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Research on the Strategies for Improving College Students' Career Adaptability from the Perspective of Big Data

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Abstract: *Big data technology is one of the most iconic technologies of the 21st century. As the frontier position with the most active thinking, the most intensive knowledge and the most adequate application of information technology, colleges and universities are more comprehensively and profoundly affected by big data, which has become an important strategic engine to promote the innovation and development of higher education. College students' vocational ability and adaptability refer to the ability of college students to adapt to the social and professional environment and complete work tasks. This is a professional quality generally recognized by contemporary society and one of the important goals of university education. The content of college students' vocational adaptability is very extensive, including cultural knowledge adaptation, psychological adaptation, ability adaptation, and adaptability effect evaluation. The development of big data technology provides a new guarantee for colleges and universities to do a good job in the pertinence, accuracy, regularity and scientificity of college students' vocational adaptability teaching and education.*

Keywords: *Big data technology, Career Adaptability, College Students*

Big data technology is one of the most iconic technologies of the 21st century. The Action Plan for Promoting the Development of Big Data issued by the State Council proposes that "big data is a collection of data characterized by large capacity, multiple types, fast access speed, and high application value". As the frontier position with the most active thinking, the most intensive knowledge and the most adequate application of information technology, colleges and universities are more comprehensively and profoundly affected by big data, which has become an important strategic engine to promote the innovation and development of higher education. The so-called vocational adaptability refers to whether there is a basic matching relationship between the needs of the occupation and the personality characteristics and abilities of the employed. Career adaptability is an important issue that every college graduate who is ready to enter the workforce and engage in social activities must face. However, for a long time, colleges and universities still follow the traditional experience model to a large extent, there is still a certain distance from the scientific, personalized, refined and intelligent requirements of modern science. Therefore, in the era of big data, using big data technology to achieve data-based and more effective improvement of college students' career adaptability has become an important and urgent proposition of the times.

1. Research status

1.1 Research on the use of big data technology in education

The report of the 20th National Congress of the Communist Party of China (CPC) for the first time proposed to "promote the digitalization of education", which clarified the development direction and action plan of education at the current stage. Huai Jinpeng's keynote speech at the World Digital Education Conference mentioned that "digital transformation is an important carrier and direction of education transformation around the world"[1].Cui Jia believes that the integration of big data and higher education has become an endogenous demand for the development of higher education, and is one of the strategies for the reform and transformation of the higher education system. At present, the transformation of higher education driven by big data mainly lies in two aspects: the transformation of higher education governance and the transformation of higher education model. The former optimizes resource allocation and education decision-making through big data governance, and the latter points to

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the improvement of education and teaching quality with the support of big data[2].

1.2 Research on the career adaptability of college students

Regarding the research on career adaptability, scholars at home and abroad have conducted multi-angle discussions from different disciplines such as education and sociology, and a certain number of research results have been formed. Career adaptability is a core concept in Super's career development theory, i.e., career maturity, which has been continuously updated and revised. It refers to an individual's ability to smoothly adapt to changes and maintain a balance of professional roles as they cope with changes in their professional roles[3].Zeng Yachun and Li Meina believe that the vocational adaptability training path of vocational college graduates highlights "digital technology" and transforms from "one specialty and multiple abilities" to "multiple specialties and multiple abilities"[4].

2. New characteristics and needs of college students in the era of big data

The "Generation Z" college students in the new era are full of energy to explore the unknown, accept new things quickly, have distinct characteristics of the progress of the times, and show a good trend of forging ahead in their thoughts and behaviors, with active thoughts, quick thinking, novel concepts, and a wide range of interests.

2.1 Personalized value pursuit

College students are free to choose diverse social ideologies, cultures, and behaviors, not primarily based on material standards, but rather focus on their own emotional experiences and value realization, and pay attention to personalized interests and hobbies.Some students are keen on "two-dimensional" culture, games, dating, selfies, animation, and digital, and pay attention to the cultivation of personalized expressions of personal interests and hobbies. For example, internet slang is very common in their daily discourse system, as they prefer to "convey meaning through pictures" and "express themselves through emoticons."

