Design and Research on Big Data’s Smart Ideological and Political Classroom in Colleges and Universities in the New Era

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Abstract. This paper introduces the significance of big data intelligent ideological and political education research in Colleges and universities in the new era, summarizes the research status of key technologies of Ideological and political education in Colleges and universities, and puts forward the concept of big data's intelligent ideological and political education classroom in Colleges and universities and key technologies of its model. Combined with the background of "a board of chess" epidemic prevention and control, taking Yunnan Normal University's education informatization and students' Ideological and political education work management as an example, this paper exemplifies "class suspension and keeping teaching" the working mechanism of big data's intelligent ideological and political classroom model in Colleges and universities and part of the front-end interface display are given, which provides reference for the research of big data's ideological and political education work and education information data center "a board of chess in the whole school".

1 Introduction

"Colleges and universities are not only an important garden for educating and training young people, but also an important ideological front for arming young people with the socialist core value system." "We should adhere to moral education as the central link, carry out ideological and political work throughout the whole process of education and teaching, realize the whole process and all-round education, and strive to create a new situation for the development of China's higher education." "We should use new media and new technologies to make work lively, promote the high integration of traditional advantages of Ideological and political work with information technology, and enhance the sense of the times and attraction."

It is pointed out that the whole process of Ideological and political education should be fully utilized in the whole process of Ideological and political education Classroom teaching management methods. We should strengthen the standardized management of all kinds of Ideological and cultural positions on campus, strengthen the management of campus network security, and create a clean and healthy network environment. The outline of moral education in China's ordinary colleges and universities points out that: all the teaching staff have the responsibility of moral education; we should improve the scientific
work system, give full play to the moral education function of all staff, various channels and links, coordinate and form effective moral education force; the Propaganda Department of the Party committee, the student work department, the Teaching Department of the "Two Courses", the academic affairs office and the students The Department and the Youth League Committee are the main functional departments for organizing the implementation of moral education; the Organization Department of the Party committee, the student affairs department and the personnel department of the school are the management departments of the moral education team; other relevant departments of the school should actively participate in and closely cooperate with each other, so as to truly achieve joint management.

It can be seen that the ideological and political theory system of colleges and universities is highly integrated with computer algorithm and big data cloud computing, and combined with the characteristics of University's "teaching, management, service" and other fields, and fully tap its ideological and political connotation, realize the "three complete" education innovation mode in the new era, and build a marginal "virtual ideological and political classroom" system through the university big data ideological and political environment It is of great significance to study the key technologies of smart ideological and political education of big data, which are complementary to the advantages of traditional classroom, promote tangible and intangible, and resonate with online and offline space at the same frequency.

2 Ideological and political classroom of big data smart in Colleges and Universities

We think that the "important ideological position" of colleges and universities is a large ideological and political classroom with sound or silent, or tangible or intangible existence. Through the form of "management, service, education", the content of department business, teaching activities, book carrier, etc., the ideological and political education research is taken as the object, teachers and students "promote each other" and their wisdom is reflected in the party and government management department The joint efforts of the door, ideological and Political Education Institute, student departments and integrated business management departments to carry out ideological and political education research are more reflected in the guidance of Xi Jinping's new era China characteristic socialism thought, "promoting the traditional advantages of Ideological and political work and highly integrated information technology". With the big data technology in the new era as a means, "moral education as the central link, ideological and political work throughout the whole process of education and teaching, to achieve the whole process of education, all-round education", we call this, based on big data, university campus as space, big ideological and political as the purpose, and "big classroom" as the form, to achieve the deep integration of Ideological and political education and information technology in Colleges and universities in the new era Together, the education channel of Ideological and political education rationalization, scientific content resources, personalized learning evaluation and intelligent process management is the ideological and political classroom based on big data.

According to the research background and significance, we locate the foothold of university big data intelligent ideological and political key technology on the background of University integrated classroom of various elements and close contact, and the research is carried out around this large classroom and key technology.
3 Research status of key technology of Ideological and political education in Colleges and Universities

3.1 Domestic research status

3.1.1 Ideological and political education in Colleges and Universities

Literature[1] - [11] has studied the ideological and political education management function of logistics, Daodong Cha[12] found that it is necessary to make use of the intelligent library to carry out moral education without the limitation of time and space, and integrate it into the position of education. Zhao Jingyuan et al.[13] in order to further strengthen the inspection and monitoring, prevent and resist the invasion of bad and vulgar information, optimize the network environment, gradually incorporate moral education into the overall planning of current campus network construction, guide college students to seek advantages and avoid disadvantages, and create a good cultural atmosphere for campus network moral education. Colleges and universities should actively mobilize the Propaganda Department, student affairs department, employment guidance and service center, Youth League Committee, horse school and other departments, and give full play to their joint forces, and integrate ideological and political education and innovation and entrepreneurship education into good campus culture [14].

