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# Research on Informatization Teaching of Big Data Technology and Application Major

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## Abstract

**With the development of the times and technology, informatization teaching has been effectively integrated into traditional teaching. This paper discusses the main contents of informatization teaching research of big data technology and application major from three aspects: design and implementation of the teaching process, design and use of evaluation system, and selection and design of teaching resources. For majors related to big data, we should give full play to our professional advantages to deepen the application of big data analysis and use information means to better serve talent training.**

## Keywords

**Informatization Teaching; Big Data; Evaluation System.**

## 1. Introduction

Big Data Technology and Application is an “Internet Plus” science and technology major that combines cutting-edge technologies such as big data analysis and processing, software development, and cloud computing [1]. The major of big data application and technology aims to train students to be hard-working, lifelong learning, and have the strong practical ability through professional learning. The major trains students to become big data technical talents with the ability of big data analysis and processing, data warehouse management, big data platform application software development and operation, maintenance, and deployment.

Informatization teaching mainly refers to the use of information technology to achieve better teaching. For vocational education, we should pay attention to the use of information technology to promote the integration of industry and education, strengthen the construction and application of virtual simulation training resources, promote online and offline hybrid teaching, and improve the whole process of the education mechanism of vocational education.

According to the characteristics of vocational education, combined with the characteristics of big data technology and application specialty, the education concept of "student-oriented and teacher-led" should be carried through, and task-driven education should be advocated. To cultivate the professional ability, we should make full use of the teaching resources, learn from the concept of the flipped classroom, adopt online and offline hybrid teaching methods, use mobile learning platforms, MOOC, virtual simulation platforms, short videos, and other information methods to enhance students' professional interest and solve teaching difficulties [2-4]. With the help of information means, students' ability to use information technology knowledge, good habits of independent inquiry, and innovative spirit can be cultivated, and students' comprehensive professional quality can be improved.

Taking the course of big data analysis and development as an example, this paper discusses the main contents of informatization teaching research.

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## 2. Design and Implementation of the Teaching Process

The teaching process is usually divided into three stages: before class, during class, and after class. In the self-study stage before class, the research focus on how to rationally use information means to publish tasks, guide students to complete tasks and submit pre-class exercises. Teachers adjust the teaching plan in time according to the feedback of students. In the in-class teaching stage, the research focus on how to rationally use information means to effectively organize classroom teaching, control classroom rhythm, and efficiently complete teaching tasks. In the after-class consolidation stage, the research focus on how to rationally use information means to release and correct homework, effectively track students' learning status, and timely communicate with students.

Before class, teachers should reasonably design the content, form, and duration of pre-class preview, release task lists and micro-class videos using mobile learning platforms, introduce the course process and arrange pre-class preview tasks. After receiving the task reminder, students log in to the platform, get the task sheet and complete the preview task. In addition to the task list, teachers can also learn about the students' mastery of the early courses and professional skills through questionnaires and other forms.

During the class, teachers use the intelligent platform to release the check-in information and organize questions and answers, discussions, and in-class exercises during the teaching process, so as to know the learning status of students in real time and adjust the teaching progress accordingly. It is convenient and fast to use the platform to check in, and the attendance rate and absence rate are presented in real time, which saves time and avoids problems such as fake check-ins. Teachers can use the random “selection” function of the intelligent platform when organizing questions and answers, as shown in Fig. 1. After the selected students answer the questions, the teacher will explain and reward them with points in time, which can improve the students' attention and enthusiasm to answer the questions to a certain extent. On the other hand, discussion and in-class exercises can help students practice and consolidate what they have learned in time, and teachers can get feedback immediately and make corresponding adjustments, such as adjusting the difficulty and quantity of in-class exercises, speeding up or slowing down the progress of the class, etc. Therefore, with the help of information means, online courses can also carry out smooth and natural classroom interaction, which is conducive to online and offline hybrid teaching.

