

Research on Ideological and Political Teaching Reform of Big Data Foundation and Application Course under the Background of New Business

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Abstract. Comprehensively promoting the construction of ideological and political courses is a strategic measure to implement the fundamental task of moral education. Colleges and universities should actively carry out the reform of ideological and political courses and integrate them into the whole process of classroom teaching construction. With the development of information technology and the popularization of the Internet, global data shows the characteristics of explosive growth and mass accumulation. With the development of data science and big data technology, China's big data has made remarkable progress in technology, industry, application and other levels. In this paper, the author studies how to integrate moral education elements into the big data classroom, through in-depth excavation of the ideological and political education elements contained in the professional curriculum, to promote the organic combination of knowledge imparting, ability training, ideals and beliefs, values and beliefs, and moral education, and to integrate ideological and political education into all aspects of professional curriculum teaching, so as to achieve moral education and moisten things silently.

1 Introduction

New business is a new concept put forward under the background of new economy and new industry in China, which is based on the development of existing business and actively responds to the challenges brought by a new round of scientific and technological revolution and technological innovation to society and economy. New business takes the digital economy as background, new business talents are high-quality compound talents with strong practical application ability and innovation ability for big data, artificial intelligence, cloud computing, etc. compared with the traditional business talents. The new business also puts forward higher requirements for the talent training mode of colleges and universities. On the one hand, the new business education concept emphasizes the intersection, comprehensiveness, innovation and frontier of disciplines, and pays attention to improving students' comprehensive quality; On the other hand, it attaches more importance to guiding students to accumulate enough discipline foundation and humanistic quality, and stimulating students to take on the mission of serving the country through science and technology.

Big Data Foundation and Application course is based on statistical principles and Python language programming courses, which has a certain degree of interdisciplinary and strong practicality. The course mainly studies the framework and system of big data, Python programming basis, and making statistical

analysis and mining of big data by using Python. As an important course in the construction of new business, this course needs compound talents with strong political ideology, solid basic knowledge, strong practical ability, innovative spirit and international competitiveness, and good ideological and political morality is the necessary requirement and primary condition for high-quality talents. In addition, the course is highly comprehensive and representative, in which many ideas and concepts are closely related to our lives and contain rich philosophy of life, which is very suitable for ideological and political education.

2 Analysis of Current Situation

Yong Zhang pointed out that the basic path of ideological and political teaching construction of big data course includes revising the syllabus to clarify the ideological and political objectives of the course, digging deep into the teaching content to refine teaching materials, and effectively applying teaching methods to promote teaching reform[1]. The teaching method is considered by Linlan Zhang. She thought that ideological and political education contains academic teaching and practical education teaching. Academic teaching used the method of case analysis, and practical teaching used the project teaching method of collaborative research, group discussion and active learning[2]. Li Xihong believed that teaching forms and teaching methods should be innovated. Teachers should

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combine current affairs with topics of interest to students, make good use of network resources, enrich classroom content, and guide students to explore actively[3]. In addition, we should also make good use of online high-quality teaching resources and adopt a mixed online and offline teaching mode. Shen Zongzheng considered that big data technology was updated quickly and practical, and students could be encouraged to learn cutting-edge technology by themselves through "flipped classroom", providing students with some project cases, encouraging students to practice and master real skills[4].

In the integration of curriculum ideology and politics into big data teaching literature, there are more theoretical studies on the elements of curriculum ideology and politics and the basic path of curriculum ideology and politics construction, and fewer practical studies on the whole process of curriculum construction system such as curriculum ideology and politics materials, teaching methods and teaching evaluation[5]. In the literature, the ideological and political elements of the big data courses mainly include patriotic feelings, national confidence, scientific and technological innovation, exploration spirit, excellence, craftsman spirit, professional ethics, and legal thinking[6]. The basic path of statistics curriculum construction mainly includes revising the outline to clarify the "ideological and political objectives of the curriculum", digging deep into the teaching content to extract teaching materials, and effectively applying teaching methods to promote teaching reform[7]. As for teaching methods, the main use of case analysis, discussion heuristic method, character story method, practice teaching method[8].

