Innovation and Entrepreneurship Education in Colleges and Universities under Big Data Technology

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Abstract. Big data technology and application major differs from other computer majors in its wide range of knowledge, rapid technological update, and stronger practicality. At present, the demand for talents in this major is very strong in the market. Colleges and universities should update the traditional teaching mode, integrate the "mass entrepreneurship" education training into the training of professional talents, implement the reform of "three education", promote mass entrepreneurship and innovation, and realize the goal of training compound and innovative talents.

Keywords: Big data technology; Positive significance; College ideological and political education; Strategy of Innovation

1 The positive effect of applying big data in ideological and political work in colleges and universities

At present, the ideological and political work of college students in China is facing severe challenges. Under the new situation, we must adhere to the correct attitude, establish the correct values and awareness, effectively promote fairness in education, and train socialist builders and successors who are well-developed morally, intellectually, physically, and aesthetically. Under the background of the information society, how to effectively use information technology for ideological and political education in colleges and universities is the fundamental task to realize "people-oriented".

1.1 Use big data technology to promote the information integration of ideological and political education resources in colleges and universities

In recent years, Chinese universities gradually pay attention to informatization. After several years of construction, Chinese universities have basically formed a complete information service system and provided abundant information resources for universities. Students' information mainly comes from the campus network, library network, educational management platform, student dormitory platform, student business system, etc., which contains students' consumption, achievement, reward, punishment, activities, and other interrelated information, in a large amount. In the past ideological and political education in colleges and universities, due to the contact mechanism of various departments, resources integration, and other subjective and objective factors, resources were unable to be effectively used. Therefore, we must adopt the method of systematic sampling and random sampling, and

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combine the practice of ideological and political education workers for a comprehensive analysis.

1.2 Use big data technology to improve the predictability of ideological and political work in colleges

We aim to establish a perfect training target for computer talents. The current training objectives of computer professionals are adjusted, and the objectives of innovation and entrepreneurship education are incorporated into the training objectives of computer professionals, in which innovation and entrepreneurship education is reflected.

```
function levelCalc(u) {// Capability value calculation function
if(header.count === 2) {
let cnt = answerList.filter(answer =>
answer.studentAnswer==answer.rightAnswer).length
if(cnt === 1) {// Judge the subject's response
return 0;
} else if(cnt<1) {
return -1;  } else {
return 1;}
letlevel=answerList[answerList.length- 1].studentLevel;
let difficulty= answerList[answerList.length-1].difficulty;
letp=Math.exp(level- difficulty)/(1 + Math.exp(level- difficulty));   let f=u-p-level/Math.sqrt(2* Math.PI);   let df = p * (p- 1) - 1 /Math.sqrt(2 * Math.PI);
return level- f/df;   // Calculation formula and capability value results}
function informationCalc(difficulty){// Difficulty for information quantity calculation
letlevel=answerList[answerList.length-1].studentLevel;
let son = Math.exp(level- difficulty);
let mother = Math.pow(1 + son, 2);
return son/ mother;
```

To strengthen the construction of computer professional teachers, it is necessary to gradually improve the introduction, training, and selection mechanism of computer teachers and establish a professional and combined innovation and entrepreneurship ability training teaching team. First, we should establish a full-time team of innovation and entrepreneurship training teachers. In addition to vigorously introducing professionals in the field of innovation and entrepreneurship education, we can also cooperate with enterprises to add some entrepreneurs to the team of teachers. The second is to organize the teachers who have the enthusiasm to guide entrepreneurship and meet the corresponding standards to participate in

the corresponding training courses for teachers of innovation and entrepreneurship education and carry out systematic professional training.

1.3 Use big data technology to improve the timeliness of dynamic thinking

Under the traditional mode of ideological and political education, only by means of written questionnaires, network questionnaires, individual interviews, and field visits can we realize the monitoring of the ideological and political dynamics of college students, which leads to a certain lag of the traditional mode of ideological and political education on the dynamic monitoring of college students. It is not conducive for ideological and political educators in colleges and universities to grasp the ideological dynamics of college students in time, and then take effective countermeasures. Through the application of big data technology, it can dynamically analyze the ideological trends and behavioral changes of college students, so that they can timely understand their thoughts and emotional changes, and achieve a target in ideological education, to provide each college student with significant and scientific personalized education services. For example, college counselors can make full use of big data technology to fully grasp the data of whether a student has attended class on time, performed exercises and returned to the dormitory, and timely analyze his mental state, so as to better carry out ideological and political work.