2.2 Self-independent conscious judgment

College students born in the 2000s generally have the courage to take action and break free from dependence on their parents, hoping to independently complete various tasks. The post-2000s have grown up in the historical process of becoming wealthy in Chinese society, and their relatively superior family environment and broad horizons have shaped their unique views on self-growth. However,being independent does not mean being truly mature and strong, and the mental health of some individual students still requires our high attention.

2.3 Have the courage to stand in front of people and show it

College students in the new era are eager for a broad growth space and a variety of display platforms, and will take the initiative to seek various resources to support their growth goals. They have more specialties and hobbies, and dare to express yourself on different platforms; They have greater demand for innovation and entrepreneurship education, career planning education, etc., and equal communication and direct expression of demands. Compared with "cramming" preaching, they prefer empathetic and cordial communication, prefer to harvest growth in hands-on practice and peer education, dare to say "no", and dare to put forward better opinions and suggestions on issues related to their vital interests. Looking forward to better material conditions and a rich spiritual life, have strong self-consciousness and persistent adherence to their own preferences.

3. The advantages of big data technology applied to the career adaptability of college students

College students' vocational ability and adaptability refer to the ability of college students to adapt to the social and professional environment and complete work tasks. This is a kind of professional quality that is generally recognized by contemporary society, and one of the important goals of college education. The content of college students' vocational adaptability is very extensive, including cultural knowledge adaptation, psychological adaptation, ability adaptation, and adaptability effect evaluation. The development of big data technology provides a new guarantee for colleges and universities to

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ensure pertinence, accuracy, regularity and scientificity of college students' vocational adaptability teaching and education.

3.1 Big data technology makes the content of universal vocational adaptive education more targeted

In the Internet era, information dissemination is wider and faster, and college students have access to richer information resources and are affected by more complex value streams. The traditional universal education content can neither meet the needs of colleges and universities for wider and faster information dissemination. College students have access to richer information resources and are affected by more complex value streams. The mainstream values education of college students cannot meet the needs of college students' personalized development. Big data is not only a technology, but also a method, if college teachers can use the collection and retrieval function of big data to obtain effective data reflecting the dynamics of students' thoughts from the records of students' messages in forums, Internet chats, and web browsing. Then, through cross-comparison and analysis, it will help to develop more Scientific popular education content and provides targeted guidance. In this way, the selected universal education content will be more diverse and more in line with students' interests.

3.2 Big data technology makes students' personalized guidance more accurate

Through big data technology, college educators can sort out the data traces of individual students in their studies life and work from the smart campus system, so that they can not only understand the development laws and characteristics of college students, but also depict the "portrait" of niche special groups through the integration, processing and analysis of fragmented information, and have a deeper understanding of the individual needs of students. Based on the teacher's understanding of the student's personal situation, the teacher should design personalized education content in the process of education guidance for students with different needs, so as to achieve the accurate push of educational content, which is conducive to the transformation of college education from universal education to personalized education, and make the personalized training of students more accurate. It can be seen that the emergence of big data technology provides the possibility of "teaching students according to their aptitude" and "teaching without class" in college and university education.

3.3 Big data technology makes the analysis and judgment of students' behavior more regular

The behavior trajectory path and development trend of college students have regularity, and big data technology can enable college students to leave a large amount of behavior data on the Internet and information system terminals. Then, teachers use big data technology to build corresponding student behavior analysis models, and conduct offline observation and understanding of students through the Internet, so as to grasp the regularity of student behavior more deeply and accurately, predict students' development trends,establish a dynamic research and judgment mechanism for students' thoughts and behaviors, and determine and guide the education system. Therefore, continuously and effectively observe students' growth and development paths to provide scientific basis for improving their own educational research and judgment capabilities.

3.4 Big data technology makes the evaluation of educational effects more scientific

In the information age, the factors affecting the growth and development of college students are more diversified, so the index system for evaluating education work should also keep pace with the times. Under the traditional qualitative and quantitative modeling and evaluation system, education should use the Internet and big data technology to observe the student development process more comprehensively and objectively, pay attention to and study the relationship between the growth and development path of students and big data, analyze the data and mine the correlation rules, so as to objectively evaluate the growth of students and improve the scientific of educational evaluation. From the perspective of big data, college teachers can establish a big data evaluation system for students' vocational adaptability through big data mining technology and artificial intelligence algorithms, combined with educational standards and requirements, so as to dynamically monitor and objectively evaluate the actual effect of education to make the evaluation more scientific.