3.1.2 Ideological and political big data monitoring, early warning, guidance and intervention

Zhang Xiaoguang[15] pointed out that moral education in Colleges and universities should analyze the quantitative information of data in a scientific way, and then make correct and effective educational behavior by combining the moral education principle of teaching students according to their aptitude and educating them according to their aptitude. Zou Tailong et al.[16] believe that it is necessary to strengthen the monitoring and guidance of students' online public opinion, and use hot word retrieval system and sensitive word online detection tools to gain insight into the ideological fluctuation and value change of students' spiritual world from a more micro and deeper level, so as to carry out educational intervention in time. Monitoring various behaviors and other external data can build a big data model of College Students' Ideological and political education, and establish supervision, feedback and early warning mechanism [17].

3.1.3 Ideological and political big data ethics

Literature[18]-[21] thinks that big data technology involves the problem of data privacy and quality balance, and privacy cannot be taken into account to ensure quality [20]. Data privacy, data leakage, data ethics and other issues must be standardized from the system level and the technical level. The technical security guarantee mechanism, ethical and moral protection mechanism and personal privacy protection mechanism should be constructed. The big data security protection planning should be paid attention to, the big data privacy protection plan should be established, and the big data ethics practice guidelines should be formulated to resolve or reduce the wind in the use of big data Risk [21].
3.1.4 MOOC mixed ideological and political teaching resources

Literature\[22\]-[24] affirms the significance of MOOC ideological and political education. MOOC is a free online teaching method for the public, and it is also a new curriculum model in the field of open education in recent years. Many famous universities, such as Yale University, University of Toronto, Princeton University, etc., have published moral education related courses on MOOC platform\[25\]. Meng Huihai\[26\] believes that in the era of education informatization, we should actively introduce and learn from MOOC teaching mode, explore the construction of MOOC platform for moral education courses in Colleges and universities, promote the reform of teaching methods of moral education courses, strengthen the construction of teaching data resources, and comprehensively improve the teaching effect of moral education in Colleges and universities. Colleges and universities should, according to local conditions, carry out a mixed education mode with classroom teaching as the main part, network teaching as the auxiliary and online and offline interaction as the auxiliary mode, so as to stimulate students' subjective initiative and promote the optimization of Ideological and Political Theory Teaching Reform\[27\].

3.1.5 Big data ideological and political education, complete credit system and personalized education

Existing research\[28\] also shows that ideological and political education needs to be integrated with big data, complete credit and personalized education: for example, timely improvement of the theory of Ideological and Political Education under the credit system has important practical significance; the universal implementation of the complete credit system will basically deconstruct the traditional ideological and political education model\[29\]; realize the matching integration of Ideological and political education and complete credit system, In order to cultivate more, better and more suitable for the social needs of high-quality personnel service\[30\]; according to the characteristics of big data quantitative schema, personalization and accurate research and judgment, Li Huaijie and others believe that we should develop the "power generation formula" of Ideological and political education, carry out "accurate portrait" of students, and carry out personalized ideological and Political Education\[31\], the subjective and objective reality of Ideological and political education in the era of big data "Now zero distance docking can develop personalized education programs and enhance the pertinence of Education\[32\]."

