of new student users and the problem of new curriculum resources. The problem of new student users is that a newly registered student has not yet evaluated and scored the curriculum resources, and there is no corresponding historical browsing record. The collaborative filtering recommendation model cannot predict the curriculum resources that the student user is interested in, and it is also unable to recommend the curriculum resources that students may be interested in. K-means clustering algorithm is a commonly used partition clustering method. Its principle is to take random K

objects in a data set as the cluster center, and other data objects in the data set will automatically be grouped with the nearest cluster center according to their distance from the K data objects; Then iterate over these classes to make the data objects move in the class, calculate the average value according to the update of the data in the class, and reallocate the data objects, so as to improve the class until the maximum number of iterations is reached or no new clusters are generated.

The collaborative filtering personalized recommendation model optimized by K-means algorithm can find a suitable set of neighbors for the target student users according to the initial attributes of the students at the time of registration, such as age, grade, major, gender, etc. The collaborative filtering personalized recommendation model can recommend the required curriculum resources for the target student users and better serve the students even if the target students have just registered and have not scored any curriculum resources, Improve students' interest in learning.

Invoke algorithms to cluster course grades and provide input for subsequent feature label construction. The K-means algorithm of this system is written in Python language, and the system framework is written in SpringBoot. Therefore, it involves Java calling Python methods. The specific code is as follows:

{"python"，"path\\main. py"，courseId，String. valueOf (k)}; //Path is the Python file path

Process proc = Runtime.getRuntime( ).exec(args1); // Execute py file

The Python file accepts input parameter codes as follows:

if _name_=='_main_'：

args= [ ]

for i in range (1, len (sys.argv))：

args.append (sys.argv[i])

Analysis (args [0], int (args [1]), int (args [2]), args [3])

The research results show that the improved collaborative filtering recommendation model can well personalize and customize the recommended curriculum resources for students, and can effectively enhance students' learning interest and efficiency.

3.5 Implementing a precise teaching mode based on student portraits

The primary task of the personalized learning system is to accurately identify students and their needs, and on this basis, carry out accurate delivery of hierarchical and differentiated learning resources. Using big data analysis technologies such as data mining and artificial intelligence to intelligently analyze the data generated in the teaching process, and deeply depict the students, can objectively, comprehensively and truly reveal the students' learning situation. The real data will not tell lies. It is more real than the teacher's experience and judgment. It can avoid the teacher subjectively believing that he/she knows the students and that his/her ideas are consistent with the students' needs[10]. Under the background of big data technology support, multiple and credible evaluation dimensions are conducive to teachers' achieving accurate teaching, optimizing teaching decisions, providing accurate and effective learning guidance for students,

and helping students fully stimulate their internal potential to achieve personalized learning and growth.

The construction process of student portraits plays a guiding role in the theoretical analysis, application and practice of portraits. The specific construction process includes four stages: automatic data collection, intelligent data processing, portrait model construction and optimization, and portrait application (Figure 5).

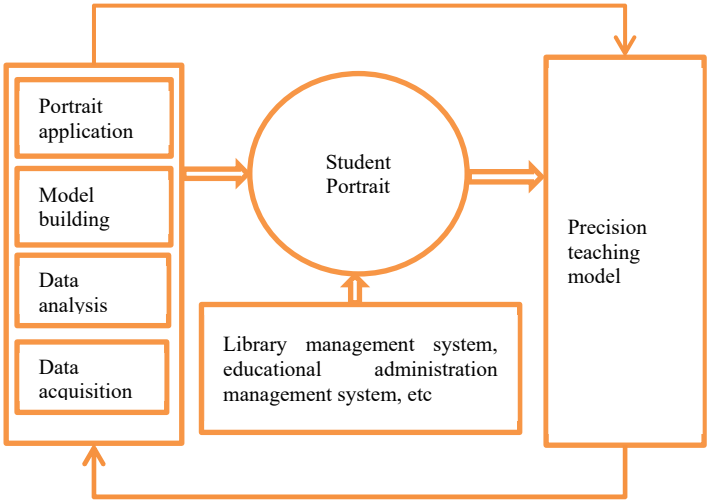

Fig. 5. Precise teaching mode based on student portrait

Automatic data collection: The data acquisition module includes online data acquisition unit and offline data acquisition unit. It collects different data sources in various fields, including cross domain and cross platform data sources, and stores the original data to the data server through the data gateway (Figure 6). The system can select the database system most relevant to students' learning behavior from various application systems in the school's smart campus to form a student portrait dataset, such as Educational Administration Management System, Book Management System, Network Teaching Platform, All-in-one Card System.

