

Research on the Strategy of Ideological and Political Education in Transportation Major with Data Technology Under the Background of Comprehensive Education

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Abstract. With the development and popularization of big data technology, big data technology has also been applied to enhance the quantity and quality of ideological and political education in university various professional courses research. This article is based on the theory of "three comprehensive education" and, in the context of its comprehensive education, explores the integration strategy of ideological and political education in transportation professional courses from the perspectives of resource library, classroom, multi-dimensional time data push, evaluation, and other aspects. It aims to achieve seamless integration of big data and ideological education in transportation professional courses, and promote the healthy development of new model curriculum education.

Keywords: big data; comprehensive education; course ideological and political education; transportation

1 Introduction

The important significance of implementing the concept of "three comprehensive education" lies in running a socialist university with Chinese characteristics well. Only by fully participating in the all-round education work can the systematization of the entire education and teaching process be ensured in higher professional education. The third connotation of "all-round education" not only refers to academic achievements, but also emphasizes the development and establishment of values, life views, and other aspects of teaching subject in the education process. Since ancient times, education in China has focused on cultivating moral character and cultivating students[1]. In the context of comprehensive education, we must adhere to this fundamental task and use the ideological and political mechanism of the curriculum to deepen students' ideological and political education. At present, it is a significant period for the development of a strong transportation country. The importance of transportation in supporting the development of national production, life, and economy is self-evident. To

cultivate outstanding talents capable of comprehensive and integrated transportation development, it is not only necessary to have solid theoretical knowledge and outstanding practical abilities, but also to have systematic thinking, responsibility, and craftsmanship spirit. Relying on the transportation profession and utilizing the concepts and technologies of the digital era, we will integrate the ideological and political system, resources, methods, applications, and other aspects of the professional curriculum, empower the ideological and political work of the courses with data technology, form a comprehensive integration and penetration model, promote the intelligent upgrading of ideological and political courses, and assist in the comprehensive education of the transportation profession.

2 The necessity analysis of data empowering ideological and political education depend on comprehensive education

In the context of the new era, the "three comprehensive education" has pointed out the development direction for higher education management and ideological and political education. Higher education is the top-level setting of the entire education system, and ideological and political education is the top priority of higher education. Ideological and political education in universities should accelerate innovation in form and content, adapt to the requirements of the times trend, join new medium, and create new paths. Empowering comprehensive education with data elevates the work of education from a global, systematic, intelligent, and integrated perspective, guiding students majoring in transportation to establish correct values from various perspectives.

2.1 The urgency of course ideological and political education

Since the 20th century, China has strengthened the construction of curriculum and ideological and political education, which is a key part of high-quality education. Higher education at the top of the education system should also consider the construction of the form and content system of curriculum ideological and political education, in order to meet the requirements of the times. The transportation power has put forward more precise and integrated requirements for curriculum ideological and political construction, as an important lever for the output of transportation professionals, further ensuring the effectiveness of education. However, some universities are currently limited by ideological and political resources, as well as the lack of theoretical knowledge, teaching methods, and the connection between textbooks and ideological and political cases. Some teachers lack awareness of ideological and political education and lack innovation ability, which leads to the stagnation of the development of ideological and political education in the curriculum and unable to improve the students' interest in learning ideological and political education in the curriculum. From this perspective, it is urgent to strengthen the construction of the curriculum ideological and political system.

2.2 Targeted student-centered

The traditional model of ideological and political education in curriculum is mainly based on teachers, who collect ideological and political cases and deeds, connect professional knowledge points and life practices, and transmit value concepts to students through classroom teaching in

an indoctrination style. Although this traditional approach is relatively mature and easy to operate, it has little effect on achieving the concept of comprehensive and full-time ideological and political education. Passive reception of relevant teaching resources by students is not conducive to strengthening their independent cognition and driving force for independent learning of ideological and political education. It is unable to achieve personalized teaching and evaluation and detection of course ideological and political education, and cannot optimize teaching content and methods in a timely manner based on the absorption effect of students. Establish student-centered educational goals, and through integrated planning, enable students to have independent access to the infiltration of ideological and political education in the curriculum at any time.

2.3 The advantages of data empowerment

Based on the urgency and goals mentioned above, how to address the limitations of ideological and political education in courses and enhance the effectiveness requires the use of strong driving forces, and smart technology is the key to promoting the transformation of comprehensive ideological and political education in courses. Nowadays, the digital age has become a trend. In the field of ideological and political education in university courses, digitalization is promoting comprehensive education and the integration of ideological and political education in courses. Whether it is the management of various resources and systems for ideological and political education in university courses, breaking through the multidimensional limitations of teachers and students in learning ideological and political education, or innovating in forms such as classroom communication, after-school evaluation, and tracking and testing the course learning effectiveness, big data technology can achieve video and text push, system sorting, resource sharing, etc. through online platforms, helping students establish a knowledge system for ideological and political education in transportation majors, ensuring the continuity and legitimacy of knowledge points, inspiring students to actively learn independently, and better corresponding to the pattern of all-round education.

