

Research on the Comprehensive Reform and Innovative Development of Postgraduate Education in Colleges and Universities Under the Background of Big Data

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Abstract: Emphasizing the development and application of big educational data technology in the field of postgraduate education and teaching is an effective way to achieve the goal of modernization of postgraduate education in my country. This paper aims at the reform of graduate course education and teaching, from the aspects of teaching concepts, teaching organization and guidance, teaching methods, teaching management and evaluation, etc., focusing on promoting the reform of postgraduate training mechanism, innovation of training mode, and construction of quality assurance system is the key to comprehensively deepening reform, emphasizing coordination and overall advancement are important considerations for comprehensively deepening reforms, and improving the construction of institutional systems is the fundamental guarantee for comprehensively deepening reforms.

Keywords: comprehensive reform, innovative development, postgraduate education, big data

1. INTRODUCTION

In November 2014, at the National Postgraduate Education Quality Work Conference and the 31st meeting of the Academic Degrees Committee of the State Council, Comrade Liu Yandong delivered an important speech and clearly stated that "the comprehensive reform of postgraduate education has been fully launched. From the overall and strategic perspective, Seize the opportunity, highlight the key points, take multiple measures, firmly grasp the quality core, further deepen the reform, promote the rule of law, and greatly improve the quality of postgraduate education."

As the direct carrier of the national graduate education reform and an important part of the comprehensive reform of colleges and universities, the comprehensive reform of postgraduate education in colleges and universities is directly related to the development of postgraduate education in colleges and universities and the improvement of the overall quality, reflecting the implementation of the national "four comprehensive" strategic deployment and the comprehensive reform of higher education in colleges and universities. The political awareness and overall awareness of colleges and universities reflect the will, development goals, reform ideas and innovation paths of colleges and universities to implement the comprehensive reform of national postgraduate education. The comprehensive reform of education has very important theoretical and practical value.

Although the author does not fully agree with Victor and Kenneth's view that people will "give up the desire for causality and instead focus on correlation" in the era of big data, practitioners of higher education in the big data environment keep up with the pace of the times and take the initiative. Changing the concept of education and teaching and keeping pace with the times will be the "new normal" faced by educators in the era of big data. For the teaching of management postgraduate courses, the core of course teaching is to cultivate students' innovative thinking and practical ability in management. The teaching process should highlight the research in the field of management or provide background knowledge and methods for the research in the field of management. The social science nature of most

courses determines that in the era of big data, course teaching especially needs to guide students to establish an eclectic thinking concept, which requires educators to establish big data thinking, pay attention to the cultivation and quality of digital media, information technology and other skills promote. From the perspective of its basic semantics, reform refers to changing the old and unreasonable parts of things into a new state that can adapt to the objective situation.

From the perspective of sociology, the object of reform is the production relationship, which is to make partial or fundamental adjustments to the original production relationship, so that the production relationship and productivity are in a more harmonious state, thereby promoting the benign development of society. A series of reform practices at home and abroad in ancient and modern times have shown that reform is a powerful driving force for promoting social development in different countries, different societies, and different times. It is a major measure to promote economic and social development.

2. THE PROPOSED METHODOLOGY

2.1 Teaching mode of postgraduate education in the environment of big data

Pay attention to the three key elements of postgraduate training model innovation, postgraduate training mechanism reform, and postgraduate education quality assurance system construction. The three are manifested in postgraduate education such as integration of postgraduate education resources, enthusiasm and initiative incentives for postgraduate education-related subjects, and postgraduate education system construction. The horizontal connection of the elements presents a complete institutional system from the main body structure, the definition of responsibilities and powers to the mutual relationship. Teachers can also designate a group to be responsible for explaining certain chapters in the classroom, and the group members need to work together and determine the main lecturer. Before class lectures, postgraduate students should make full use of network resources to learn and digest the lectures. If you have any questions, you can discuss with the teacher and group

members in advance. With the assistance of the class teacher, the group members will complete the preparatory work before the course teaching. .

Establish the idea of differentiated and personalized education. We must pay attention to the cultivation of postgraduates' independent thinking and problem-solving ability, which is the key to the cultivation of postgraduates' innovative ability, which requires postgraduate tutors to establish the idea of differentiated and personalized education. The "National Medium- and Long-term Education Reform and Development Plan (2010-2020)" promulgated by our country in 2010 also pointed out that we should pay attention to the different characteristics and individual differences of students and develop the superior potential of each student. To deepen the comprehensive reform of postgraduate education, we must highlight the problem orientation, that is, the goal of comprehensive reform is to solve some outstanding problems in my country's postgraduate education, to promote the scientific and orderly development of postgraduate education.

