A Study on the Quality Improvement of Graduate Student Employment under Blockchain Thinking

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Abstract: The employment of graduate students has become a hot issue of social concern, and blockchain has become an important tool used in various industries. This paper applies blockchain thinking to the employment of graduate students, using the decentralization and distributed bookkeeping functions of blockchain thinking to organically integrate the factors of society, schools, enterprises and graduate students themselves, so as to adjust the training of graduate students at any time and improve the quality of employment.

1. Introduction

In order to thoroughly implement General Secretary Xi Jinping's important discourse on education and the spirit of the National Education Conference, the State Council issued the General Plan for Deepening Education Evaluation Reform in the New Era in 2020, which determines the orientation of school running and points out the direction of "what to train, how to train and for whom to train". The number of postgraduates enrolled in 2020 reaches 3.41 million, an increase of 17.59% compared with 2019. The cultivation and employment of postgraduates is directly related to the effectiveness of cultivating high-level talents in a university, and the employment of postgraduates is one of the important indicators that can directly reflect the quality of cultivation, which is increasingly concerned by universities and society.

2. Current Status and Problems of Research Related to Graduate Student Employment Quality

After nearly 30 years of postgraduate expansion, the number of postgraduate graduates has been increasing every year, and the employment situation has become more and more severe. At present, the research on postgraduate employment is mainly divided into the following three categories: one is to study the factors affecting postgraduate employment through the method of survey and statistics, Yue Changjun et al. showed that the overall employment implementation rate of China's college graduates in 2019 is not high, there are obvious regional differences and industry differences, the type of school and the location of the school are important factors affecting the employment status, in addition, the starting salary of the industry and the satisfaction of the employment unit are also In addition, the starting salary of industry and the satisfaction of employment unit are also one of the factors affecting the employment status of graduate students [1]; the results of Chen Hongjie et al. illustrated that the supervisor and discipline category have a significant influence on the satisfaction of graduate student cultivation, and the cultivation quality directly affects the employment status [2]; the results of Li Min et al. showed that the construction of graduate student cultivation system and employment guidance system in colleges and universities has a direct impact on the employment of graduate students [3]; Zhao Yue, Song Han and Liu Hailong respectively studied the influence of gender, employment intention, career aggressiveness, and other factors on the employment of female master students [4-6]; Chen Lifen et al. studied the differences of comparing gender, degree type, and session of graduate students in the nature of employment unit, medical institution level, and job position [7]; Liu Qing analyzed the employment of graduate students in terms of vocational education counseling classes, self-understanding, practice opportunities, and employment outlook [8]. The second category is to improve employment

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quality through unilateral influencing factors; Li Fan Xianzuo analyzed the employment relationship between enterprises and students through evolutionary game model [9], and the main factors affecting graduate students' employment focused on graduate students' employment outlook, education, professional knowledge, and the real needs of enterprises; Liu Dongbo and other studies gave the methods to improve the employment quality of professional degree graduate students from three aspects: society, schools and graduate students themselves [10]. The third category is to put forward the influencing factors affecting employment quality by establishing the employment quality evaluation index system, such as Duan Yamin et al [11] established the influencing factors through research, screening and expert evaluation scoring, and gave the feasibility and guidance of evaluation index; Peng Jiang et al [12] studied the study of learning achievement orientation as a means to construct the employment quality of graduate students by using literature analysis method, expert interview method and hierarchical analysis method evaluation system; Zhao Jingjing et al [13] analyzed the current situation of research on the evaluation system of postgraduate employment quality, constructed an evaluation system, and studied the strategy of postgraduate employment quality improvement from four aspects: government, universities, postgraduates, and employers.

Through the inquiry, we found that there are more studies on the analysis of the influencing factors of graduate employment and fewer studies on the improvement of graduate employment quality through the influencing factors, especially on the synergistic effect of the influencing factors. The existing research has the following two shortcomings: firstly, it overly relies on the method of survey and statistics to study the factors influencing graduate students' employment, but proposes fewer corresponding solutions through these influencing factors; secondly, the research is not comprehensive enough, and some scholars only put forward the promotion method of collaborative education from a single aspect, but still lacks systematic research.