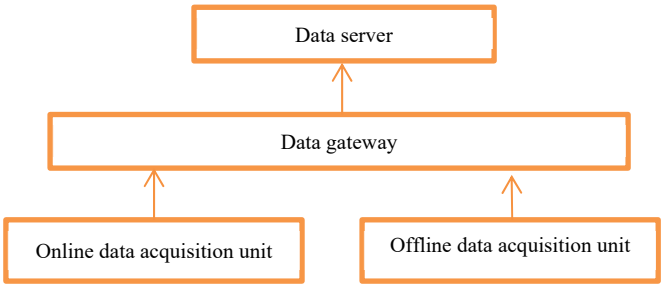

Fig. 6. Data acquisition module

Intelligent data processing: Due to the diversity of the original data collected, affected by various factors such as inconsistent data standards and repeated data, it is generally not possible

to directly use the collected original data for user portraits. According to the data standards, the non-standard and incomplete unconventional data shall be preprocessed[10]. The multi-source data processing module processes the collected data through a series of processes such as data cleaning, data integration, and data transformation to improve the data quality. By using regression, decision tree, clustering and other methods to fill in missing values, smooth noise data, and remove abnormal data. For multi-source data sources, combine data from different business areas to reduce the redundancy and inconsistency of data sets. In general, according to the data conversion rules, data cleaning rules, sharing rules, classification rules, information indexing and other standardized models, the module carries out information preprocessing through ETL tools and crawler engines to complete the orderly and standardized cleaning, processing, storage and use of different information (Figure 7).

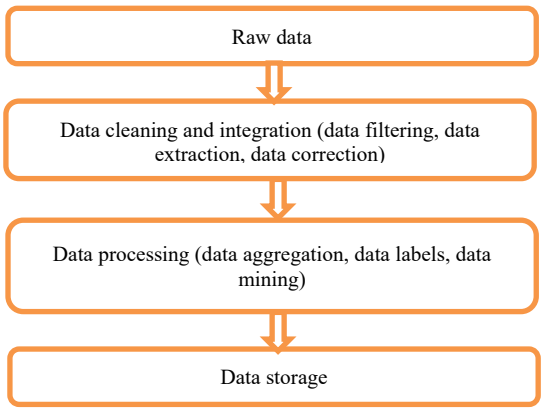

Fig. 7. Data intelligent processing module

Automatic model construction and optimization: The intelligent building program module includes student tag rule library, filter rule library, mapping rule library, and intelligent building model program. After the intelligent construction program module is started, the system calculates the student portrait tag from the tag rule library, filter rule library, and mapping rule library through the intelligent construction program, automatically marks the student tag, and finally forms the student portrait.

Portrait application: Apply the student portrait constructed based on data facts to education and teaching, and implement the precise teaching mode. Realize accurate analysis of learning situation and overcome the shortage of teachers' subjective judgment of learning situation based on experience. Assisting in formulating accurate teaching objectives, overcoming the deviation between teaching content and teaching objectives in the teaching process, the inconsistency between teaching content and students' acceptability, and the low matching between teaching methods and teaching content. Practice precise personalized recommended learning, overcome the inconsistency between teaching content and students' learning acceptability, and help students' personalized development; With the help of the network teaching platform, based on the process data, explore the precise teaching evaluation, and break through the traditional teaching evaluation model limited by the results.

3.6 Building an intelligent quality monitoring and evaluation system

At present, the daily teaching of business subjects adopts a hybrid teaching method combining online and offline courses. Due to the lack of information technology, the difficulties in obtaining various behavioral data, and the failure to effectively integrate the data of students' learning, teachers' teaching, and teaching management for diversified analysis, students' learning experience, learning process behaviors, learning outcomes cannot be completely collected and processed through existing learning platforms or relevant software, and accurate and timely learning feedback cannot be achieved, Unable to effectively evaluate the effectiveness of classroom teaching. Teachers can not fully grasp the learning process and progress of students, and can not accurately grasp the actual situation of each student, resulting in teachers can not timely and effectively optimize the curriculum design.