So, what are the outstanding problems in postgraduate education in my country at present? When the Graduate Education Management Department of the Ministry of Education was drafting and formulating the "Opinions on Deepening the Reform of Postgraduate Education", it organized a special class to carry out special research on the main problems of postgraduate education. Extensive research has concluded three essential issues in the development of postgraduate education: applying big data technology to education and teaching management is an effective path to accelerate the modernization of my country's higher education. To realize the modernization of higher education, all colleges and universities have invested funds in the construction of graduate teaching management systems in recent years, and the developed system has greatly facilitated the daily teaching management of graduate students. However, most teaching management systems have a single function, which is far from satisfying the effective use of big educational data.

In the classroom, the teacher organizes and guides the postgraduates to conduct full discussions on difficult and doubtful issues. Finally, the teacher judges the discussion process and summarizes the discussion results. Teachers can also assign a group to be responsible for explaining certain chapters in the classroom. Team members need to divide and cooperate and determine the speaker. Before class explaining, graduate students should make full use of network resources to learn and digest the content. If you have any questions, you can contact the teacher and the group members discuss in advance, and with the assistance of the teacher in charge, the group members complete the preparatory work before the course teaching. For a long time, the development of postgraduate education in my country has been dominated by scale expansion, ignoring connotative development; emphasizing the incremental development of postgraduate education, ignoring stock reform; emphasizing the construction of "hardware" conditions and ignoring the construction of "software" systems, resulting in a single subject of graduate education resource allocation , Insufficient allocation of postgraduate education resources, low benefits and low efficiency of postgraduate education, thus affecting a series of problems such as unbalanced postgraduate education structure and low quality of postgraduate education, it is urgent to adapt to economic construction and social development by changing the development mode of postgraduate education This is the realistic requirement of the

current comprehensive reform of postgraduate education in our country.

2.2 Emphasis on coordination and overall advancement are important considerations for comprehensively deepening reform.

The process-based reform mode refers to the establishment and management of postgraduate education in colleges and universities, that is, postgraduate enrollment, postgraduate training, degree conferring, postgraduate management, etc., to promote the comprehensive reform of postgraduate education through the reform of postgraduate education, to realize the reform of postgraduate education in colleges and universities development goals. The key to this model is to take all management links of graduate education in universities as the reform objects, so it is called a process reform model. To avoid repeated investment and waste, it is possible to expand its functions based on the existing postgraduate teaching management system platform, so that the system can gradually collect and analyze various data in the postgraduate education management process and based on the collection The effect of data analysis on teaching and learning of graduate courses. Applying big data technology to education and teaching management is an effective way to accelerate the modernization of my country's higher education.

To realize the modernization of higher education, all colleges and universities have invested funds in the construction of graduate teaching management systems in recent years, and the developed system has greatly facilitated the daily teaching management of graduate students. However, most teaching management systems have a single function, which is far from satisfying the effective use of big educational data. To avoid repeated investment and waste, it is possible to expand its functions based on the existing postgraduate teaching management system platform, so that the system can gradually collect and analyze various data in the postgraduate education management process. From a perspective There is a logical sequence relationship among the three basic issues of the comprehensive reform of postgraduate education, that is, to restructure the relevant subjects of postgraduate education through the innovation of the postgraduate training model, then to define the responsibilities and rights of different subjects through the construction of the postgraduate education quality assurance system, and finally to postgraduate education. The reform of the training mechanism establishes a management mechanism for the effective operation of postgraduate education, thus forming a complete chain of postgraduate education.

In terms of the core content of the reform, systemic system reform and mechanism innovation system design will be carried out around the three groups of graduate students, graduate tutors, and graduate managers, focusing on stimulating the enthusiasm of the three groups. The key to comprehensive reform is to reform "production relations", that is, to reform the existing system and mechanism around the different value orientations and interest demands of different subjects, and to form a reform force. From the perspective of the inherent connotation of the reform, this reform model can better reflect the essence and essence of the reform. In the context of the era of big data, the massive data generated during the postgraduate education and teaching process not only provides new technologies for quantitative research on education and teaching methods, but also provides new guarantees for the modernization of my country's higher education technically.