3 Strategies for data empowerment

The transportation major courses mainly cover the infrastructure and planning layout of five transportation modes: road, rail, aviation, water transportation, and pipeline, and learn about transportation planning, information control, business management, and emergency response. The transportation industry is the vanguard and foundation of the national economy, playing a major role in the development of various industries in society, industrial scale construction, and national defense construction. Deepening the ideological and political spirit contained in transportation courses, in the context of all-round education, provides indispensable ideological support for cultivating advanced transportation personnel. By deepening the cultivation of the course profession, based on the basic situation of ideological and political education in transportation majors, integrating the advantages and practical needs of big data teaching, an integrated data empowerment course ideological and political strategy design can be planned to achieve the integration of ideological and political education in both online and offline courses[2]. The integration strategy is shown in Figure 1.

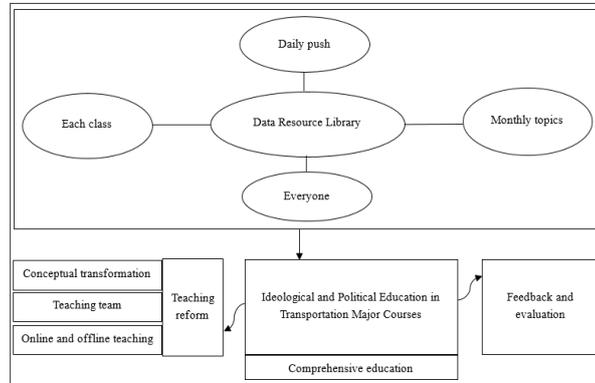


Figure 1. Data empowerment course ideological and political integration strategy

3.1 Establishment of resource library

The ideological and political education curriculum in transportation major mainly involve learning relevant theoretical and practical knowledge of transportation, exploring the ideological and political essential factors contained within, and establishing a comprehensive and searchable course ideological and political resource library. The resource library is expected to be searchable from all dimensions, with the most basic dimension classified according to five transportation modes: road, rail, air, water, and pipeline, providing the most intuitive transportation mode options. The second conceptual dimension is the scope of ideological and political education in transportation courses, such as transportation ethics and regulations, responsibility and honour for the development of transportation prospects, sustainable development of transportation environment and resources In terms of craftsmanship, traffic safety, and emergency response in the transportation manufacturing industry, the third conceptual dimension is classified and searched according to the key figures, key milestone events, and key transportation innovation involved in the development of transportation[3]. On this basis, users are provided with keyword search, and functions such as editing, modifying, uploading, and deleting are provided for teacher administrators to maintain the course ideological and political element library.

Through the improvement and continuous updating and optimization of the resource library, a massive amount of resources have been provided for the content of ideological and political education in teacher courses, accurately matching course knowledge. Simultaneously, online case resources have been provided for student-centered autonomous learning and search, achieving real-time learning without space or time constraints. A data technology carrier for ideological and political education in courses has been created, providing technical support for achieving all-round education.

1)Each class has ideological and political education: Through the establishment of a course ideological and political resource library, each course content focus in transportation related courses can be matched with relevant course ideological and political cases. Through pre class preparation and online Internet plus in class, teachers send classroom ideological and political search tasks, so that students can integrate into the classroom learning of ideological and

political courses, actively connect with the context of teaching progress, run the knowledge system through the whole classroom teaching process, and achieve the infiltration of ideological and political knowledge in all classes. By utilizing the teaching resources of big data in the resource library, students can perceive the development of transportation and the responsibilities and spirits contained therein, making them deeply aware of the social changes brought about by transportation in the classroom.

2)Each day has ideological and political education: Push mechanisms are no longer unfamiliar in today's digital age, and in the era of information overload, more and more application scenarios are obtaining information through incompatible devices and platforms. As an integrated data analysis foundation that integrates computer science, statistics, education, psychology and other interdisciplinary, precise guidance and personalized recommendations are provided based on the categories of course ideological and political education that students search for, as well as course ideological and political education cases with large click frequency[4]. By utilizing the backend push mechanism of the resource library, daily random push of small knowledge points or cases related to ideological and political education in courses, as well as the deeds of individuals, can be achieved more accurately in the context of comprehensive education for students[5]. Teachers can set up classes on the Learning Platform, and students can join the class for daily learning. The daily push session can be set according to the needs of students, with push times and number of cases consciously adjusted according to the degree of student absorption. After learning, the backend can collect data and analyze, optimize, and adjust according to the daily learning situation.

