Retraction

Retraction: Reform and Innovation of Higher Fine Arts Distance Education under the Background of Big Data (J. Phys.: Conf. Ser. 1852 032026)

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The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Reform and Innovation of Higher Fine Arts Distance Education under the Background of Big Data

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Abstract. The development direction of online teaching is personalized and customized teaching based on user needs. The application of big data(BD) technology to the art remote network teaching platform can effectively solve the problems of the huge and chaotic amount of teaching resources, the difficulty of user selection, the weak management of the network learning process, the inefficient use of teaching resources, and the lack of user role sense. The purpose of this article is to study the reform and innovation of higher art distance online education under the background of BD. Methods such as literature analysis and BD technology closely link BD with education reform and innovation. This article uses BD technology methods to discover and grasp the laws of higher art distance online education in colleges and universities(CAU), build a higher art distance online education innovation system in CAU, and then promote the innovation of college art distance online education. This paper proposes a distance education innovation system for CAU from the perspective of BD, and further adopts the method of structured system analysis to carry out an in-depth study of the innovation system of CAU distance education of fine arts from the perspective of BD. This article points out that the college network ideological and political education innovation system under the BD perspective is composed of internal and external elements such as ideas, mechanisms, paths and carriers. Based on the analysis of the realistic basis of higher art education innovation in CAU from the perspective of BD, this paper puts forward the realistic possibility of the innovation of higher art distance network education under the vision of BD. Experimental research shows that there are more than 700 million netizens in my country, among which netizens are mainly 20-29 years old, accounting for 30.30% of the total number of netizens. In addition, students are an important part of netizens, reaching 25.4%.

Keywords: Big Data, Higher Art, Education Reform, Online Teaching

1. Introduction

With the vigorous development of BD, higher fine arts distance education has also developed[1-2]. Today's society is a learning society, everyone should have the ability and opportunity of lifelong learning, and the reform and innovation of distance education is an indispensable part of it. The topic of this paper has a strong epochal character[3-4]. Therefore, combing the development context of the
discipline, and aiming at the existing problems, puts forward corresponding countermeasures or suggestions, which can provide theoretical guidance and basis for the construction of Distance Education under BD\cite{5-6}. With the advent of the digital era and the extensive and in-depth development of a variety of modern technologies and modern concepts in education, distance education has shown a strong development momentum in the world under the background of BD\cite{7-8}.

In the research on the reform and innovation of higher fine arts distance education under the background of BD, many scholars have studied it. For example, Li Daisu once said that the data in science should be replaced by computers\cite{9}. Chinese scholar Chen Yang proposed that the future of learning and education should go with BD. Their education methods are worthy of our critical reference and reference, and promote the development of China's Distance Education Reform\cite{10}. These have important reference significance for our country to carry out the innovation research of higher fine arts distance education in the era of BD.

This paper will analyze the characteristics of the reform and innovation of higher fine arts distance education under the background of BD, reveal the necessity and possibility of reform and innovation of higher fine arts distance education in the era of BD, and combine with the current situation of reform and innovation of higher fine arts distance education in the era of BD, conceive method innovation from two aspects of principle method and general method, so as to provide reference for the reform and innovation of higher fine arts distance education in the era of BD. The reform and innovation practice of higher fine arts distance education provides theoretical guidance, enhances the effectiveness of distance education reform, and promotes the overall development of youth in the era of BD.

2. Reform and Innovation of Higher Fine Arts Distance Education under the Background of BD

2.1. Building BD Platform
Collect, expand and dynamically allocate educational resources. Many CAU establish BD application platform, level data acquisition equipment and data transmission network, and improve data storage and analysis system. In the face of complex BD processing procedures, CAU go to the society to find professionals for further professional processing, and highly integrate data and applications. The system integrates highly integrated information and has huge processing capacity for data.

2.2. Accurate Utilization of Education Resources Allocation under BD Is Very Accurate
The traditional education data reflects the overall and macro education situation, which inevitably leads to imbalance in data distribution. At this time, the "BD" to obtain dynamic, real-time, comprehensive and reliable data can make up for the defects of traditional education data.

2.3. Comparative Research Method
This paper compares and analyzes the new thinking and new methods brought by BD era to the innovation of higher art education methods and traditional ideological and political education methods, explores the advantages and necessity of innovation of higher art distance education methods in the era of BD, and lays the foundation for the innovation of principles and methods of higher art distance education.

2.4. Data Acquisition
In order to deal with the problem of low efficiency in the operation of dealing with a large number of data, this paper uses the key cost as the basis of data division. The first problem to be solved is to get the number information of each connection attribute. The system sampling method is used to sample the input slices of each map in parallel. For the data from the two files customer and orders, the map task samples the read partition information, and analyzes the connection attribute value of each record and the data source keyij, each < key, the probability of value > pairs being extracted is the same. The
map task counts and collects the \(< \text{key}_{ij}, 1 >\) encapsulated by each map, and then forms a sample file in the form of key / value pairs, and sends the sampling information to the job processor.