Departments such as graduate schools, finance offices, personnel offices, state-owned assets offices, and academic affairs offices in colleges and universities should strengthen cooperation and ensure that the postgraduate training scholarships proposed by the reform of the postgraduate training mechanism can be fully implemented in accordance with the requirements of the central and provincial local governments. Ensure that the special construction funds for postgraduate education can increase to provide important financial guarantees for the comprehensive reform of postgraduate education. In terms of performance evaluation and other aspects, the evaluation and appointment system for doctoral supervisors will be cancelled, and the delayed retirement system for doctoral supervisors will be cancelled.

3. CONCLUSION

Aiming at the reform of postgraduate course education and teaching, through the systematic investigation of the transformation of postgraduate education and teaching mode under the environment of big data, the researchers think that : big data technology provides an opportunity of the times for realizing the modernization of my country's postgraduate education. Higher education management departments and higher education practitioners should seize this opportunity, based on my country's national conditions and the actual situation of postgraduate education, establish an open and inclusive big data thinking and innovative Personalized educational thinking, reforming traditional teaching methods, to improve the teaching quality of postgraduate education in my country. This is an effective path to realize the modernization goal of postgraduate education in our country.

4. REFERENCES

- [1] Liang Chuanjie. Comprehensive reform model of postgraduate education in colleges and universities: review and reconstruction [J]. 2021(2019-11):1-7.
- [2] Liu Junqi. The Ninth Conference of Directors of C9 University Graduate School Cultivation Office and the National Symposium on Comprehensive Reform of Doctorate Education Held in Hefei [J]. Degrees and Graduate Education, 2018(1):1.DOI:CNKI:SUN :XWYY.0.2018-01-007.
- [3] Xie Xulei. Analysis of the comprehensive reform path of postgraduate education in colleges and universities under the background of double first-class construction [J]. Journal of Higher Education, 2019(20):3.DOI:CNKI:SUN:GJXK.0.2019-20-009.
- [4] Sheng Mingke, Cai Zhenhua. Analysis on the Comprehensive Reform Path of Graduate Education Facing "Double First-Class" Construction——Taking Public Management as an Example [J]. Graduate Education Research, 2017.DOI:CNKI:SUN:JIAO.0.2017-02 -012.
- [5] Li Yuquan, Fu Detuan. Accelerating the development of professional master's degree in education and promoting the reform of postgraduate education in colleges and universities [J]. Journal of Changzhou Institute of Technology (Social Science Edition), 2005.
- [6] Ma Shengli, Shen Qi, Chang Shuqi, etc. Innovating the classroom teaching mode and deepening the comprehensive reform of professional degree graduate education——Exploration of the "3G+6+2" professional degree graduate classroom teaching mode of Renmin University of China [J]. China Postgraduate, 2016.
- [7] Zhang Wei, Cheng Ying. Construction and Application of Postgraduate Education Management System Based on Big Data Technology——Taking a Comprehensive University in the West as an Example [J]. 2021(2018-4):139-140.
- [8] Gu Lina, Liu Jiaji, Cai Jihong. Construction and Practice of Postgraduate Tutor Selection System——Tianjin University's Reform Based on Academic Autonomy [J]. Degrees and Graduate Education, 2018(6):6.DOI:10.16750/j.adge.2018.06 .006.
- [9] Pu Xuemei, Xie Jun, Wang Zhimeng, et al. Reform and Exploration of Cross-Disciplinary Innovation Ability Cultivation for Chemical Graduate Students [C]//Chinese Chemical Society National Chemical Graduate Education Seminar. Chinese Chemical Society, 2014.
- [10] Liang Chuanjie, Yang Danhui. Deepening the Comprehensive Reform of Postgraduate Education in Colleges and Universities: Cognition, Goals and Paths [J]. Journal of Three Gorges University: Humanities and Social Sciences Edition, 2018, 40(3):5.DOI:CNKI:SUN:HBSB. 0.2018-03-020.
- [11] Zhao Xiaohong. Exploration of Education Reform and Innovation for Postgraduates in Food Science and Engineering [J]. Education and Teaching Forum, 2019, 000(019):133-134.
- [12] Chang Xin. Research on the Current Situation of Postgraduate Thought and Educational Countermeasures in Colleges and Universities [D]. Shenyang Agricultural University, 2016.
- [13] Jia Min, Guo Qing, Zhao Honglin, et al. Based on the concept of CDIO, the teaching reform of postgraduates majoring in telecommunications [C]//Empirical research on improving the quality of education in colleges and universities (volume 1). 2016.
- [14] Wang Sa. Research on the reform and practice path of postgraduate education in colleges and universities in the new era [J]. 2020.