Characteristics and Effective Application of Online Education Platform for Ideological Theory Courses in Universities Based on Big Data Technology

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Abstract

As the main position of knowledge innovation, colleges and universities should make great efforts to collect, sort out and make rational use of the related technologies of big data. The online education of ideological theory courses in colleges and universities has entered the era of big data from the network era, and has the distinct characteristics of sharing educational resources, free study time, increasing interaction between teachers and students and being scientific. In this paper, combined with the status quo of the application of big data platform in the field of distance education, we deeply analyzed and explored the opportunities created by the era of big data for the reform of ideological theory courses in colleges and universities, and also explored the effective application of the online education platform of ideological theory courses in colleges and universities based on big data technology, hoping to inspire technicians in related industries.

Keywords*: Big data, College ideological theory course, Online education platform, Apply*

Ⅰ. Introduction

Big data technology can be fully applied in basic education and higher education, and its application field has been extended to lifelong education. The educational big data system is all-encompassing, including not only abundant teaching resources, but also various teaching methods and educational management modes, which can run through all educational systems [1]. However, in order to further enhance the teaching effect of online teaching platform and make it truly “intelligent”, it is necessary to integrate big data technology into network technology, use big data analysis technology to collect users' learning behaviors, change traditional learning methods, take students as the center, and provide personalized education services for different students, so as to realize the revolution in the field of education [2-3].

The ideological work in universities is the work of educating people, which focuses on how to shape people, how to transmit and spread the latest achievements of Marxism in China by using advanced technology platform, and let college students in the new era establish a sense of mission to seek rejuvenation for the Chinese nation and happiness for the Chinese people, which is a basic consideration for us to improve the realm of moral education in universities.

Ⅱ. Application Value of Online Education Platform Based on Big Data Analysis

A. Students' Autonomous Learning

The online education platform expands all kinds of data into a big data education information database by collecting data such as students' learning time, understanding degree of each knowledge point and use of teaching tools, so as to realize the transformation of massive data into regular information, and the regular information gathers into knowledge, which guides education and is constantly refined layer by layer, thus achieving the purpose of students' autonomous learning and teachers' teaching in accordance with their aptitude, and effectively improving the quality of education.

B. Anytime, Anywhere Learning

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Research shows that online learning behaviors mainly include resource retrieval, information processing, knowledge management, online communication and cooperation, self-reflection and supervision [4]. By filtering and sorting out the data of the pages visited by learners, seven pages with the highest frequency of visits are obtained: learning space home page, courseware page, homework page, question and answer page, notification page, note page and statistics page. The distribution of page access ratio is shown in Figure 1.

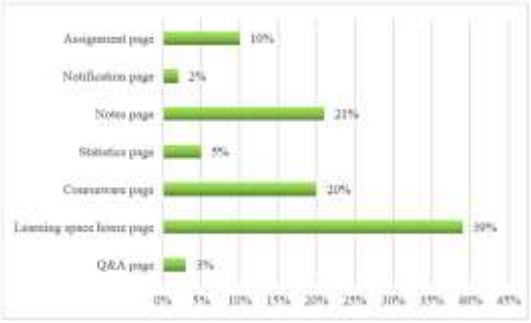

Fig.1 Figure of the Total Number of Times Learners Visit the Page

On the online education platform based on big data analysis, teachers and students can be free from the limitation of time and space. By sharing resources in the cloud, learners can easily obtain the learning resources they need, including commonly used learning videos, online answering questions, analysis and testing, communication and interaction, etc., so as to further enhance their learning ability and level. Using the online education platform based on big data analysis, you can master the scientific learning methods suitable for your study habits through mobile portable devices or PC.

C. Personalized Education

Personalized education based on big data can collect more and more complete data, such as students' performance in class, including classroom practice, homework, performance in class, times of raising hands in class, time and accuracy of answering questions, frequency of teacher-student interaction and degree of attention in class. Implement individualized education according to individual differences of students [5]. Individualized teaching services and independent teaching methods enable students to make study plans according to their individual differences, and transform the traditional education methods into student-led and teacher-assisted education methods.

