Innovation Strategy of Network Ideological and Political Education Based on Big Data

Linjian He¹,*
¹Guangzhou Academy of Fine Arts, Guangzhou, 510006
*Corresponding author email: linjianhe@gzarts.edu.cn

Abstract. In the context of the Internet era, the diversity and authenticity of data collections provide visual data support for work decisions and process optimization. NIAPE (Internet ideological and political education) is an important educational reform that adapts to the development of the Internet era. In view of the single teaching method, insufficient grasp of the characteristics and laws of network education, and low awareness of network utilization, in order to achieve educational results, it is necessary to know how to skillfully use the advantages of the current network age for innovative applications, combining education with precision objects and key groups of "small and beautiful", and innovating education and teaching from the aspects of curriculum optimization management, precision push, and perfect evaluation mechanisms.

Keywords: Big Data, Internet Ideological and Political Education, Innovation, Strategy

President Xi Jinping once emphasized that political work must advance with the times and fully integrate the background of the current Internet era. If political work is not integrated with the Internet, it will not be able to pass the times. He expressed the need to scientifically, rationally, and flexibly use the advantages of the Internet era to strengthen the ideological and political work of colleges and universities, advance with the times, make good use of the situation, and make full use of the current digital media technology to promote the development of ideological and political work in colleges and universities.

1. The concept of NIAPE
The rapid development of Internet technology has promoted the prosperity of the society and economy, and has also promoted technological changes in other industries in the society. [1] NIAPE is a major change in the field of education and an inevitable requirement for the development of the times. Traditional ideological and political education focuses on the innovation of classroom teaching, and the Internet gives greater possibilities. This is not only limited to the source of content, but also the effect of teaching. The new era focuses more on the correct application and effective use of the network, and the convenience and benefits brought by the network. The emergence of network ideological and political education is to keep up with the actual needs of the development of education
in the new era. This is mainly reflected in the changes in three aspects. [2] One is the shift from traditional textbook content to the provision of massive information content on the Internet, not only text materials, but also audio-visual videos; the second is the shift from face-to-face teaching in offline classrooms to the diversification of online multimedia teaching methods, the development of new media has once again promoted the innovation of teaching methods; [3]the third is to shift from offline education platforms to online and offline integrated development, while breaking through time and space constraints, it also brings regulatory challenges. The era of big data is an era of efficient processing of network information. The acquisition, processing, analysis and utilization of information resources will all contribute to the further reform and innovation of the NIAPE curriculum system and teaching mode.[4]

2. The Meaning of Big Data and Analysis Tools
Interpretation of big data: huge data collection, Refers to a collection of data that cannot be collected and processed through conventional software tools under certain circumstances, but requires tools and processing modes with stronger capabilities to process it. Simply understand that big data is a massive collection of data stored on the Internet. It must be managed by specific processing modes for management statistics and comparative analysis to obtain objective results, and this objective result is conducive to our next decision-making and work process optimization. According to IBM's point of view, big data has 5V characteristics, Volume (large), Velocity (high speed), Variety (diversity), Value (low value density), Veracity (authenticity). [5]

Big data analysis includes six fundamentals: visual analysis, data mining algorithms, predictive analysis capabilities, semantic engine, data quality and data management, data storage. The tools mainly use open source software programs such as ROLAP, MOLAP and HOLAP. In addition, commercial tools such as Vertica, Oracle and Teradata can also be used, most of the domestic multi-dimensional tools are native. But no matter what kind of tool, the several steps to realize data analysis are the same, as shown in Figure 1.