3.2 Comparison of research status at home and abroad

Many British schools integrate ideological and political education into their daily social activities. By using suggestive or imperceptible teaching methods, students can gradually accept ideological and political education and understand the content of Ideological and political education, so that they can feel the important role of Ideological and political education in community activities and collective cooperation. The mode of ideological and political education in the United States has been fully integrated with professional courses Political education encourages and guides students to experience campus culture, participate in social services, and participate in public welfare labor after class, so that students can consciously and actively learn and fully understand ideological and political knowledge\[33\]. Foreign scholars rarely report on the research of big data in the ideological and moral education of college students; literature\[34\]-[35] thinks that domestic big data ideological and political research for specific implementation path, method and micro level empirical research, case study is still less, lack of comprehensive support of theory and practice.
Optimize resource integration to form the resultant force of Ideological and political education in Colleges and Universities: we must break the barriers of data platform integration, realize systematic resource sharing, effectively integrate all parts of information, and improve the value and reliability of data. However, the relevant research status shows that: the ideological and political research in Colleges and universities in China only stays at the theoretical level, and there is no comprehensive integration example of specific big data ideological and political education, and there are no systematic studies on wisdom and politics such as taking universities as big data, "hinting or imperceptibly influencing”.

3.3 Research on the application of "learning power" model in Colleges and Universities

Building a learning platform for "learning powerful nation" is a powerful starting point for implementing general secretary Xi Jinping's important instructions on strengthening learning and building a learning nation and promoting the whole Party's great learning. It is an innovative exploration of strengthening theoretical arms and ideological education under the new situation, and is an important measure to promote the deepening of learning and propaganda of China's socialism with Chinese characteristics in the new era. Ye Ting deeply discussed the necessity of "learning power" app to be creatively introduced into the ideological and political classroom teaching in Colleges and universities, combined with the current situation of Ideological and political classroom teaching in Colleges and universities, deeply excavated the contents of each plate, and put forward effective paths of Ideological and political course teaching based on different plates step by step, with a view to enhancing the attraction of Ideological and political teaching in Colleges and universities, enriching teaching content and deepening teaching through the app The connotation of learning.

Wang Shuhua analyzed the communication innovation mode of "learning power" app and its learning effect based on experience theory, and explored the Enlightenment of its success on other ideological and political learning platforms. Fan Wenxia and others also stressed the need to make good use of the "learning power" app. According to the learning requirements of the Party Central Committee for the "learning power" platform and the actual situation of S City, a questionnaire was designed to study the university students' use of "learning power app". Xue Feng thinks that the construction of "situation and policy" course in private colleges and universities uses "learning power app" to strengthen extracurricular learning.

Literature first introduces the advantages and disadvantages of MOOC teaching in Applied Undergraduate Tourism Colleges and universities and the characteristics of "learning power" MOOC, then points out the problems existing in the Application-oriented Undergraduate Tourism Colleges and universities in the Application-oriented Undergraduate Tourism Colleges, and finally puts forward the application methods of "learning power" MOOC in the course teaching of Applied Undergraduate Tourism Colleges, Including the use of "learning power" MOOCS to explain the basic theory, the use of classroom teaching combined with tourism industry practice; the use of "learning power" MOOC preview, the use of classroom teaching to carry out discussion and guidance work; the use of "learning power" MOOC to initially shape the socialist core values, the use of classroom teaching to further consolidate professional ideals. According to the data of "learning power app" and the relevant questionnaire survey, the paper analyzes the problems existing in the process of the development of college student party members, discusses the Countermeasures for improving the quality of the development of college student party members, and puts forward that we should strengthen the construction of the Party branch of primary school students and attach importance to the supervision and
assessment mechanism of college student party members, Make full use of "learning power app" to promote college student party members' active learning and consciously improve their theoretical accomplishment[42].

However, the form and content of Ideological and political education in universities are scattered in the carriers such as campus portal and WeChat official account. There is not a center in form, which is not conducive to the centralization of learning and the cohesion of the socialist core values. On the content, learning situation and so on are separated from the monitoring mechanism and the unified authentication mode, which are scattered with the relevant public opinion of the school network, and so on. "Chess" management can not further guide, monitor and warn.

Figure 1. Key technologies of big data wisdom and politics.
4 Key technologies and model framework of big data smart ideological and political in Colleges and Universities

Combined with the research status of big data intelligent ideological and political research in Colleges and universities, the key technologies, model framework and related module contents of big data intelligent ideological and political in Colleges and universities are designed.

The technologies related to big data wisdom and politics in Colleges and universities are shown in Figure 1 below.

Figure 2. Big data smart ideological and political framework.
Business systems are like scattered "lakes", and data are like "lakes" - we need to excavate "channels", dredge "rivers", connect "lakes", and build "dams" (i.e. data centers) on rivers to centrally manage, allocate and use data resources[43]. We should avoid the trend from information island to data island, and make the data governance project work together to promote an open community in which all the education objects participate, and everyone is the producer of data and the holder of data results[44].