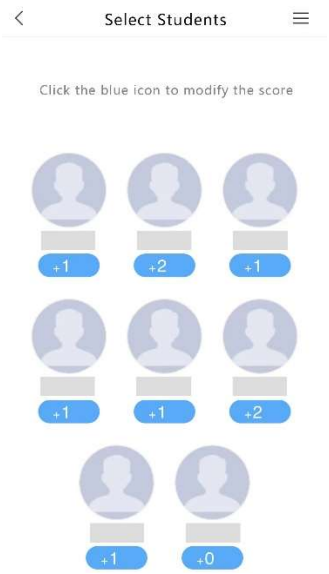


**Fig. 1** Selection and Grading

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After class, the teacher releases the task and sets the completion time. The intelligent platform can be personalized according to a single class, or multiple classes can be set to the same start and end time with one click. Students receive reminders of tasks and complete them on time. Teachers will give timely feedback according to the quality of homework.

## 3. Design and Use of Evaluation System

Evaluation is an important part of the teaching process, so it is necessary to design and implement process evaluation and result evaluation by information technology. The assessment and evaluation should integrate the assessment methods of pre-class preview exercise, group activities, in-class practice, and after-class expansion, so as to achieve the purpose of the whole process of diversified assessment, effectively track students' learning status, timely give positive feedback to the students and adjust the teaching method appropriately according to the evaluation results.

Taking the evaluation in class as an example, teachers set up activities in class in advance (such as answers, discussion, in-class exercises, etc.) and assign points. During class, activities and points can be adjusted. For example, in the course of class, the author will reward the top 10 students who practice correctly in class with points, and the top 3 students have the highest points. This improves the enthusiasm and accuracy of students to participate in class exercises. In the case of completing the basic teaching tasks, additional questions will be set for class exercises. Students who complete the course will be encouraged to get extra points, which to some extent balances the progress differences caused by students' different levels of mastery in the teaching process.

During the semester, the intelligent platform is used to regularly show the statistics of the score to students and provide detailed queries, so that students can understand their learning status and professional ability in multiple dimensions. At the end of the semester, students will be presented with the final score, which will be used as the main basis for the process assessment. The score data can be used as the object of course analysis and development and integrated into course learning. Students can process, analyze and visualize the score data through different dimensions and compare the results with the processed results of the intelligent platform. This can further improve students' learning enthusiasm, carry forward their subjective initiative, and make students more intuitively assess their learning status, and experience the characteristics and ability of the course.

In addition to the evaluation of students, there are also evaluations of teachers in the evaluation system. In the course and after the course, students can use the teaching quality management platform and other information means to evaluate the course and teachers and put forward opinions and suggestions. According to the feedback, teachers actively modify and improve the curriculum setting, teaching content, and teaching methods, so as to promote the common progress of teaching and learning.

## 4. Selection and Design of Teaching Resources

With reference to textbooks, micro-courses, online courses, and other resources, combined with the characteristics of big data and the actual industry application background, student performance information, e-commerce user behavior data, and AIS big data are used in the teaching for analysis and development [5,6]. It is necessary to actively carry out school-enterprise cooperation to obtain actual project resources and reasonably integrate them into teaching resources for use. We should make use of professional advantages to build a course resource library, online open courses, etc. The preservation, acquisition, and display of resources are more convenient depending on the management of the curriculum resource library and can be timely revised, updated, reorganized, and reused, which is more scientific in

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use. For the design of teaching cases, we should pay attention to integrity, and maintain continuity in data processing, data analysis, and visual display.

## 5. Conclusion

With the development of the times and technology, informatization teaching has been effectively integrated into traditional teaching, which improves teaching efficiency, enriches the teaching mode, broadens the teaching space and time, and promotes the improvement of teachers' teaching ability and the cultivation of students' comprehensive ability. For the major of big data, it is more important to give full play to the advantages of the major, deepen the application of big data analysis, build informatization platforms, improve the information teaching ability, and use information means to better serve the course teaching and professional construction, and improve the quality of big data professional talent training.

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