![Figure 1. Data analysis steps](image)

3. Current Status of NIAPE

3.1. The teaching methods of NIAPE are single
Although all colleges and universities across the country actively responded to the call of the Central Ministry of Education, advocated NIAPE, and strive to change the education model, at present, the teaching methods of colleges and universities still have shortcomings. Many schools just move the knowledge in textbooks to the Internet. Did not really understand the connotation and essence of online education. This obviously does not match the identities of contemporary college students, especially those of "Internet natives". They are more open-minded, better at network expression, pursuing self-understanding, and presenting a "fan" effect. Moreover, the network is no longer simply the display of web content, but the integrated development of multiple network carriers such as text, animation, film and television, and self-media. In the questionnaire, the question about "what form of network expression do you think can better help you understand information?", 70% chose text plus animation or video, 16.9% chose video, 7.93% chose animation, and 5.17% chose plain text (as shown in Figure 2). Judging from the popular online platforms used by young people, they mainly focus on WeChat, Weibo, Douyin, Toutiao, etc. These are all network applications that college students must use and watch every day. Therefore, in order to achieve actual results in NIAPE, we can no longer be
limited to online classroom content. We must also study the online platform that college students love, and grasp the scale of NIAPE through the transformation and innovation of form and content, as much as possible to form subtle ideological education on various network platforms, and to fully grasp the right to speak of NIAPE.

![Figure 2](image)

**Figure 2.** What kind of network expression do you think is better to help understand information distribution

3.2. Insufficient grasp of the characteristics and laws of NIAPE

The network's extreme speed, resource diversity and breakthrough time and space characteristics make the realization of NIAPE more possible. It can make full use of various graphic and audio-visual resources on the network, realize online and offline interaction, and can be carried out anytime, anywhere. But based on the particularity of NIAPE, in view of the political and ideological nature of NIAPE, all this requires no one to be able to speak or spread at will to avoid serious consequences. That is to say, teachers must fully consider and grasp the standards and methods of network NIAPE. Among them, mastering the characteristics and laws of network NIAPE is the key. In the questionnaire, the survey on "Do you think online NIAPE activities should have characteristics", 74.48% think that online news and public opinion should be analyzed in time, 74.14% think that the content should be rich and interesting, 70% think that education methods should be rich and diverse, and 68.62% think that the discourse should be humorous and friendly (as shown in Figure 3). At present, on the one hand, there are still major shortcomings in fully understanding the respective characteristics of the Internet and NIAPE, as well as the law of their integration and development. On the other hand, in the application of Internet technology, in addition to the inability to keep up with the pace of self-media updates, the management and utilization of big data has not really exerted its effectiveness.
3.3. Poor awareness of using big data in online NIAPE

Internet NIAPE is not only a teaching method, but also an important performance of the NIAPE system. Its targeted students and teaching objectives have not changed at all, which shows that for online NIAPE, the important research is still the educational objects and educational effects. In the era of big data, any trace of human behavior on the Internet can become the basic data of big data. In a certain amount of comprehensive processing and analysis, it is possible to find out which content students focus on, which teaching method they prefer, and what their internet usage habits are. In addition, big data can also be used to fully grasp the effect of online education. For example, the effect of education can be evaluated through specific quantitative data such as click-through rate, reading volume, webpage stay time, and number of discussions. However, looking at the current online NIAPE, there is still less analysis and application of big data in this area, and the efforts to basically stay in the teaching content and methods, lack of mining and utilization of existing online education data.

4. The Combination of Network NIAPE and Big Data

4.1. Using big data to realize precision education of online NIAPE

To achieve precision education in online NIAPE, there are three main levels of precision, including online teaching methods, teaching content, and teaching objects. This is not only connected with the traditional hierarchical teaching and classified teaching, but also showing new characteristics and new standards in the era of big data. Using big data to focus on the accumulation of early-stage data of online NIAPE, through capturing, managing and processing, we can obtain teaching methods that students love to hear. For example, in an educational event on an ideological and political theme, the preference for push video, audio and video viewing, or live video speech, big data analysis will make this effect more accurate to considerable data. This is conducive to ideological and political teachers to summarize and improve the teaching methods of the curriculum to achieve the greatest teaching effect. At the same time, what is more worthy of analysis is that the big data analysis for teaching objects, based on the personalized development of contemporary college students, also shows hierarchical knowledge acquisition. Some college students showed optimism and acceptance, some college students showed passive acceptance, and even a small number of students showed resistance. How to accurately classify these types of students, and then provide corresponding education in a targeted manner, is difficult to classify for traditional teaching, and the learning behavior analysis of big data will realize this possibility. In the same way, in the setting of teaching content and system construction, there is no doubt that big data will provide teachers with more comprehensive reference and decision-making on the key points and difficulties of the content, as well as the points of interest of
students.