Ⅲ. Opportunities Created by the Era of Big Data for the Reform of Ideological Theory Courses in Universities

A. Enrich the Form of Communication

In the traditional era, the content of ideological theory course mainly depends on books, classrooms and broadcasting, which will cause the problem of limited information dissemination and lagging information dissemination. With the advent of the era of big data, new classes such as massive open online course, micro-class, and flip class came into being. Students can search for relevant learning resources according to their own needs and ideas anytime and anywhere; At the same time, you can express your thoughts in the form of text, audio, video and animation through computers, mobile phones, tablets and other mobile terminals, and communicate with teachers in time, which is conducive to enriching the content of ideological theory courses.

B. Broaden the Horizons of Class Educators

In the era of big data, ideological educators can not only preach to students in class, but also share data and information through the network platform, and apply the convenience and speed of big data to the teaching of ideology [6]. Data information breaks the boundaries of time. In the past, ideological educators could only access

relevant knowledge in the library within the specified time, or meet with more experienced ideological education predecessors to ask questions, communicate, discuss and consult. In the era of big data, university ideological educators can access teaching materials and data on the Internet at any time. They can also communicate with teachers from other universities through the network platform at any time, thus opening up the thinking of university ideological education.

C. According to the Diversification of Teaching Reform

Big data is conducive to improving the teaching methods of ideological theory courses. College ideological educators can develop online and offline education modes through the Internet and mobile terminals, obtain online learning data of students through online platforms, and then use big data technology to analyze them, so as to better supplement the content of offline teaching, so as to meet the growing learning needs of students. Big data is conducive to enhancing the pertinence of ideological theory courses. Collect students' learning data through big data technology, then analyze the data, classify the students who have doubts and incomprehensible knowledge points, and offer different kinds of online courses according to the different needs of different students. Students can choose independently according to their individual needs [7].

Ⅳ. Characteristics of Online Education Platform for Ideological Theory Courses in Universities

A. Sharing Educational Resources

The greatest advantage of online education platform is the sharing of educational resources. In the past, teaching was limited to textbook knowledge and some reference books. Nowadays, online education platform has broken the limitations of teaching resources and realized the mutual circulation of resources between different regions and different disciplines. Many educational units have also provided teachers with a unified platform for preparing lessons, which not only ensures the richness of learning content, but also ensures the quality of teachers' lecture content [8]. In addition, students can take the initiative to look up the learning content they are interested in online and find their own learning methods.

B. Freedom of Study Time

Online education platform carries out teaching activities through the Internet, so long as it is in the place covered by the network, it can learn by mobile phone or computer, thus avoiding the limitation of space.

In traditional teaching, if students take time off for some reason and can't attend classes, it is very likely that they will miss the study of key contents, which will lead to the disconnection of the course schedule. They can only make up their studies by consulting alone or by self-study, but the online education platform can play back the teacher's courses, so that students won't miss any wonderful courses. For many social workers who take exams while working, the online education platform brings them a lot of convenience, which can be studied and consolidated at any time. This freedom in time and space is the greatest advantage of the online education platform.

C. Increase Teacher-Student Interaction

During the lecture, students can see the teacher, but the teacher can't see the students, which can effectively relieve the students' nervous state. When the state is relaxed, students can better absorb the knowledge learned in class. Students' questions are basically carried out in the comment area of the platform. After the teacher sees them, he can find the right time to answer them according to the students' questions, thus avoiding the confusion of classroom order. Teachers can summarize students' problems and master students' knowledge points, which not only increases the interaction between teachers and students, but also makes the communication between teachers and students more convenient.

D. Scientific Evaluation of Educational Effect

Using big data to evaluate the effect of online education of ideological theory courses in universities, we no longer need to base our analysis on a few assumptions that have already been established before collecting data. Let the data sound, we will notice the existence of many connections that we never realized before [9], and effectively solve the problem of implicit education effect evaluation.