The system model is shown in Figure 3.

![Figure 3. Big data intelligent ideological and political system model in Colleges and Universities.](image)

"Everything is for the teachers and students, for all the teachers and students", the relationship between the various departments of the university is a "community of destiny", which is inseparable from each other. As for the "community of destiny" like colleges and universities, such as the deployment of the data center system in this paper, the university data center is a multi-source heterogeneous, "high cohesion and low coupling" data (database) system The applications in and to be built departments are micro services in the global development, and the container deployment is adaptive according to the actual concurrent usage. In order to avoid the repeated construction of education informatization in Colleges and universities, it is enough to construct the key data of the department according to the functions of each department, and the rest data comes from the interface sharing of other departments in the data center. Logically, the close connection between each department is reflected in the "handshake" of the data interface, realizing the micro service assembly of "I am for everyone, everyone for me", and supporting the wisdom and politics of big data The development of information technology in higher education.

4.1 Intelligent ideological and political module based on "learning to strengthen the country"

Curriculum resources are the basis of the classroom. The ideological and political classroom resources include department learning resources, school ideological and political...
theory learning, and students' Ideological and political education resources. The
information position of the university portal is taken as the basis of the ideological and
political classroom in Colleges and universities, and the credit calculation is carried out
with the "learning power" mode.

Department resources: provided by management, service, college and other departments,
it is the crystallization of the integration of department business and ideological and
political theory, and the promotion of department personnel's business; students’ learning
such resources can not only promote the management and service of business departments
for students, but also improve the ideological and political level of students in specific
fields.

Students' Ideological and political education resources: the works uploaded by students
are also the sublimation of students' learning effect, the best feedback of Ideological and
political learning, and one of the sources of consolidating ideological and political level and
learning ideological and political theory.

Ideological and political education is not a process that can be completed in a semester
or a school year through textbooks, units and other forms. These processes are the starting
point rather than the end point of colleges and universities. As an important part of the
traditional ideological and political education, it is an important part of the ideological and
political wisdom class based on big data. Under the leadership of the Party committee, the
president is responsible for the research of Ideological and political education courses in
Colleges and universities, and is responsible for guiding the exhibition of other forms of
Ideological and political learning Opening, evaluation and other processes.

Figure 4. "Learning power" module based on university big data intelligent ideological
and political system model.

This part is the main content of the ideological and political education instantiation
resources related to the model, which is the monitoring object of the big data model in the
resource framework. In view of the recent problems in ideological education, we
recommend relevant education content to students; for example, during the epidemic period,
the amount and content of learning resources pushed by students who punch in on time or
not on time are different; at the same time, the system automatically connects with the
independent epidemic prevention management system to provide an interface to detect the
situation of students' epidemic situation, and timely match the behavior track of students
with the central and provincial governments. complete the push of learning resources for
the entry and exit of the local epidemic prevention and control management measures. If
the students are found to have records of leaving the country or near the border during the epidemic prevention period, they will be pushed to the relevant national epidemic prevention policies and health knowledge.

4.2 MOOC based ideological and political blended learning under the background of full credits

We must promote the organic combination of Ideological and political education in the network space and the real space, promote the unity of offline education and online education, build a "big environment" of Ideological and political education in the whole field, and promote the optimization and maximization of the effect of Ideological and Political Education [21]. It is proposed that the ideological and political activities, such as teaching development, personalized learning of complete credit system, and ideological and political credit revision, are shown in Figure 5 below.

![Figure 5. Ideological and political blended learning mode.](image)

Before returning to school, students need to learn and complete the recommended contents. For example, during the epidemic period, students should learn the relevant information of epidemic situation push, so that the students can meet the epidemic prevention and control standards physically and keep consistent with the national epidemic prevention and control ideologically. After the students have completed the online learning, the system will push the test papers to specific students at a certain time based on the pushed learning contents. Students can obtain learning points by completing the examination and answering the received contents. For example, during the epidemic period, it can be used as a measure of whether students return to school in batches.

