Retraction

Retraction: Higher Calligraphy Education Model Based on Big Data (J. Phys.: Conf. Ser. 1744 032027)

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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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Higher Calligraphy Education Model Based on Big Data

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Abstract: Calligraphy is the treasure of Chinese traditional culture, and contemporary Chinese higher calligraphy education has formed a complete education system from different levels of junior college, undergraduate course, master's degree and doctoral degree. The achievements we have made are obvious to all, but the problems such as the disunity of the syllabus, the imperfect curriculum system and the uneven level of teachers can not be ignored. Therefore, the purpose of this paper is to study the higher calligraphy education model based on big data analysis. Then, by using the questionnaire survey method, we can get the college students' understanding, liking and cognition of calligraphy, so as to more truly understand the contemporary college students' views on higher calligraphy. According to the previous investigation and research results, combined with big data analysis technology, this paper puts forward a new teaching mode of higher calligraphy, that is, interactive teaching. Interactive teaching puts college students' feelings at the main position, and prefers college students' subjective initiative and communication in teaching activities. At the same time, combining with the big data analysis technology, this paper analyzes the part that contemporary college students are interested in higher calligraphy, and then focuses on teaching this part to improve students' enthusiasm and initiative. Finally, this paper makes a comparative experiment between interactive teaching and traditional teaching. The experimental results show that the interactive teaching method has been recognized and liked by students, and the students' liking for higher calligraphy has increased by about 36%. This teaching method can also arouse students' enthusiasm for learning calligraphy, which plays a significant role in improving students' calligraphy level and provides an important reference for the improvement of higher calligraphy education mode.

Key Words: Big Data analysis, Higher Calligraphy Education Model, Questionnaire Survey, Interactive Teaching

1.Introduction

In higher calligraphy education, with the continuous development of information technology and the wide spread of big data technology, many universities at home and abroad have created new calligraphy teaching modes with their own characteristics, which greatly improved the teaching
efficiency in universities. However, most of the papers and works focus on a certain phenomenon, aspect or stage of higher calligraphy education, which is not comprehensive, macroscopic and systematic. There are also comprehensive talks about the present situation, existing problems and solutions of Chinese higher calligraphy education, but they are not deep enough. Therefore, there is a lack of a comprehensive, macroscopic, systematic and in-depth combing of contemporary Chinese higher calligraphy education, and it is necessary to study the higher calligraphy education model based on big data analysis.

At present, with the continuous development of information teaching in colleges and universities, higher calligraphy education models created by using big data and other related technologies have emerged one after another. In foreign countries, Pastor is an active advocate of interactive teaching mode. He applied interactive teaching mode to writing teaching activities. He found that under this mode, students' subjective initiative has been greatly improved, students can make full use of teaching resources to carry out learning activities, and interactive teaching mode provides students with an excellent learning environment [1]. In China, there are many similar teaching modes. Chan Sheng-Ju believes that interactive teaching mode should be used to improve students' reading ability, and top-down and bottom-up methods should be used to focus on the semantic combination of students' acceptance of knowledge and literature [2].

In this paper, aiming at the research of higher calligraphy education model based on big data analysis, firstly, the history and current situation of higher calligraphy education in China are systematically combed by consulting relevant materials, and the main problems existing in contemporary Chinese higher calligraphy education are summarized. Based on the previous investigation and research results, combined with big data analysis technology, this paper puts forward an interactive teaching mode, which greatly improves students' enthusiasm and subjective initiative, and has important reference significance for the further development of higher calligraphy education.

2. Technical research on Higher Calligraphy Education Mode Based on Big Data analysis

2.1 Big Data analysis Theory

(1) Data acquisition
For any data analysis, the primary thing is data collection, so the first technology of big data analysis software is data collection technology. This tool can collect data distributed on the Internet and data in some mobile clients quickly and widely. At the same time, it can quickly import data from data sources in some other platforms into this tool, and clean, transform and integrate the data, thus forming it in the database or data mart of this tool for contact analysis and processing [3].

(2) Data access
After the data is collected, another technology of big data analysis, data access, will continue to play a role. It can relate the database, make it convenient for users to store the original data in use, and collect and use it quickly. Then there is the basic architecture, such as transportation and storage and distributed file storage, which are common.