3)Each month has ideological and political education: Based on the analysis of backend data in the resource library and the comprehensive reading and retrieval volume of teaching subject on ideological and political courses in transportation, a special theme is formulated every month. Teachers and students engage in online discussions, messages, and reflections on this topic. Through the theme course ideological and political education activities, they continuously accumulate popular topics such as historical context, important political news, cutting-edge technology and transportation hot topics, transportation practice activities, craftsmanship spirit, and strong manufacturing. They absorb ideological and political concepts that match the transportation profession from rich data resources.

4)Everyone participate in the ideological and political education: In terms of resource library usage, whether it is administrative personnel specializing in transportation, counselors, full-time teachers, students, or other roles, they can be certified and registered, and assigned different usage ranges and functions according to different roles. On the basis of having ideological and political education in each class, daily and monthly, everyone related to the profession should participate. Teachers can rely on resource platforms to broaden their horizons and scope of ideological and political education in transportation courses, and better serve their teaching quality. Students rely on resource platforms to increase the internal driving force of ideological and political education in their courses, and form a deeper understanding of the immortal spirit related to their majors. Everyone's participation can not only form the integration of professionalism and ideological and political education, but also promote the integration of in class and out of class, which is in line with the era's idea of guiding students to establish correct values in all aspects.

3.2 Reform of teaching methods

The development of the big data era undoubtedly poses new requirements and opportunities for teacher teaching. By establishing a team for ideological and political education in transportation courses and utilizing the resource support of the resource library, the reform and innovation of teaching methods have also been promoted. The most important thing is the blended learning of online and offline, which enriches the teaching mode of teachers and enhances students' interest in learning. Students don't just need to focus their learning time and space on the extracurricular classroom. Through the online class module of Learning Pass, they can sort out and preview knowledge points and ideological and political content online, and deepen their impression through the resources pushed by teachers. After returning to the offline classroom, through the degree of preview, the teacher provides targeted explanations and guidance on key and difficult points. Through deep interaction between online and offline, the teacher optimizes and innovates the teaching mode, so that the ideological and political education of the course can be fully presented to participants in the context of big data technology, achieving more significant ideological and political education effects.

Both teachers and students need to change traditional teaching and learning methods. By relying on big data platforms and practical analysis technologies, teachers continuously optimize the ideological and political resource library of courses, establish specialized ideological and political teaching teams, and enable students to transform their concepts from isolated learning to cooperative learning. Both sides strengthen further thinking on the ideological and political aspects of transportation courses.

3.3 Feedback and evaluation

Course ideological and political education is not only about communication and interaction between teachers and students, but also requires teachers to adopt relevant feedback and evaluation mechanisms to test learning effectiveness, and provide personalized scoring based on each student's learning situation, thereby providing students with a basis for identifying and filling in gaps[6]. Through big data backend data analysis, it precisely meets the requirements of comprehensive and multi-dimensional, and the data can be intuitively displayed to students, encouraging them to independently review and summarize, thereby achieving comprehensive control of student learning by teachers.

4 Conclusions

Empowering the ideological and political education model of transportation professional courses with big data technology, breaking the limitations of traditional teaching models, improving the quality of teaching and learning, and better achieving the requirements of the era of comprehensive education for a strong transportation country. By relying on big data technology and designing an integrated strategy for ideological and political education in courses, we aim to ensure that everyone participates in ideological and political education at all times and can provide timely feedback and optimization, continuously improving students' ability to explore ideological and political education in courses. However, there are still some shortcomings in practical applications, such as the capture and backend maintenance of course

ideological and political resources, and the security protection of data resources, which need to be further improved. In summary, data empowers ideological and political education activities in transportation courses, constructs integrated data strategies, innovates teaching models, and achieves comprehensive and precise control of ideological and political education in courses.

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References

- [1] Yang Xiaohui. "Three Comprehensive Education in Higher Education: Theoretical Connotation, Practical Problems, and Practical Pathways[J]. China Higher Education, 2018 (18): 4-8
- [2] Dalton Miklozek;Heather.Is the Development of Moral Reasoning by College Students Impacted by Online Course Delivery?[D].Indiana State University,2018.
- [3] Tian Wenya. Research on Innovation of Ideological and Political Education in Universities in the Era of Big Data[D]. Nanjing: Southeast University, 2021:70
- [4] ROMERO C,VENTURA S.Educational Data Mining and Learning Analytics:An Updated Survey[J].WIREs Data Mining and Knowledge Discovery,2020,10(3):e1355.
- [5] Li Xiangcheng. The Realistic Dilemma and Implementation Path of Deepening the Comprehensive Reform of "Three Comprehensive Education" in Universities [J]. China Higher Education, 2021 (23): 44-46.
- [6] Zhao Fuxue, Li Lin, Wang Jie, Zhao Peng, Li Zhuangzhuang. Ideological and Political Construction of Physical Education Curriculum in Universities Research on Method Innovation and Path Extension for Improving Quality and Efficiency[J].Journal of Tianjin Institute of Physical Education2022, 37 (4): 387-394