4.2. Using big data to realize the shift from "big and complete" education to "small and beautiful" key group education

NIAPE is a comprehensive and universal education for all college students. The effect that needs to be achieved is the comprehensive ideological transformation and promotion of all college students, a large number of teaching objects, and a comprehensive education theme. In short, this is "big and complete" education. In the context of the new era, the personalized development of NIAPE objects, the facilitation of expressing themselves on the Internet, and the rich diversity of access to resources have all made "large and complete" education a great challenge. Learning is not clear, learning is not refined, and there are some loopholes and blind spots in the overall teaching effect. These manifestations will be practical problems in NIAPE. The advent of the era of big data will most likely change this problem. Accuracy comes from a large amount of basic data, and precision education will also propose a recipe based on this. This is the "small and beautiful" key group education. Small refers to key groups. Through big data analysis and management, education objects are distinguished, which students need to strengthen the education of regular content, and which students can focus on training education, with precision to the individual. Beauty refers to difficult content, high-quality courses, etc. The creation of these content is not the teacher's sole decision, but the comprehensive consideration and analysis of various data.

4.3. Utilizing big data to enhance the value of traditional teaching

Online NIAPE is not only a reform of teaching methods, but also further enhances the value of traditional teaching, especially in the era of big data. The value of traditional teaching lies in targeting a fixed group of college students in school, the interaction between teaching and learning is difficult to present in real time or achieve an effective communication and interaction, and at the same time, the excellent offline teaching experience will also be limited by the region. Internet NIAPE breaks this tradition, rapid communication and interaction, network fermentation of hot graphics, and live broadcast of video and voice. These changes in educational methods will greatly change and enhance the value of teaching. And big data is an important tool and reference standard for measuring the value of this teaching. Whether the curriculum is set up well, whether teachers teach well, whether students absorb well will all be determined by big data. This will be a comprehensive and comprehensive analysis data, rather than a traditional single data decision. This is more reliable and authentic. Of course, this data standard needs to be established based on actual educational content, actual teaching methods, and the actual situation of college students.

5. Strategies for the Innovative Application of Big Data in Online NIAPE

5.1. Master the key technologies of the network and establish self-database

To use big data, it is built on the basis of a large number of data collections, and it is necessary to build its own database. For colleges and universities, NIAPE and teaching departments often do not have this technical ability. Therefore, the key to solving the problem is that colleges and universities must master the key technologies of the network. It can start from two aspects. On the one hand, it uses its own existing conditions to establish it and cooperates with the network information technology center, at the same time of network NIAPE, ideological and political teachers put forward suggestions for data collection and processing, and the network information technology center conducts technical processing and analysis, and makes data reports and utilization; on the other hand, it uses or purchases data and data reports from a third-party online NIAPE platform, and then analyzes and utilizes the actual situation. In addition, no matter which method is adopted, as the main department of NIAPE and teaching, it must establish its own online NIAPE database. When conditions permit, in synchrony with the construction of online NIAPE, a dedicated person shall be set up to be responsible. For network NIAPE, big data collection models can be carried out according to the following data
dimensions, as shown in Figure 4. But at the same time, it must be pointed out that dimensions are not static. For big data analysis, the more dimensions, the better the nature of the problem can be explored.

Figure 4. Network NIAPE data collection model

5.2. Realize the sharing and intercommunication of network NIAPE resources
With the acquisition of educational resources, the Internet has broken through the limitations of regional colleges and universities, which can be the whole country or the whole world, whether it is graphics or audiovisual. However, it is precisely because of the "big" network resources that also cause uneven resource quality, mixed with false and misleading information, which can easily mislead learners of online education and cause bad educational effects. Therefore, we must use big data technology to analyze and process, by setting keywords to filter, the assembly of official channels, the network NIAPE resources that are officially credible, authoritatively released, and that are truly conducive to learning can be aggregated to realize the sharing and intercommunication of data resources.