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4. Coping strategies for college students' public opinion from the perspective of big data

4.1 Strengthen the awareness of big data and change the concept of education

4.1.1 Strengthen the sensitivity of data of higher education entities.

Educational entities should actively use big data to collect information and data on educational objects, grasp students' areas of concern and behavioral dynamics, intervene and guide in a timely manner to ensure the targeted development of educational work. First of all, College education subjects should break the shackles of traditional educational concepts, actively pay attention to and explore the keywords related to college students' vocational ability, rely on big data technology to obtain scientific and effective data, and then analyze and judge them so as to scientifically carry out teaching innovation. Secondly, college education subjects need to improve their general skills in big data technology through training, so improve their application technology ability and data sensitivity.

4.1.2 Establish an equal view of teachers and students.

In the context of big data, one of the main contradictions in college education is the contradiction between the frustration of the authority of traditional education subjects and the pursuit of open, free and equal exchanges between educational objects. The educational content and methods of education have not strongly attracted the educated, the educated can seek a variety of ways to obtain information and knowledge on the open Internet and other media, and form their own opinions and ideas. Therefore, educators should enhance their own data awareness, understand the needs of the educated, actively change the concept of education, from "authoritative managers" to "service providers". At the same time, teachers innovate education models from in-class teaching content, extracurricular project activities, on-campus face-to-face guidance, off-campus online follow-up services, etc., share educational resources, realize the mutual learning between teachers and students, thereby build a harmonious teacher-student relationship.

4.1.3 We should do a good job in universal education and individual education.

In the era of big data, through data and information analysis, we can discover the regularity and dynamics of students' learning life and other aspects. For the data on the regularity of college students analyzed and mined by the big data system, colleges and universities can combine the laws of education to carry out universal education, guidance and popularization, so that understand and solve student consensus problems. For the regular information with low fitting degree presented by the analysis of the big data system, colleges and universities can adopt professional, individualized guidance and targeted education within a certain field according to the content, so that solve the problem accurately and in a targeted manner. In short, colleges and universities should combine the feedback data resources and education rules to make timely predictions and decisions, conduct popular education on group rules and targeted education with personalized characteristics, and strengthen the effectiveness of college students' vocational adaptability.

4.2 Relying on big data thinking, adjust education ideas

4.2.1 Cluster analysis and universal education.

Universal education is one of the most commonly used forms of education in colleges and universities. Based on the same common problems or common topics, we provide group help and mutual communication through lectures, discussions, etc., thereby triggering group members' self-thinking, self-reflection, self-improvement, and self-correction, thereby achieving the purpose of popularizing education. The goal of cluster analysis is to collect data on the basis of similarity for classification, which provides a scientific basis for the implementation and development of universal education in colleges and universities, and makes the development of universal education more accurate and refined. Cluster analysis calculates and classifies the complex data labels in the training of college students through the big data analysis system, excavates the hidden regular information. The implementation plan of universal education should be made according to the law of education so as to provide accurate and scientific guidance for college students, improve their overall quality and achieve the Development Goal of college education.

4.2.2 Combination of differential analysis and targeted education.

In the college education group, there are not only popular groups that need universal education, but also niche groups that need personalized guidance. Therefore, teachers should understand and grasp the

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individual needs, personalized characteristics and dynamic changes of students in a timely manner, and carry out targeted guidance education. Big data has the characteristics of“Full data”, data is“Big” and “Complete”, big data analysis can be focused on the study of full data information. Through data clustering, we can find the regular information of students, but also through the analysis of differences, we can find the information law and the low degree of fit so as to find the abnormal special situation of college students. Then, the teacher can use the difference analysis data conclusion, the university educator observes the student thought and the behavior abnormal situation, grasps the student’s change and the fluctuation accurately, and carries on the pointed education and the instruction. Improve the accuracy of targeted education.