3 Research on Ideological and Political Teaching Reform of Big Data Foundation and Application under the Background of New Business

3.1 Research Objectives

To implement the integration of ideological and political courses into the whole process of big data classroom teaching construction. Starting from all aspects e.g. classroom teaching, experimental training and homework papers, we integrate the ideological and political course. It also innovates the classroom teaching mode, properly uses case analysis method, character story method, literature intensive reading method, discussion heuristic method and practice teaching method to attract students' interest, lead students to think, and effectively improve the teaching level of integrating the ideological and political connotation of the course into the classroom.

To cultivate new business big data compound applied talents with basic statistical theory and methods, big data analysis ability, patriotism, dedication, pragmatism and pragmatism. According to the training goal of compound applied talents of big data in new business science, we should take fostering virtue

through education as the foundation, adhere to the combination of knowledge imparting and value guidance, closely focus on the content of big data analysis, combine the latest industry development trend and the deep integration of big data and economic society. In the process of imparting knowledge, we should imperceptibly infiltrate the ideological and political elements such as patriotism, national self-confidence, scientific and technological innovation, exploratory spirit, excellence, craftsmanship, professional ethics and legal thinking so as to enhance students' sense of values[9].

3.2 Research Content

The first point is to revise the teaching programme and improve the value objectives of big data course. In order to ensure the smooth implementation of ideological and political course from the source, it is necessary to solidify the goal of shaping the value of ideological and political course in the teaching programme. In the practice of big data curriculum, it is required to integrate the patriotism, national self-confidence, scientific and technological innovation, exploratory spirit, excellence, craftsmanship, professional ethics and legal thinking into the value objectives as the main ideological and political elements of the courses.

The second point is to dig deep into the teaching content and refine the ideological and political teaching materials. The ideological and political materials of curriculum are the carrier to realize the ideological and political goal of curriculum. Firstly, we can collect the ideological and political materials of previous courses in the teaching content of big data through the research of newspapers, periodicals, papers, books and other literature. Secondly, we can collect the valuable experience of front-line teachers through in-depth interviews with big data teachers with rich teaching experience and around the core of value objectives. Furthermore, according to the collected materials, we can summarize the channels and principles of refining the sources of materials. Finally, we should dig deeply and expand more materials for each part of the teaching content, so as to better integrate the value objectives into the big data course.

The third point is to use the ideological and political materials, and carry out the mixed online and offline teaching mode. The course team should combine the characteristics of ideological and political materials with teaching content. On the one hand, we should adopt the modular teaching at the online teaching platform to modularize knowledge, which is more conducive to students' learning, training, consolidating knowledge points and interactive communication. On the other hand, we should appropriately select the teaching methods in the prescribed classroom teaching such as case analysis, discussion heuristic, character deeds, practice teaching etc. Based on the mixed teaching mode, the ideological and political content of the course is flexibly deployed in all aspects of teaching so as to realize the knowledge fusion, ability enhancement and valuable hint through imperceptible influence and spring breeze and rain[10].

3.3 Implementation Plan

Big Data Foundation and Application is a comprehensive interdisciplinary subject, covering a wide range of teaching contents. According to applied talents educational objectives with big data in the new business science, based on the moral education, the course content adheres to the combination of knowledge imparting and value guidance, and closely centers on the content of big data analysis, as well as combines the latest industry development trend and the deep integration of big data and economic society. In which, the ideological and political elements such as patriotism, national self-confidence, scientific and technological innovation, exploratory spirit, excellence, craftsmanship, professional ethics and legal thinking are imperceptibly permeated in the process of imparting knowledge, so that students can become qualified big data analysis talents with basic statistical theory and methods, big data analysis ability, patriotism, dedication and pragmatism.

According to the cognitive ability of teaching object, the ideological and political elements of course are integrated into the teaching programme, teaching plan and teaching process. The ideological and political elements of big data course and the corresponding teaching cases can be integrated into each chapter are shown below.

3.3.1 Patriotism and National Self-confidence

Big data is considered as a national development strategy, it is able to show the vigorous development of big data in China by introducing Baidu's in-depth learning platform "Paddle" and "AI Studio", China's big data government platform, big data medical platform and other excellent company cases when introducing the theoretical knowledge of the application field and development process of big data, so as to cultivate students' patriotism and enhance their national pride and self-confidence. It is also able to combine with the reasonable, legal and effective collection and application of big data during the epidemic period in China and its important role, such as the rational allocation of materials by applying big data technology, development of big data assisted drugs, study and judgment of epidemic situation by big data technology support services, deployment of epidemic prevention and control, and monitoring and statistics of floating personnel so as to introduce the superiority of socialist system, strengthen socialist ideals and beliefs, and cultivate the patriotism.