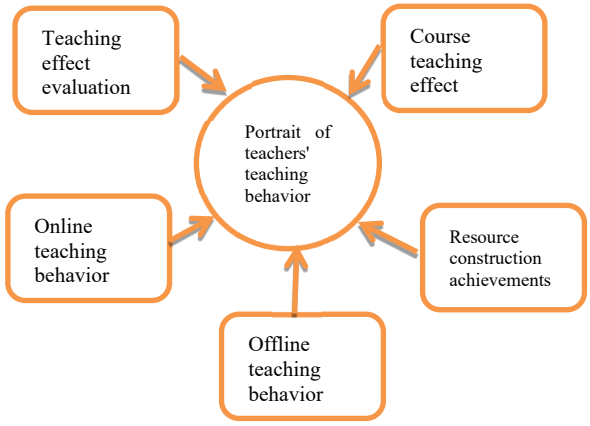

Fig. 8. Teachers' Behavior Portrait Based on Big Data

Build a teaching quality monitoring platform (Figure 8), through big data technology adopt a multi-layer architecture, effectively integrate big data processing, data exchange and sharing, relational and statistical big data storage, authority management, and big data analysis and mining, achieve in-depth analysis and accurate control of all data, automatically provide information feedback and adjust teaching and teaching management strategies according to the evaluation system, supporting services, highlight self-management and improvement (Figure 9). Realize timely, accurate, scientific and effective quality monitoring, and create the effect of closed-loop teaching quality monitoring and iterative improvement that can automatically find problems and automatically feedback and adjust under the data drive.

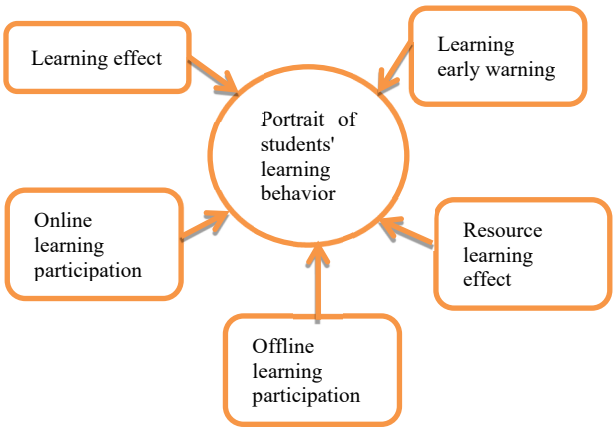

Fig. 9. Students' Behavior Portrait Based on Big Data

The system is mainly designed with three major functional modules, namely student portrait analysis, data collection and processing, and system management module. The student portrait module is the core part of the entire system, including data preprocessing and vector transformation. By using model training, students' ability portraits and feature labels can be constructed, which is the main implementation part of business logic and algorithms; The data collection module is the data source for the entire system algorithm, including adding, deleting, modifying, and querying the required data for the algorithm; The system management module is the basic module, operated by the system administrator to maintain basic data and establish system user permissions to ensure the normal operation of the system.

The system uses relational database MySQL and non relational database Redis, and uses the mybatis persistence layer framework for paging and other operations; The backend is developed using the SpringBoot framework. After the system development is completed, deploy it to run on the Linux operating system.

The intelligent talent training mode takes the construction of intelligent platform as the core, integrates resources, learning, communication and management, provides Internet based classroom learning activities in the form of digital learning, and realizes the accumulation and training of high-quality teaching resources. On the basis of existing single major teaching resources, the platform gives full play to its advantages, expands its thinking and integrates resources. With the concept of "intelligence+specialty group", combined with the construction foundation of each specialty, and by using the Internet, cloud computing, big data, artificial intelligence and other technical means, through cross specialty comprehensive training, professional innovation integration teaching, we will create first-class innovative and composite application talents, and further improve the social function of regional economic services.

4 The Learning Effect of Intelligent personalized Education

In the institutions where the project members are located, the intelligent personalized training of business talents is being implemented. In order to analyze the implementation effect of

intelligent personalized education, project team members conducted a questionnaire survey on 148 international business students, and obtained the following conclusions.

4.1 Conducive to early warning for learners' learning

In the Internet era, online learning is an important learning strategy. A large amount of data on learning behavior has been generated on various online education platforms. According to these data, it is difficult to master the learning situation of learners on the network platform[8]. Through the collection and analysis of data, we can improve the learning mode, provide early warning for online teachers, and enable them to improve the learning process by adjusting teaching strategies (Figure 10).