4.2.3 Combination of dynamic analysis and staged education.

There are phased patterns in the growth and development of college students, such as the characteristics of grade sex and status, seasonal emotional fluctuations, staged learning or concentration of activities, etc. With the changes in the information age, there are still many changes in the laws of college students that we have not paid attention to. We need to understand and master these patterns in a timely manner in order to implement guidance and education more effectively and promote progress. The dynamic analysis function of big data analysis system can realize real-time and timely dynamic analysis, through dynamic analysis, analysis, judgment and early warning of students' dynamic changes. In this way, it is helpful to grasp the dynamic changes of students' thoughts and behaviors in real time, grasp the dynamic changes of students in a certain time or a certain range, and further understand the real situation of students, do a good job of phased early warning and phased education, to ensure that college students improve the ability to adapt to the occupation of the comprehensive and accurate. Then, through the comprehensive consideration of all factors, fully combined with the physical and mental characteristics of the educated, the preparation of accurate and comprehensive evaluation indicators and weight distribution, and on this basis, a scientific evaluation system is established to achieve diversified evaluation[5].

4.3 Build a big data integration platform to do a good job in educating people in the whole process of improving the career adaptability of college students

4.3.1 Colleges and universities can establish and integrate database resources and build a big data integration platform

Collect information and analyze data to strengthen the monitoring of the whole process of student growth in colleges and universities. The first is to build a data and information sharing platform within the university, break the "data barrier", realize the information and data sharing between functional departments in the university, realize the integration of ideological and political education in colleges and universities, and improve work efficiency and work quality; The second is to establish a basic database of students, combined with the file information of students before admission to create a complete basic information collection database of students, and provide more materials for the data collection and analysis of the big data analysis system.

4.3.2 Focusing on student development, we should do a good job in educating students in the whole process of improving their vocational adaptability

Student database resources should be constructed based on the subject, space and time dimensions of education. First, it is student-oriented and stimulates students' endogenous motivation through evaluation and guidance. The second is to clarify the responsibility as the key link, improve the work responsibilities between the various education subjects, and comprehensively improve the quality of talent training. By building a student database resource and working platform with perfect concepts and advanced functions, we can open up the key subjects of student training inside and outside the school, lead the evaluation, and work together to build a traction system for student growth; On the other hand, it integrates multi-dimensional data on students’ study and life to maintain the bottom line, and improve the level of accurate management of students.

4.4 Establish a team of big data talents to improve the function of vocational ability adaptability education and guidance

4.4.1 Optimize the structure of the "compound" team and promote the construction of the big data talent team

Colleges and universities can select and hire professional and technical personnel with excellent

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ideological and political quality in big data, computers, networks and other professional and technical personnel to join the team of college and university teachers. Improve the information screening and processing ability of university teachers, and select key teachers and network information professionals for in-depth integration. It is beneficial to promote mutual learning and exchanges, learn from each other, improve professional quality, and promote the “Compound” construction of big data talents.

4.4.2 Enhance the ability of "scientific" guidance, and improve the information and media literacy of teachers and students in colleges and universities

With the rapid spread of information Internet, information media literacy should become a must-have ability and quality for all citizens. Colleges and universities must pay attention to the cultivation of media literacy ability of teachers and students, use the first and second classrooms to set up media literacy courses, take the core values of socialism as the standard for improving the media literacy,. Build an online education platform and launch a series of media literacy training and education activities to cultivate teachers’ good network ethics and information analysis capabilities. In order to cultivating teachers' good network moral character and information analysis ability, and effectively improving the career adaptability of college students by improving teachers' counseling abilities.

4.4.3 Enhance the thinking and awareness of big data application

Big data provides a technical foundation for the transformation of higher education, so it is necessary to form the thinking and awareness of using big data to think about the development and transformation of education, and to lead the modernization and transformation of higher education with big data thinking. On the one hand, we should use big data to transcend subjective and local experience, and explore scientific decision-making schemes with big data as the underlying logic, so as to better serve the development of education. On the other hand, it is necessary to have the awareness of big data application, not only to pay attention to the important value of big data in education transformation, but also to be able to describe, predict and solve problems based on the correlation provided by big data. In addition, the value of big data should be correctly understood to prevent cognitive bias, the value of big data lies in its effectiveness, therefore, we should respect the facts of the data, emphasize the accuracy of the data, and should not pursue too much "big" and "complete".