2.5. Systematic Sampling Method
Select one data from all the data as the starting point, and extract the remaining sample units according to a certain interval order. The specific methods are as follows: let \(n\) be the total unit number, \(n\) be the sample size, and the sampling distance is \(s = n / n\). The population samples are numbered consecutively from 1 ~ n. firstly, a number \(N_1\) is randomly selected from 1 ~ n as the first unit of the sample, and then \(N_1 + s, N_2 + N, \ldots\)

Until the number of samples reaches the last one. The sampling method used in this paper is regular, so it can reflect the overall level. For example, the probability of a occurrence is \(p\). after \(n\) operations, a appears \(m\) times, then \(n\) is very large

\[
m - np \sim N(0,1)
\]

If the confidence interval is 100%

\[
-3 < \frac{m - np}{np(1-p)} < 3
\]

So we know that the error is

\[
3np(1-p) \geq 1 \quad 1 \quad 1
\]

It can be seen that the larger \(n\) is, the smaller the error of \(M\) is, and the higher the accuracy of sampling is.

3. Experimental Research on Reform and Innovation of Higher Fine Arts Distance Education under the Background of BD

3.1. Test Purpose
First, promote the development of higher art education reform. Based on the background of BD era, this paper discusses how the reform methods of higher art education should make use of the advantages of BD to innovate, so as to provide theoretical guidance for China's higher art reform education. Second, promote the development of distance education. In the era of BD, it is actually a new form of higher art education reform to make scientific and quantitative analysis on the relevant data of higher art education reform under the background of BD, and explore the education methods based on youth individuals or groups.

3.2. BD Experimental Data Sources
Research on the connotation, characteristics and methods of BD. With the rapid development of BD, all industries have their own opinions on BD. At present, some scholars believe that BD has the characteristics of "4V" or "5V". "4V" means a lot of data. "5V" means large amount of data and accuracy. They are not on the same level. With the development and innovation of BD related technology, BD has expanded from simple data calculation to innovation of data mining, analysis and application ability.

3.3. Investigation Questions
How to determine the number of research objects? How to select the most representative and valuable research objects? It has become the key to the success or failure of this thesis. This paper investigates the administrators, social workers and students of distance education colleges in six different regions. 450 questionnaires were sent out. After verification, 400 questionnaires were recovered, with a probability of 89.2%. In the questionnaire, the author makes an in-depth investigation on the main
problems affecting the reform and development of distance education in CAU, and strives to explore and deeply analyze the concept, system, structure, mechanism, technology and resources, so as to explore a feasible way for the reform and development of distance education in CAU in China.

4. Experimental Research and Analysis on the Reform and Innovation of Higher Fine Arts Distance Education under the Background of BD

4.1. Age Stage Composition of Internet Users
More and more scholars judge the coverage and age of BD in China by investigating the number and proportion of social and college students using the Internet. Youth are the main users and data participants of social networks. According to the survey, it is shown in Table 1.

| Age stage     | 2016   | 2017   |
|---------------|--------|--------|
| 10-19 years old | 20.20% | 19.60% |
| 20-29 years old | 30.30% | 30.00% |
| 30-39 years old | 23.20% | 23.50% |
| 40-49 years old | 13.70% | 13.20% |
| 50-59 years old | 5.40%  | 5.20%  |

Table 1. Age structure of Chinese Internet users

It has a wide and profound impact on the young people's learning mode, thinking mode and values. The experimental results are shown in Figure 1. As of December 2017, the number of Internet users in China has reached 772 million. China's Internet users are mainly 10-39 years old, accounting for 73% of the total number of Internet users, as shown in Figure 1. Among them, the student group is the largest, accounting for 25.4% of the total number of Internet users. In terms of social network applications.

4.2. Student Group of Higher Art Education Reform
In order to further verify the activity of university student forum, we use random sampling method to randomly select two students from the student forum users of each surveyed node University, and conduct BD portrait according to their posts and replies in the student forum. In order to observe the activity and interest preference of the selected eight users, we counted the keywords and their frequency in their posts and replies. Based on the large number of keywords we have selected and the length of the article is limited, the following five keywords are selected to list, so as to reflect the overall situation.
Table 2. Research on CAU

| University | Number of topics | Post size |
|------------|----------------|----------|
| A university | 9773 | 12359 |
| B university | 820 | 1532 |
| C university | 3266 | 3444 |
| D university | 14034 | 14079 |

Figure 2. Research on CAU

As shown in Figure 2, we find that the total number of posts, the average number of daily posts and the average number of user posts of the four node universities have reached a high number, which indicates that, on the whole, the university student forum is in a state of high activity. D university is the Academy of fine arts of Tsinghua University, which is located in the national economic, political and cultural center of Beijing, where the information gathering density is high. All kinds of ideas meet and collide here, which has a great impact on the thoughts of college students. Therefore, no matter from the total number of posts, the amount of daily posts and the average amount of user posts, they are in a more active state. Secondly, the leading B University in the field of electronic information is Chengdu University of Electronic Science and technology, and its users are more active, especially from the average number of user posts, there are a group of students who actively express their views in the student forum of Chengdu University of Electronic Science and technology. Combined with the previous overall data statistics, we believe that college students are in a more active state in the forum.

5. Conclusions

Combining with BD technology, this paper proposes the design and application of a modern network teaching platform based on BD, so as to realize the discovery of users' personalized teaching needs. This article is guided by the basic education of higher art theory, starting from the new characteristics of young people in the era of BD, and combining BD with higher art distance online education methods for research. This article analyzes the user information of the fine arts distance network teaching platform in detail, and on this basis, through the age stage and the use of BD and distance education in CAU, the innovation of the principles and general methods of the higher fine arts distance network education It puts forward specific and operable measures and suggestions, so that the relevant explorations of this article can be based on educational theory and implement in educational practice.
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