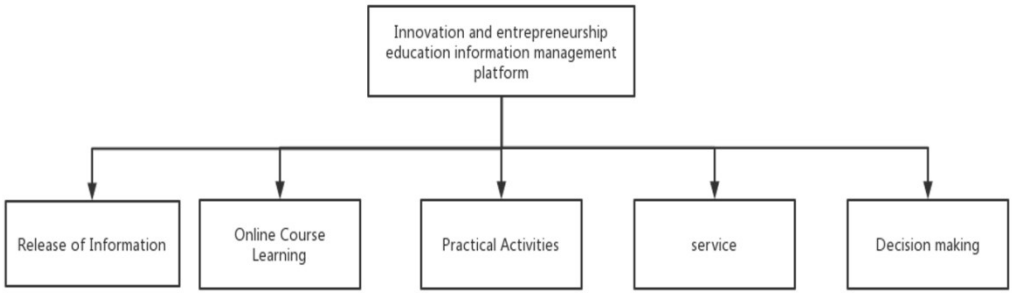

Fig. 1. Architecture diagram of innovation and entrepreneurship education information management platform

2 Innovative strategies for big data application in ideological and political education in universities

2.1 Innovation of ideas: Strengthen college students' thinking of big data in ideological and political work

Thought is the forerunner of behavior, it plays a great role in the work of guidance and guidance. In the ideological and political work of colleges and universities, big data thinking should be integrated into the ideological and political work, and continuous innovation should be made to promote the rational application of information technology in the ideological and political education of colleges and universities. The traditional mode of ideological and political education in colleges and universities, based on teachers' experience, analyzes and predicts it, but lacks scientific and rigorous understanding, which leads to the situation of "passive response" for a long time. Using big data technology, we can make a large number of

statistics and analyses on the relevant data of college students, so as to provide a first-hand reference for the smooth progress of ideological and political work in colleges and universities. Therefore, it is necessary to adhere to the innovation of educational concepts, actively establish the "trinity" data concept of understanding, collection and application of data, constantly improve the ability of data collection and application, and further improve the ability of data collection and application, so as to better carry out the ideological and political education of big data [5].

2.2 Strengthen team building: Improve the big data ability of ideological and political talents in colleges and universities

In the era of big data, in order to give full play to the positive effect of big data, it is necessary to train a group of teachers who know technology and have strong ideological and political qualities, so that they can better realize the combination of big data and ideological and political education. Therefore, universities should adapt to the needs of The Times and constantly improve the big data ability of college students. The composition of ideological and political work teams in colleges and universities should be diversified, and master's and doctoral students with multi-disciplinary backgrounds should be actively absorbed into the team of colleges and universities, so that they can organically integrate their professional background with the requirements of ideological and political education service in colleges and universities under the new situation. Secondly, we should actively learn all kinds of big data technology, constantly improve our knowledge level through training, lectures, further study, and other ways, use big data technology to find various problems in college students, and help them solve various ideological confusion and psychological problems. Third, the ideological and political education of college students must pay attention to the improvement of political quality, firm political stand, and distinguish right from wrong, so that in the face of the complex and massive data, they still can keep a clear head and treat various problems objectively and rationally.

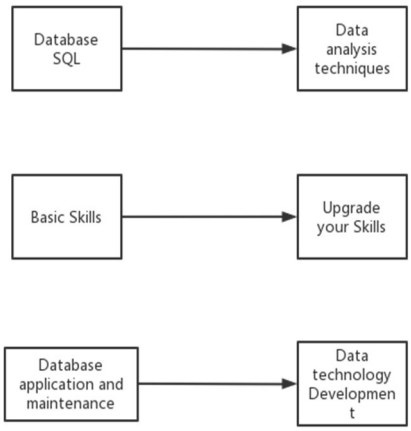

Fig. 2. Curriculum system of Big Data Technology and application

3 Demand analysis of big data for innovation and entrepreneurship education

With the rapid development of computer technology and network technology, information management technology is gradually recognized and applied by people. However, through the investigation of colleges and universities in Fujian Province, it is found that there are still many problems in the management and utilization of information resources for college students' innovation and entrepreneurship education. First of all, most universities do not plan the data management system from the level of top-level design. It can be seen that the influence of big data technology on innovation and entrepreneurship education is increasingly apparent, and some scholars have introduced it into innovation and entrepreneurship education. LAN Rongcong and Chen Yongfu pointed out that big data plays an important role in cultivating innovative talents, and big data is not only a technology but also a way of thinking. It plays a positive role in promoting the teaching model, education concept, and practice. Zheng Shiming discussed the impact of big data on innovation and entrepreneurship education from four aspects: application demand, application framework, application content, and application process.

4 Establish an innovative enterprise education information management platform

Although big data can integrate data on various network platforms, the integrated information platform for innovation and entrepreneurship education can effectively reduce the cost of information management in schools, and, combined with big data, improve the quality of business data storage in schools and ensure data accessibility, comprehensibility, credibility, and availability [5]. Therefore, it is necessary to design a unified information management platform for innovation and entrepreneurship. Based on big data, this paper aims at the five characteristics of innovation and entrepreneurship education and the practical application needs of colleges and universities and combines with the existing innovation and entrepreneurship education platform [6] to build an innovation and entrepreneurship education information management platform based on big data (Fig. 1). Information release, online course learning, practical activities, and service platform provide accurate and reliable data sources for data processing. The decision platform feeds the analysis report back to the education implementers and guides the platforms to update the education information.

The system adopts the collection method of system log and unstructured data of data source and realizes the pre-processing of data through the process of data cleaning, integration, transformation, and reduction. The main tools include Cloudera's Flume, Twitter's Zipkin, and homegrown apps like Web Miner.

In this stage, deep learning, knowledge computing, and visualization technologies are used to analyze, mine, and predict the pre-processed data. Finally, Tableau and other tools are used for visual display.

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