For example, the “unstructured data” produced by students' activities such as browsing web pages, watching videos, using mobile phones, daily consumption and so on in school can be presented intuitively in the form of “data”, which can not only scientifically grasp the whole picture of students' thoughts, but also scientifically predict their future behavior trends. Therefore, using big data to evaluate the effect of online education of college ideological theory can ensure that all evaluation contents are supported by data, and lay a solid foundation for the scientific evaluation of online education effect of college ideological theory courses.

Ⅴ. Effective Application of Online Education Platform for College Ideological Theory Course Based on Big Data Technology

A. Implement Mixed Teaching

O2O teaching mode is also called “online and offline mixed teaching mode”, but its mixed structure not only simply includes the mixing of online teaching and classroom teaching in physical space outside the structure, but also pays attention to the interaction and mixing of participants inside the structure, and the various ways of assessing the total scores of courses. Comprehensive main aspects, the author summarized the O2O teaching model into the following three-tier mixed structure-online and classroom teaching mixed; Single person and group cooperation mix; Teachers and students, students and students, teachers and teachers interact and mix. The structural diagram is shown in Figure 2 below.

Fig.2 Mixed Structure of O2o Teaching Mode

On the specific implementation path, it can be roughly divided into these processes:

(1)Push teaching resources in time

The related resources of course teaching, such as syllabus, courseware, materials, videos, etc., are put in the ideological theory class, and immediately transmitted to the students, so that the students can know what the teacher is going to say in this class on their mobile phones, so that they can know exactly what to say, and there will be no structural difficulties in understanding. At the same time, in terms of specific resources, we should put the latest central policies in place, so that our students can pay attention to current political affairs and state affairs.

(2)Interactive learning/interactive study

The online education platform of ideological theory course has many functions, such as check-in, online test, brainstorming, questioning and answering, private chat, questionnaire, shaking, etc. Through check-in function, students' attendance can be known in real time, and one student can be randomly selected to answer questions through shaking. Through online test, students' overall learning situation in a certain chapter can be known. Through brainstorming, questioning and answering, students' learning enthusiasm can be increased.

(3)Interactive communication and answering questions

Students can pass on their confusion and questions in learning to teachers through the online education platform of

ideological theory course, and teachers can immediately answer questions for students, which can enhance the whole learning process and improve the learning effect. At the same time, teachers can check students' learning progress and learning records, remind students to learn teaching resources and complete course assignments in time, and strengthen communication and contact with students by issuing notices and chatting privately.

(4)Establish a scientific scoring system

On-line education of ideological theory course gives students who are more active in learning a certain amount of experience points, and after completing certain learning tasks, they will get the experience values set by teachers, which reflects the enthusiasm and initiative of certain students in learning from one aspect.

(5)Timely feedback after class

Feedback students' learning situation immediately after class to improve students' ability to understand society and analyze problems. When there are some practical teaching courses, we can design the specific requirements of the courses and the specific steps to carry out the practice, supervise the students' completion and feedback the students' learning effect.

B. Realize the Big Data of the Teaching Content of College Ideology Course

(1)Build a big data information base

First of all, universities should negotiate and cooperate with education departments, relevant education and training institutions and social organizations, and sign relevant confidentiality agreements to allow universities to collect their data resources and apply them to ideological theory courses. In the whole society, we should mobilize all kinds of resources to the greatest extent, obtain the relevant data of ideological theory courses in universities, and promote the development of ideological theory courses in the direction of data.

Secondly, all kinds of information resources collected in the early stage are screened and stored according to certain classification standards, so as to build a resource database of ideological theory courses, which is convenient for later reference and sharing. Finally, using the data resources of the resource information database, according to the current characteristics and students' personal needs, we design more targeted and personalized educational content and teaching programs that are more in line with students.