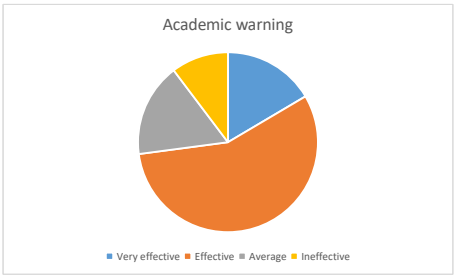

Fig.10. Evaluation of academic early warning effect

4.2 Meeting learners' personalized needs

In the context of big data, the diversity of learning information makes it difficult for students to adapt to traditional classroom teaching, so students' personalized and accurate service needs become particularly important. Through the construction of learner portraits, we can accurately match users' personalized knowledge needs from a large amount of information, and constantly improve the intelligent, situational and accurate level of personalized learning push services.(Figure 11)

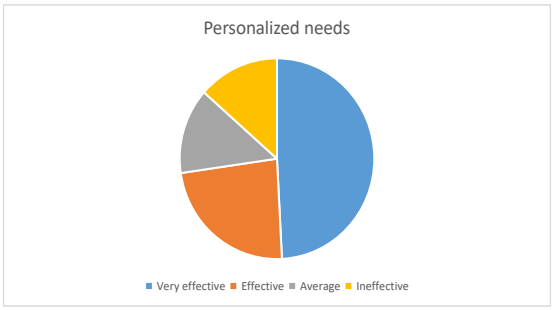

Fig. 11. Evaluation of individualized teaching effect

4.3 Realizing the push of learning courses and learning environment

Most online course platforms provide multiple videos for the same knowledge point, which brings about choice problems for learners[9]. If you choose a video that is not suitable for you,

it will greatly waste your learning time and the learning effect is not good. Secondly, whether learners can retrieve the key words when retrieving relevant courses becomes the key to whether they can find relevant instructional videos. Therefore, it is the top priority to recommend suitable courses for learners .(Figure 12)

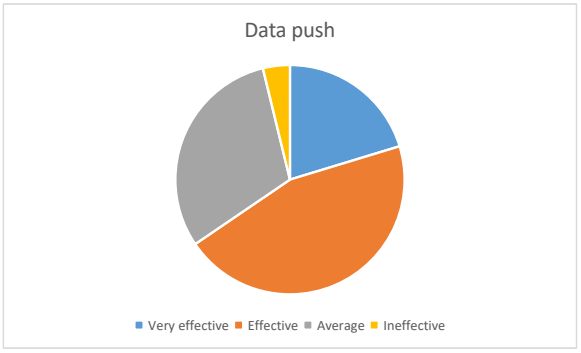

Fig. 1. Evaluation of data pushing effect

4.4 Influence of Intelligent Personalized Teaching Mode on students' learning interest

The project team measured the impact of intelligent personalized teaching mode on students' learning interest from two aspects: "Investment of professional learning time" and "Effectiveness of learning plan formulation" (Figure 13). It can be seen from the following table that after the implementation of the personalized teaching mode, the time invested by students in professional learning has increased significantly; More detailed and willing to implement the learning plan. Objectively speaking, the intelligent personalized teaching mode plays an obvious role in improving the effect of professional education.

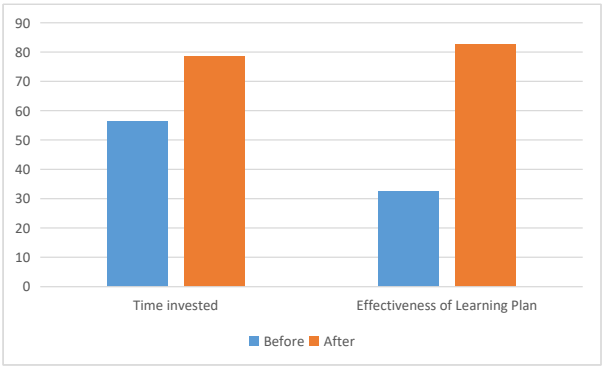

Fig. 2. Evaluation of Intelligent Personalized Teaching Mode

5 Conclusions

The essence of accurate teaching in the era of education big data is to use big data analysis technology to accurately identify students, find out the learning situation, respect differences,

and layered teaching, break the ambiguity and inefficiency of traditional empiricism teaching, and develop towards student-centered personalized teaching. Precision teaching should be truly student-centered. The key to its implementation is to accurately identify students and their personalized needs. When implementing teaching, it should be based on the actual situation of each student, which is consistent with promoting students' personalized development.

With the construction of personalized intelligent teaching system as the core, we will realize the design of precise teaching scheme based on student portraits. By using the Internet, cloud computing, big data, artificial intelligence and other technical means, we will make efforts from the innovation of education and teaching concepts, the reform of talent training mode, the construction of disciplines and specialties and other ways to keep up with the trend of regional industrial development and the needs of the employment market, and actively adapt to new technologies, new industries, new models The new era of new business types and new economy provides high talent guarantee for the development of regional economy.

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