4.4.4 Build a big data service team

The big data service team is the core element of the higher education governance and education model transformation system, which determines the professionalism of data governance and model transformation. Most of the existing big data service teams are big data analysts, who are professionals in data collection, analysis, modeling, and management, but their understanding of educational scenarios and education laws is limited, and they are prone to extreme tendencies of "only data" and "for data". In fact, we should be guided by the transformation goal and build a diversified big data service team, which should at least include education and teaching personnel, subject experts, data analysis personnel, educational technicians, teaching designers, etc., so as to ensure the standardization of data processing, the humanization of teaching, and the scientific governance of education.

4.4.5 Complete mechanisms for safeguarding education data

The rapid technological changes of big data require a sound education data guarantee mechanism to match. First, improve the data sharing mechanism. Promote the common sharing of education data by unifying data standards, optimizing data flow specifications, clarifying data sharing and regulatory authority, and establishing data sharing agreements. Second, establish a security guarantee mechanism. Adhere to the principle of putting life first, respect data ethics, and promote technical protection, system construction, and legal and regulatory safeguards for data privacy and disclosure. Thirdly, we should improve the supporting teaching reform mechanism, consider the scientific nature of education, and avoid making the transformation of higher education driven by big data only become a superficial transformation of technology. If big data wants to improve teaching efficiency, it must be combined with curriculum design and learning design to give full play to its educational value.

4.5 Build a systematically promoted technological innovation system to ensure the legality and compliance of vocational adaptability education

4.5.1 Build a people-oriented environmental system

Further emphasizing the core position of people in the digital transformation of higher education,

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the control and utilization of "technology" by "people" is the premise of the integration and mutual promotion of digital technology and higher education, therefore, the design concept of various educational digital products should be safe and reliable as the highest priority. Focusing on and solving the ethical problems brought about by the digital transformation of higher education, applied ethics is applicable to solving the existential dilemmas caused by the development of science and technology, economy and society. Therefore, applied ethics is used as a theoretical support to solve the ethical problems of digital transformation in higher education, and specific problems are analyzed according to the research methodology of description, analysis and standardization.

4.5.2 Build a shared and co-governed data system

On the one hand, it is necessary to further improve the education data resource system, tap the value of data resources, establish overall requirements and standards for educational data resources, data sharing standards, business management standards, technology application standards, etc., standardize business processes as soon as possible, correctly understand the value characteristics of data resources, improve the legislation of data resources system in the field of education, and orderly promote the standardization and legalization of the digital transformation of university management education. On the other hand, further improve the security supervision system, establish a data security supervision mechanism, take the government as the lead, introduce third-party institutions to supervise the security of education data in education departments, universities and enterprises, and focus on reviewing the management process, open content, application scenarios, and legal compliance of education data services and use[6].

5. Conclusions

The existing traditional education model can not meet the needs of multi-dimensional ability. In the new era, talents with innovative thinking, critical thinking, leadership and computational thinking are urgently needed, which is exactly what the current large-scale and standardized talent training model is missing. The individual development needs of students do not match the existing resource conditions. The technical and environmental requirements of adaptive learning are high, and it has not yet been applied on a large scale. At present, the adaptive learning to meet the personalized development of students is mainly based on online autonomous learning. Although there are more online resources for students, most students still focus on school learning and classroom learning, and need to change the spatial thinking of learning.

As big data technology becomes more and more mature, the research on college students' career adaptability will be more in-depth. In the future, college teachers should further use big data technology to effectively combine professional knowledge training with vocational adaptability education, use multidisciplinary perspectives to analyze the improvement mechanism of college students' vocational adaptability. Scientific selection factors and mathematical models are used to continuously update student training courses to achieve scientific management guidance for students' self-improvement. This will effectively solve the practical problems of college students adapting to society faster and better.

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