(2)Broaden teaching resources

Reasonable use of big data technology to set the teaching content and class hours of ideological course can not only improve the rationality of teaching plan, but also encourage students to have a strong interest in learning this lesson knowledge, and help students learn ideological knowledge from simple to deep.

With the wide application of big data and the rapid development of information processing technology, educators can quickly and efficiently find the required text, video, animation and other resources, promote the transformation of teaching data from single to diversified, enrich the content of ideological theory courses and enhance their interest. At the same time, in the era of big data, teachers can grasp the problems that students are interested in and have doubts, and improve the effectiveness of teaching by understanding the focus of network hot spots.

C. Integration of Big Data and Cloud Computing Applications

With the increasing homogeneity of online education, online education of ideological theory course needs to better analyze the preferences of online learners and teachers while ensuring the rich and high quality of educational resources, and provide targeted personalized services for each user of the platform. The advantages of cloud computing and big data will be used to build a high-quality online education interactive platform model that meets the needs of learners and teachers, as shown in Figure 3.

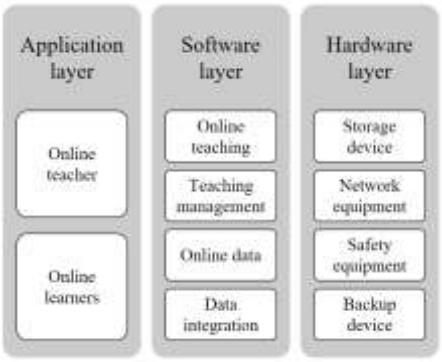

Fig.3 Online Education Interactive Platform Model Based on Cloud Computing and Big Data Technology

There are mainly two types of users of online education interactive platform, namely online teachers and online learners. According to different users, the access authorization and interface are different, so as to provide users with personalized and accurate services as much as possible, which is mainly manifested in the user's own display web page. Service application content is mainly divided into four categories, including online teaching content, teaching management, communication and interaction and learning management.

The middle layer is the data resource processing layer, which consists of three parts. The first part is to standardize the data, the second part is to analyze and integrate the data mining, and the third part is the database. The core of the middle layer is the second part, which is also the core of the online education interactive platform, as shown in Figure 4.

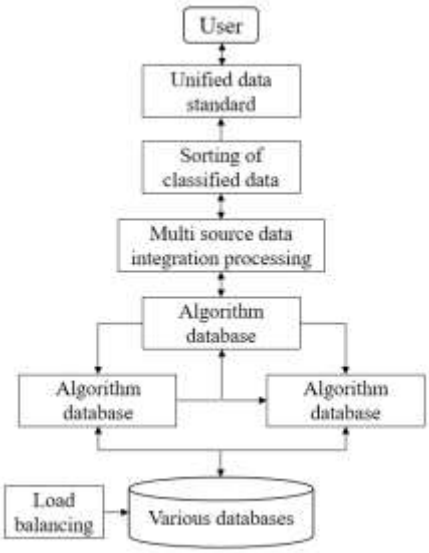

Fig.4 Data Resource Processing Layer Architecture of Online Education Interactive Platform Based on Cloud Computing and Big Data Technology

Cloud hardware configuration realizes resource integration and sharing, can flexibly change according to the development of demand, and quickly develop rich and diverse educational applications on the interactive platform, at the same time, it ensures that these applications are organically unified, integrated and innovative, and maximize benefits.

Ⅵ. Conclusion

At present, with the rapid development of big data, cloud computing and Internet of Things, the forms and applications of educational data are becoming more and more diversified. Whoever can quickly discover and

integrate data and solve the problem of how to use data to mine the value behind it will effectively enhance its competitiveness in the future. In the era of big data, as students majoring in ideological education and teachers engaged in ideological education, we need to grasp the characteristics of the current era, keep pace with the times, be brave and dare to try new things, constantly update our teaching concepts, actively think, be good at summing up, discover problems in time, and make better use of big data to carry out ideological theory courses.

Ⅶ. Acknowledgment

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