5.3. Course and student optimization management under big data analysis
The curriculum and content settings of online NIAPE will leave a mark on all online behaviors of teachers and students in the process of online education, and form a collection of big data. After the data is obtained, through behavioral data analysis, lock the students' attention, high participation, high comment rate, high repost rate, or conversely, lock students who have negative feelings, publish inappropriate remarks, etc., these data will provide important data reference for the optimization of the content of the network NIAPE curriculum. In addition, in student management, through big data analysis, who are active students and those who are inactive will be able to identify people for classification and hierarchical teaching. For the key talents, it is possible to train and establish learning benchmarks, and for the latecomers to focus on counseling, so as to achieve the goal of comprehensively improving the effect of online NIAPE. And this kind of optimization management also needs to test the short-term and long-term teaching effects at the same time to make further optimization decisions.

5.4. Push education content and design education system according to online behavior habits
Internet NIAPE is based on the Internet platform. The characteristics of the Internet age presented by contemporary college students are the basis for carrying out relevant education. In the free space of the network, the students’ internet behaviors are superficial and hidden under the surface, but they always leave various marks. Through the capture of big data, the essence of students’ learning behavior will be fully restored. For example, a big data analysis of reading stay time and type selection for articles on a certain NIAPE platform will be able to obtain statistics on which types of articles students are more interested in, and can do in-depth reading. These data will be crucial to the push of educational
content in the subsequent development of online NIAPE and the design of the overall online NIAPE system. However, it is worth noting that whether it is the push of educational content or the design of the education system, entertainment is the mainstream of today's Internet. Based on the seriousness of NIAPE, it is necessary to strike a balance between the two.

5.5. Improve the evaluation mechanism of constructing network NIAPE

The effect evaluation of online NIAPE should not only be based on traditional attendance rate and test answer scores, but also must be combined with the effect of the network. For example, click rate, response rate, online rate and other network reference data. However, these data can only be used for unilateral or short-term effect considerations, and cannot comprehensively examine the effects of online NIAPE. From the perspective of the predetermined goal of ideological education, students should achieve ideological and moral improvement. How will this be reflected on the Internet? Whether students dare to speak, whether they actively participate in discussions, whether they actively forward and share, these online behaviors will be a good embodiment. Using big data to track such behaviors of students will better consider the long-term effectiveness of online NIAPE, thereby further improving the evaluation mechanism of online NIAPE.

Internet NIAPE is an important educational reform to adapt to the development of the new era, especially the era of Internet big data. In order to truly integrate new media and new technologies and achieve educational results, it is not only necessary to grasp the characteristics and laws of online NIAPE, grasp the performance of the individual characteristics of the educational objects, but also to know how to use the advantages of big data to carry out innovative applications, combining the education of precise objects and the education of "small and beautiful" key groups, and innovate education and teaching from the aspects of curriculum optimization management, precise push and perfect evaluation mechanism.

Acknowledgments

This article is a study of the 2017 Guangdong Provincial Ordinary Colleges and Universities Outstanding Young Innovative Talents Training Program Project "Research on the Characteristics and Laws of Ideological and Political Education Work in Colleges and Universities in the Era of We Media-Based on the Investigation and Analysis of 10 Colleges and Universities in Guangzhou University Town" (Project Number: 2017WQNCX085).

References

[1] Zhang Ce, Zhang Yaoyuan. Big data helps colleges and universities network ideological and political education: value, dilemma and solutions[J]. Educational Theory and Practice, 2020, 40(33): 28-32.
[2] Du Fei. The influence of Internet-derived media on ideological and political education in colleges and universities in the era of big data[J]. Journal of Shanxi Datong University (Social Science Edition), 2020, 34(05): 24-26.
[3] Hu Yunzhe. Analysis on the Network Space of Ideological and Political Education and Its Optimization Path [J]. Journal of Changchun Normal University, 2020, 39(09): 7-9.
[4] Du Sen. The real dilemma of "cloud thinking and politics" education and its solutions[J]. Journal of Bohai University (Philosophy and Social Sciences Edition), 2020, 42(05): 142-145.
[5] Meng Jiannan. Strengthening the focus of online ideological and political education [N]. China Social Sciences Journal, 2020-08-06 (008).