

# Research on the Education Reform of Computer Major in Higher Vocational Colleges Based on Big Data

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**Abstract:** Today's society is rapidly developing and constantly updating. With the rapid change of science and technology and the huge increase of information, people use science and technology products to shorten distance and travel more and more conveniently. The Bureau of Technology is the product of the times with high demand for information in this era of science and technology. The future era is no longer the past IT era. With the development of science and technology and the increase of human needs, we will usher in the DT (Data Technology) era.

## 1. Basic Overview of Big Data

### 1.1 Connotation of Big Data

Big data (or mega data) can be interpreted as a huge amount of information resources. The word of big refers to efficient decision-making ability and insight ability to process complex information. It is a new streamlined information processing mode and a complex information asset with rapid information changes and high growth rate. It is different from the previous way of information processing, which changes the way of data processing from the past sampling survey method into the way of processing all the massive data at present. The characteristics of big data are commonly called 5V which are Volume (large capacity), Velocity (fast running), Value (low value density), Variety (many styles) and Veracity (high authenticity).

### 1.2 Characteristics and Significance of Big Data

With the advent of DT era, the ability to obtain valuable information accurately and quickly from huge and complex information is commonly known as big data. The characteristics of big data are mainly divided into four levels. First, the volume of data is huge which jumps from the past TB level to the PB level. Second, the data types are complex and numerous. Third, the value density is low. Fourth, the processing speed is quite fast. Information processing speed is the most obvious and essential difference from the past.

The significance of big data lies not only in its "big" and huge amount of information, but also in its own "useful" value. It can extract effective information from huge amount of information to serve people more quickly. Its main value is mainly embodied in the following aspects. It is able to provide precise products and services for the huge consumers, help enterprises make precise decisions based on big data and improve marketing efficiency. Small and medium-sized enterprises also rely on the background of big data for timely transformation, which is conducive to the adjustment and optimization of industrial structure of traditional enterprises under the pressure of the Internet environment.

## 2. Present Situation of Computer Education in Higher Vocational Colleges in China under the Background of Big Data

### 2.1 Derailed Content of Curriculum with the Times

At present, there is such a problem in the curriculum of Computer major in colleges and universities in our country, whose content does not accord with the development background of the current era. It does not make corresponding adjustments or use new textbooks according to the

background of the current big data era and still uses the old textbooks. Not only that, the teaching method is also a single template teaching existing in the past. The personnel training is out of line with the needs of social reality, thus making students fail to dominant in the current fierce talent market competition.

## **2.2 Old Teaching Method and Students' Lack of Practical Ability**

Cloud Computing is the data support of high-speed operation of large data. At present, computer teachers in colleges and universities in our country pay more attention to students' theoretical knowledge of big data, but neglect experimental operation courses. So, students' understanding of big data remain in the primary cognitive stage without sufficient relevant exercises in practical operation. Moreover, the teaching content of Computer generally needs basic experimental teaching courses. However, because the experimental facilities are old and cannot keep up with the changes of big data era, experimental equipment fail to process the content of current big data, and students cannot really understand the big data and learn to use it.

## **2.3 New Requirements for Teaching Theory in the Big Data Era**

The arrival of the era of big data has put forward new requirements for students. Students need to have creative thinking and a strong sense of creativity to adapt to the rapid development of society and the change of science and technology. Teachers should pay more attention to the cultivation of students' creative thinking in teaching theory, change the old teaching theories, respect students' principal position in the classroom, innovate pedagogical theories, change teaching methods, and train students with high competitiveness to adapt to the development of the times.

## **2.4 Insufficient Teaching Staff**

At present, most teachers of Computer major in colleges and universities in China are professors with very high professional computer literacy or scholars with senior academic qualifications. They usually have more teaching experience and make a lot of contributions to the teaching of Computer major and are leaders of Computer teaching and the creator of the construction and development of Computer major.

The progress of the times and the constant change of social science and technology require professors of Computer major to constantly innovate their theoretical knowledge to adapt to the development of the times. However, many teachers have vacancies in the connection of theory teaching and practical skills with the current era. Their knowledge and skills of big data era need to be updated in time in order to teach and guide students better. If they are not able to timely update the theoretical teaching knowledge of Computer major or improve their practical operation skills, they will not only fail to provide better classroom teaching or train students' practical ability, but also restrict students' development and self-improvement. Teachers are required to broaden their horizons and constantly learn to improve their professional teaching skills.

# **3. Reform Strategy of Computer Major in China in the Background of Big Data Era**

At present, the basic theoretical knowledge of computer teaching in colleges and universities in China has been applied very skillfully in the teaching of professional courses. But in the era of big data with rapid information change, it is essential to update the theoretical knowledge of computer teaching according to the requirements of the times, and introduce theoretical knowledge into classroom teaching content. In order to adapt to the development of the times and keep up with the mainstream of social progress, the teaching content of Computer major in colleges and universities also needs to be changed and updated.