(3) Data processing
Data processing can be said to be one of the core technologies of the software. Facing the huge and complex data, the tool can use some calculation methods or statistical methods to process the data, including its statistics, induction, classification, etc., so that users can deeply understand the deep value of the data [4].

(4) Statistical analysis
Statistical analysis is another core function of the software, such as hypothesis testing, which can help users analyze the reasons for a certain data phenomenon, and difference analysis can compare the huge differences of product sales in different time and regions, so as to make a more reasonable layout in time and region in the future.

(5) Correlation analysis
What is the relationship between a certain data phenomenon and another data phenomenon? Big
data analysis can analyze the relationship between the two through data growth, reduction and change, etc. In addition, cluster analysis, principal component analysis and correspondence analysis are commonly used technologies, and the application of these technologies will make data development closer to people's application goals [5].

2.2 Questionnaire Survey Method

Questionnaire survey is a widely used method in social investigation at home and abroad. Questionnaire survey refers to a form used for statistics and investigation, which expresses questions by asking questions. Questionnaire survey is a way for researchers to measure the problems they study with this kind of controlled measurement, so as to collect reliable data. Questionnaires are mostly sent by mail, individual distribution or collective distribution. The investigator will fill in the answers according to the questions in the form. Generally speaking, the questionnaire is more detailed, complete and easy to control than the interview form. The main advantages of questionnaire survey are standardization and low cost. Because the questionnaire survey method is based on a designed questionnaire tool, the design of the questionnaire requires standardization and measurability [6].

2.3 Interactive Teaching

Environment is a potential factor that determines behavior. The generation of behavior is based on the environment, and the quality of the environment determines the excellent behavior. That is to say, teaching environment is of great significance to students' learning behavior, and there is a positive correlation between the quality of teaching environment and students' learning behavior. Therefore, in the interactive teaching environment, the classroom should create a positive teaching environment, pass on the positive effects in teaching to students in a subtle way, and change students' learning behavior benignly [7].

The interaction between human and environment determines behavior. The main reason why the environment can gradually influence the occurrence of behavior is that it is a conscious and cognitive individual who accepts the environment, so that it can respond to the changes of the environment.

Behavior is the interaction of three factors. On the one hand, the behavior between environment and individual under the interaction, on the other hand, the behavior produced by the interaction between individual and environment further interacts with individual and environment, resulting in new behavior. Only when the three interact constantly can the behavior be strengthened and consolidated [8]. Therefore, teachers can effectively use the relationship among students, learning behavior and teaching environment in teaching activities, which can effectively help students consolidate and enhance their learning behavior.

It can be seen that the interaction among individual factors, learning behavior and teaching environment will jointly affect students' learning behavior. As a teacher, we should make full use of the interaction among the three, urge students to make continuous progress, guide students to develop in the direction of excellent learning behavior, and accumulate good study habits. If we ignore any aspect, or pay attention to only one aspect, it will make education deviate from the normal track and affect students' learning behavior [9]. Therefore, according to the interaction types in the "interaction" theory, that is, adaptive interaction, comprehensible interaction, operational interaction, reflective interaction, selective interaction, etc., in the specific situation of classroom teaching, the correct and reasonable use of matching interaction can make the interaction between teachers, students and students natural and harmonious, such as discussion of learning content, reappearance of teaching content situation, emotional communication, etc., and can also make students interact with teaching content, stimulate benign learning behavior and make students learn[10].

3. Experimental Research on Higher Calligraphy Education Mode Based on Big Data analysis

3.1 Experimental Data
The research object of this paper is 200 randomly selected college students, including 120 boys and 80 girls. Then divide them into a and b groups on average. Group a is the experimental group and group b is the control group.

3.2 Experimental Process
First of all, we randomly selected college students to conduct a questionnaire survey, and obtain the understanding, liking and cognition of these 200 college students on higher calligraphy, so as to more truly understand the contemporary college students' views on higher calligraphy. After that, the interactive teaching mode proposed in this paper is used to teach advanced calligraphy for one month for group A college students, and under the same conditions, traditional teaching methods are used to teach advanced calligraphy for one month for group B college students. Finally, a questionnaire survey was conducted and the experimental data were compared.