3.3.2 Scientific and Technological Innovation, Brave Exploration

Combining with the experience of hard study and struggle on the road of entrepreneurship of big data mining leaders, we can introduce Xu Wei, an outstanding scientist of Baidu, Zhang Tong, Director of Tencent Artificial Intelligence Laboratory, He Xiaofei, President of Drop Research Institute, and other scientists in-depth learning, artificial intelligence AI, etc. so as to stimulate students' determination and enthusiasm to innovate in science and technology, explore the unknown, and constantly learn to pursue their dreams. Or combining with the development process of big data storage technology, we can see the spirit of perseverance in scientific research from the stage of manual management, file system, database to the stage of big data distributed file system so as to guide students to set up lofty aspirations and down-to-earth spirit of scientific exploration and innovation.

3.3.3 Striving for Perfection and Craftsman Spirit

By describing the experimental comparison to introduce the spirit of craftsmen, it is necessary to repeatedly compare with other studies carefully and carefully to obtain statistically significant indicators of progress, in order to illustrate the effectiveness of the proposed algorithm. Through the integration of the iterative process of model establishment and the spirit of craftsmen, the case of Huawei winning the first prize of "China Quality Award", the highest government award in the field of quality in China, is introduced to elaborate the spirit of craftsmen of Huawei enterprises in pursuit of excellence and excellence.

3.3.4 Professional Ethics and Legal Thinking

By introducing the social problems of data security such as Facebook data leakage, big data "killing ripeness", big data trading and abuse, privacy protection etc., it is able to guide students to abide by relevant laws, regulations and basic professional ethics and establish the thinking of rule of law when performing data collection and application. Through the understanding of the ethical problems brought about by the manipulation of political economy by big data and artificial intelligence, we can dialectically understand the essence and dual nature of big data and artificial intelligence.

As shown in table 1, the ideological and political teaching design for each chapter includes teaching content, ideological and political elements and teaching methods.

Table 1. Teaching design of ideological and political elements in course chapters

Teaching content	Ideological and political elements	Teaching method
Concept and application of Big data	Patriotism and National Self-confidence	Problem approach
Fundamentals of Python	Striving for Perfection and Craftsman Spirit	Character story method

Data pre-processing	Professional Ethics and Legal Thinking	Case analysis method
Data visualization	Science and innovation	Practice method
Machine learning algorithm	Scientific and Technological Innovation, Brave Exploration	Discussion heuristic method

3.4 Research Methods

The method of copy investigation: We can collect the ideological and political elements of course, ideological and political elements of course related to big data, ideological and political cases of course related to big data and other materials through periodicals, newspapers, books, policy documents and other channels to prepare for the follow-up research of the project.

The method of expert consultation: We can invite experts of statistics specialty in the school to review it upon determining the teaching programme.

The method of personal in-depth interview: In the stage of designing the ideological and political materials of course, we can collect the ideological and political materials of course and feasible teaching methods through interviewing the advanced big data teachers. We can obtain the the first-hand information of teaching effect by interviewing the teaching objects.

The method of theoretical analysis: In the stage of designing teaching methods, we can design the reasonable teaching methods through theoretical analysis of materials, teaching contents and students.

The method of questionnaire survey: In the stage of effect evaluation, we can collect students' attitudes and opinions towards the course through questionnaires.

4 Conclusion

At present, traditional industries have been deeply integrated by big data technology which has become a powerful tool in the critical period of industrial upgrading in China. The infiltration of ideological and political education in big data courses is not only the core requirement of new business education concept, but also the necessity of ideological and political education. Based on the characteristics of cultivating talents in the big data course, the author proposes to infiltrate 8 types of ideological and political elements in the course teaching, including patriotism, national self-confidence, scientific and technological innovation, exploratory spirit, excellence, craftsmanship, professional ethics and legal thinking in this paper. In addition, the selection of materials should follow the four principles of paying attention to China's national conditions, close to students' lives, combine social hot spots and integrating professional knowledge. In terms of teaching methods, on one hand teachers should greatly improve the level of expertise, teaching ability and political theory level so as to better implement teaching and educating people.

Secondly, we should respect the students' needs and attract their interest when designing the teaching methods so as to make the professional courses move forward with ideological and political course, and

imperceptibly infiltrate the ideological and political elements of course in the imparting of knowledge.

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