3. Analysis of the Fit between Blockchain Thinking and Graduate Student Employment Quality Improvement Research

3.1 Definition of Blockchain Thinking and Its Application in Education

3.1.1 What is Blockchain

Blockchain is a shared ledger and database composed of data in a block chain in a chronological and cryptographic manner, using the underlying technology and infrastructure that encrypts, timestamps, records the entire process, and maintains the data collectively.

3.1.2 Blockchain in Education

There are more research results on blockchain and postgraduate employment in China, and there are 10286 research results for “blockchain” and 2714 research results for “postgraduate employment” in Zhiwang. For example, Gao Weifeng [14] argues in his study “Effectiveness, Participation and Trust Reconstruction: Ideological and Political Education Thinking Innovation in the Information Age Based on Blockchain Principle” that the deep thinking embedded in blockchain technology can promote social change, especially empowering the current In [15], “The Application Value of Blockchain Technology in Education”, Liu Jia analyzed the impact of blockchain technology on the education field from the perspective of education field, so as to provide a reference for the effective use of blockchain technology in the education field; Ding Baogen [16] analyzed the reality of the change of “blockchain+higher education”, the problems and suggestions of “blockchain+higher education”, and the problems of “blockchain+higher education” from multiple perspectives in “The Reality, Problems and Suggestions of the Change of “Blockchain+Higher Education”. In this paper, we analyze the reality of “blockchain+higher education”, the problems of “blockchain+higher education” from multiple perspectives, and the corresponding solutions, in order to provide references for the subsequent theoretical and practical research on higher education resource sharing, higher education process design and university management system development based on blockchain technology.

3.2 The Fit between Blockchain Thinking and Graduate Student Employment Quality Improvement Research

With the development of the Internet, big data and cloud computing technologies have had a profound impact on graduate student employment, improving the means and efficiency of graduate student employment, making the traditional employment work model based on the concept of “lecture” and “duck-fill” challenged, and block Blockchain technology has pushed the employment of graduate students to a new level.

First of all, the “decentralized” thinking of blockchain technology has already influenced the concept of fair and open employment of graduate students. In the blockchain mesh structure, the “nodes” of distributed bookkeeping are relatively independent individuals, and no one can absolutely control other individuals. Each individual maintains and backs up the records, and the whole “chain” structure will not be affected by the data loss or abnormality of one individual. Obviously, this is a kind of database technology with “fairness and justice”, and the “decentralization” function of blockchain technology is potentially influencing the employment concept of graduate students who love the network. Secondly, “timestamp” technology has already contributed to the sublimation of “sharing concept” and “honesty and trustworthiness concept” of graduate students. It is based on cryptographic algorithm and has unchangeable and shareable qualities, which can be used as an important certificate for postgraduates' participation in social practice activities, job interviews and skills training, and also as a time proof for the evaluation of grades in career guidance practice courses. Finally, the traceability technology has stored any information about postgraduate students' participation in learning, research, practice and evaluation in the process of cultivation in the form of fixed block data in the “block node”, which is irrevocable, cannot be tampered with and prevents forgery, which ensures the authenticity of information shared on the block chain.

3.2.1 The Impact of Blockchain Technology on Graduate Education and Training

At present, most universities in China still adopt the traditional talent cultivation model, in which the first year of graduate students is based on classroom teaching and the second and third years are based on graduation design for scientific research, which is a kind of common cultivation with similar curriculum settings and no special career planning and career guidance departments for graduate students, without considering individual differences. The era of big data has brought new opportunities for promoting educational equity, independent learning of students and sharing of learning resources. Big data technology provides technical conditions for effective integration of various data resources in the process of postgraduate education. Graduate students use data mining technology to realize analysis and research of online learning, simulation experiments and intelligent evaluation using artificial intelligence technology. Blockchain technology is further upgraded on the basis of big data, and the “decentralization” function can realize fair access to resources, “timestamp” can record individual learning dynamics in a personalized way, and “traceability The “decentralization” function can realize fair access to resources, “timestamp” can personalize the learning dynamics of individuals, “traceability” can realize reverse reflection on the learning process, and provide targeted guidance according to different individual characteristics, etc.