## **3.1 Innovate Curriculum**

The curriculum design of Computer major in colleges and universities should be guided by employment. Computer major in colleges and universities is a tool with high practical value. In the setting of Computer professional courses, it is not necessary to divide them too carefully. We can

combine the teaching advantages of colleges and relevant needs of the job market, integrate the curriculum setting of Computer professional courses with the needs of industry skills, and set up computer professional education with their own characteristics. While teaching basic theory to students, it is required to pay attention to the improvement of students' foreign language proficiency, help them consolidate the theoretical knowledge of basic computer courses and grasp the key and difficult points of teaching. At the same time, in order to meet the specific requirements under the background of the current big data era, we need to strengthen guidance on the improvement of students' vocational skills in the context of the times. According to the specific requirements of students' employment direction and position, the content of computer professional teaching courses is set up to train talents in different employment directions and help students better adapt to the working environment of enterprises after graduation. Moreover, it is required to pay attention to stimulate students' interest in learning and take it as a guide, lead students to choose majors that suit their personality and have a better development, or support students to take part-time courses, so that students have a higher competitiveness. The setting of curricula should be guided by the market demand of the actual enterprises, and take into account all aspects of diversification.

### **3.2 Offer Related Elective Courses to Provide Learning Opportunities for Students in Need**

In the era of big data, data processing of information resources is quite different from the traditional data processing. The setting of computer courses in higher vocational colleges is guided by the actual job needs of enterprises, but not all students need professional knowledge in big data processing. Therefore, colleges are advised to set up some elective courses on big data processing according to the actual needs of students for students with actual professional needs to learn and help students improve their own literacy and competitiveness. Colleges can set up special courses for Computer major, such as Cloud Computing, Introduction to Big Data and Advanced Language Programming, help students fully understand the theoretical knowledge and characteristics of Big Data and the real demand of the market for Big Data, as well as the impact brought by Big Data. Therefore, under the background of big data, computer education in higher vocational colleges should update and strengthen the existing courses, and set them according to the actual needs of the market.

### **3.3 Change Teaching Theory**

The curriculum of Computer major has certain requirements for students' practical operation programming ability. Teachers need to pay attention to the cultivation of students' practical operation ability in the process of teaching theoretical knowledge in class. Teachers are required to attach importance to students' practical operation ability after teaching theoretical knowledge and later practical operation courses, and give priority to practical teaching, so as to help students understand the application of theoretical knowledge in practical programming operation, offer students theme, then let them design and develop independently, and guide them to pay attention to the application of theoretical knowledge and the expansion of thinking in the process of design and research. Teachers should also stress communication and interaction with students, pull in distance from each other, create an active classroom atmosphere, pay attention to the guidance of students' ideas, and timely throw out enlightening questions.

In the process of practical teaching, teachers are supposed to design experiments according to the theoretical knowledge they have learned, and help students to formulate and develop themes according to their actual mastery level. At the same time, it is also essential to stress the content and core technology in the process of practical operation, and guide students to think and practice. Teachers of Computer major should constantly innovate the educational concept, change the teaching mode, and create and innovate in teaching according to the needs of the times.

### **3.4 Emphasize the Improvement of Teachers' Level in Computer Major**

In the era of big data, colleges should pay attention to the construction of professional computer teachers. Teachers are expected to adapt to the needs of the times, learn the theoretical knowledge related to big data, and improve their professional accomplishment and practical ability. In teaching,

it is also asked to stress the combination of theoretical knowledge and practical teaching, the setting of classroom teaching content, and the cultivation of students' big data thinking and innovative consciousness. Teachers should change the old teaching concepts and methods and learn to keep pace with the times and innovate constantly. Higher vocational colleges are also expected to pay attention to the training and introduction of talents and improve the overall quality of their teaching team. Colleges can also strengthen the cooperation with enterprises, introduce enterprises' computer professionals and train teachers, which is conducive to teachers according to the actual job needs of enterprises and is propitious to carry out targeted curriculum teaching content settings. At the same time, colleges need to change their assessment system, so as to pay all-round attention to the improvement of teachers' strength.

### **3.5 Change the Teaching Form and Follow the Trend of the Times**

With the rapid development of the times and the continuous renewal of various information technologies, colleges can change the form of classroom teaching according to the actual needs, combine online teaching with offline teaching, and make full use of the network platform to carry out online supplementary teaching. Based on computer information technology, it is feasible to introduce such teaching methods as micro-class to the classroom, so that students are also allowed to learn theoretical knowledge after class. Meanwhile, teachers and students can timely solve the problems encountered in the operation of curriculum practice through online communication.

## **4. Conclusion**

The arrival of the era of big data provides great convenience for human life, but also brings challenges. Computer major in higher vocational colleges should change teaching theory and teaching methods according to the needs of the times, pay attention to the construction of teachers, and improve teachers' professional teaching level. While paying attention to students' ability to apply theoretical knowledge, it is also required to pay attention to the expansion of students' thinking and the cultivation of their innovative consciousness, so as to help them gain a foothold in the talent competition.

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