4.3 Recommendation of learning resources

In view of the recent problems in ideological education, we recommend relevant education content to students; for example, during the epidemic period, the amount and content of learning resources pushed by students who punch in on time or not on time are different; at
the same time, the system automatically connects with the independent epidemic prevention management system to provide an interface to detect the situation of students' epidemic situation, and timely match the behavior track of students with the central and provincial governments. Complete the push of learning resources for the entry and exit of the local epidemic prevention and control management measures. If the students are found to have records of leaving the country or near the border during the epidemic prevention period, they will be pushed to the relevant national epidemic prevention policies and health knowledge. As the big data wisdom ideological and political classroom in Colleges and universities is an organic unity with systematicness and no internal contradictions, similarly, when students' online learning and examination content are inconsistent with the specific performance level in real life, the resource push is completed.

4.4 Students' perception of wisdom, ideology and Politics

Just like traditional classroom teachers need to know students first, they build students' perception in the smart classroom based on data center video network monitoring and deep learning. As in traditional classroom naming, smart classroom can finish "automatic roll call", monitor lost contact, and violate simultaneous interpreting by taking students' perception. The library, school song garden, hall of fame, museum, red education site, ideological and political billboard are all intelligent perception spaces. Through the statistics of video data monitored by cameras, the number of visits, stay time and other data, the overall perception and identification of students are completed.

5 Take the first lesson of Yunnan Normal University as an example

As the "learning power" model module of big data ideological and political education, taking Xinguan epidemic prevention and control period as an example, Yunnan Normal University actively responded to the national epidemic prevention and control policies and measures, accurately implemented the "daily Zero report" system, and strictly followed the principle of "responsibility for keeping the soil and being responsible for it", required teachers and students to conduct standardized management in terms of thought and behavior, and unified leadership in the epidemic prevention and control leading group. Under the general tone of "one game of chess in the whole school", led by the personnel department, assisted by the student department, the school hospital, information management office, asset management company and other departments, the perfect campus health reporting system was used to collect the health status of teachers and students, including the comprehensive health data such as residence, registration place, personal and family health status, contact history and activity. From March 27, 2020 to March 31, 2020, a total of 17376200 health report data were collected for management. According to the management process, the school made full use of the epidemic reporting data and online learning to strengthen the ideological guidance, psychological counseling, learning and life guidance, and health dynamic monitoring for students, so as to strengthen the confidence and determination of the majority of students to win the battle of epidemic prevention and control. At the same time, we should implement the principle of "listening, teaching and learning". Education department and school hospital construction resources publicize prevention and control knowledge during the epidemic in the form of mobile terminal and desktop version. Some learning interfaces are as follows: Figure 6.

Based on official account entrance of WeChat, the cloud division information management office, as the entrance of learning resources for the first class of the first class
in the new era, and the health card information during the epidemic period: daily attendance, telephone, accommodation information, emergency contact information, basic information such as student WeChat, etc., and initially build the student information data center. "Learning situation, for the next step through the record of healthy clock out, prevention and control knowledge learning conversion of students' moral education credit management, the school's new student business system and in-depth moral education informatization work promotion and research.

Figure 6. An example of "the first lesson" based on the model of big data intelligent ideological and political system in Colleges and Universities.

6 Summary and work in progress

This paper summarizes the research status of key technologies of Ideological and political education in Colleges and universities, and puts forward the concept and model of big data intelligent ideological and political education classroom in Colleges and universities. Taking education informatization and students' Ideological and political education work management of Yunnan Normal University as examples, the working mechanism of big data intelligent ideological and political classroom model in Colleges and universities is instantiated.

At the same time, ideological and political education often appears in order to promote the ideological and political education of students, it is necessary to find out and solve the contradiction between these variables as soon as possible in class, and to deeply explore the relationship between students' Ideological and political credits and all practice records, so as to promote students' Ideological and political education. Through establishing standards for uncertainty probability of all aspects of students' Ideological and political aspects, ideological and political resources can be pushed and ideological and political monitoring can be further realized Early warning, intervention and guidance. In addition to relying on the key technologies of big data wisdom and fully mining various ideological and political education resources in the university environment, the moral education informatization applied in Colleges and Universities: fully integrate the ideological and political education content into the informatization and application of colleges and universities, make all informatization construction and development around ideological and political moral education, smart campus and other work, further release the big data wisdom ideological and political governance dividend in Colleges and universities It is of higher value and significance to realize the "moistening things silently" of students' influence while carrying
out the comprehensive work of "cultivating morality and cultivating people", which is also the content we are studying.

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