4. Experimental analysis of Higher Calligraphy Education Mode Based on Big Data analysis

4.1 College Students' Views on Higher Calligraphy Teaching
In this paper, 200 randomly selected college students were investigated by questionnaire. Thus, we can get the understanding, liking and cognition of contemporary college students on higher calligraphy, and thus more truly understand the views of contemporary college students on higher calligraphy. The purpose of the first questionnaire survey is to understand college students' calligraphy level and their interests in calligraphy learning, and the second questionnaire survey is to understand their views on interactive teaching mode and traditional teaching mode. The survey results are shown in Table 1 and Figure 1.

|                      | Understand advanced calligraphy | Like advanced calligraphy | Learn high-level calligraphy | Think that higher calligraphy is important |
|----------------------|---------------------------------|---------------------------|-------------------------------|------------------------------------------|
| Boys                 | 78                              | 53                        | 21                            | 64                                       |
| Girls                | 54                              | 45                        | 18                            | 39                                       |

Figure 1. College students' attitudes towards the two teaching modes
From the survey data, it can be seen that most college students know little about higher calligraphy, only know that calligraphy is one of Chinese traditional arts and culture, so only a few students express their love for calligraphy. Some students think that calligraphy is related to writing, so they express their dislike of calligraphy. On the other hand, students can't understand the importance of
calligraphy to their future study. Everyone has no intuitive feeling about whether the handwriting is beautiful or not, so they can't realize its importance.

After using the two teaching modes to teach college students in group A and B for one month, most of the college students in group A think that the interactive teaching mode is more effective, more interesting and interactive for learning advanced calligraphy, which improves the students' enthusiasm for learning advanced calligraphy. Big data theory first collects the opinions of college students on higher calligraphy, and then stores and analyzes these data, so as to know the higher calligraphy knowledge that college students are eager to learn and teach students in accordance with their aptitude. In addition, the interactive teaching mode is very interactive, so students are more willing to take the initiative to learn, which is more effective. However, group B college students who adopt the traditional teaching mode generally have a low evaluation of the traditional teaching mode.

4.2 Changes in College Students' Love for Higher Calligraphy

In this paper, the interactive teaching mode is used to teach college students in group A for one month, and under the same conditions, the traditional teaching methods are used to teach college students in group B for one month. During the experiment, the college students were investigated every five days, and the changes of their love for higher calligraphy were counted. We visually show the changes of college students' love for higher calligraphy in group A and B, and fit curves according to the mean value. As shown in Figure 2.

![Figure 2. Changes of college students' love for higher calligraphy](image)

From the experimental results, it can be seen that the students in group A who use the interactive teaching mode proposed in this paper are gradually increasing their love for higher calligraphy, and the increasing speed is faster than that of students in group B who use the traditional teaching mode. Moreover, the students in group A are much more fond of advanced calligraphy than those in group B. This proves once again that the interactive teaching mode based on big data analysis has a positive effect on college students' learning of advanced calligraphy, which greatly promotes their enthusiasm for learning advanced calligraphy, and is of great significance, which has an important relationship with big data analysis theory and high interactivity. Big data analysis theory has powerful ability of data processing and analysis, and can teach higher calligraphy according to the interests and hobbies of college students. It also incorporates a lot of interesting knowledge and mobilizes the enthusiasm of students. Therefore, big data analysis plays an important role in higher calligraphy education mode.

5. Conclusions
Based on big data analysis, this paper studies the mode of higher calligraphy education. Firstly, this paper systematically combs the history and present situation of higher calligraphy education in China by consulting relevant materials, and summarizes the main problems existing in contemporary Chinese higher calligraphy education. Then, through the method of questionnaire survey, we can understand the understanding, liking and cognition of college students to calligraphy, so as to more truly understand contemporary college students' views on higher calligraphy. At the same time, combining with big data analysis technology, this paper analyzes the part that contemporary college students are interested in higher calligraphy, and then focuses on teaching this part to improve students' enthusiasm and initiative. Finally, this paper makes a comparative experiment between interactive teaching and traditional teaching. Experimental results show that interactive teaching has been recognized and loved by students. Interactive teaching is an effective mode for learning advanced calligraphy. This teaching mode can arouse students' enthusiasm for learning calligraphy, play a significant role in improving students' calligraphy level, and provide important reference for the improvement of higher calligraphy education mode.

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