3.2.2 The Impact of Blockchain Technology on the Career Guidance Curriculum System in Universities

At present, the career guidance courses offered by colleges and universities stay in large classes, indoctrination teaching, standardized curriculum, ignoring individual differences, especially for special groups of students, such as students with employment difficulties, students with family economic difficulties, and students with psychological problems lack targeted career guidance. Most of the teachers in the classes are counselors, and there is a lack of professional career guidance teachers.

In the era of big data, education and teaching methods, teaching resources and teaching means

have undergone significant changes. Book-based teaching materials have been transformed into online teaching resources, and online teaching and video learning have increased the speed of knowledge dissemination and convenience of access. Teachers can conduct one-to-one and one-to-many targeted and personalized teaching, and students can choose teachers who meet their needs according to their personal characteristics and share their learning experiences, results and experiences at any time. Using big data and cloud classroom teaching, teacher-student interaction is efficient and convenient.

3.3 The Impact of Blockchain Technology on the University Faculty

3.3.1 Mentor Team

The era of big data has created great challenges to the traditional connotation and form of teaching. Online classes, simulation experiments and shared resources on the Internet platform have become new ways for graduate students to acquire knowledge, and instructors are no longer the only way for students to acquire knowledge. If instructors do not keep pace with the times and change their traditional education methods, it is not only difficult to stimulate students' interest in learning, but also leads to disconnected work. Big data technology forces tutors to have the information literacy of acquiring and sharing resources, to make full use of information technology to innovate teaching materials, and to change from indoctrination training to ability training and quality improvement. Blockchain technology brings more disruptive changes on the basis of big data technology, and the “consensus mechanism” puts forward higher requirements on teachers' teaching level and methods. The application of “decentralization” to the actual teaching process can help improve teachers' accurate and scientific decision-making power in teaching and research. In the background of big data, lifelong learning of instructors is inevitable, and it is the inevitable trend of the development of universities.

3.3.2 Tutor Team

With the rapid development of Internet and big data technology, graduate students can acquire knowledge and resources through multiple channels and methods, and are the main recipients of information resources, while using “microblog”, “weibo” and other “integrated media “The postgraduates can obtain knowledge and resources through multiple channels and methods, and are the main recipients of information resources. The learning experience, thinking ability and growth trajectory of graduate students determine that they no longer fully accept the information passed to them by counselors, but often make their own judgment and understanding through the independent and open big data technology. The fair, open and independent access to resources is very suitable for the “decentralized” thinking of blockchain, which poses a serious challenge to the counselors. With the continuous development of blockchain technology, counselors should keep pace with the times in the face of changes in graduate students, the way of education, means of work, knowledge and literacy, change the traditional ideological and political education work philosophy and work mode, and expand the work path and form.

3.4 The Impact of Blockchain Technology on Corporate Recruitment

Traditional corporate recruitment is mainly on-site job fairs and special presentations, where companies communicate with interviewees face-to-face and view resumes. This traditional recruitment method can only be selected by the materials provided by the interviewer on their own initiative and the on-site interview judgment, which results in low recruitment efficiency and high turnover rate after joining. The application of blockchain technology in enterprise recruitment has greatly improved the efficiency of recruitment and job matching. The “high transparency” of blockchain technology can help enterprises obtain data sources of effective candidates, and the “traceability” function can help enterprises search and know all-round data information about candidates, gain three-dimensional knowledge of job seekers, and achieve accurate recruitment. The “traceability” function can help companies search and know all-round data information about candidates, gain three-dimensional knowledge of job seekers, achieve precise recruitment, and

increase the job matching.

4. The Path of Promoting the Quality Improvement Process of Graduate Student Employment under Blockchain Thinking

First, to establish a scientific evaluation system of tutors and strive to improve the level of tutor training. As the first responsible person of postgraduates in school, the tutor gives full play to the role of teaching by example, and undertakes the cultivation of professional knowledge and practical ability of postgraduates, and is the primary responsible person of ideological and political education. However, at present, there are deficiencies in the selection of tutors, the construction of teacher moral and teacher style, and the performance of tutors in moral education in ordinary universities. Some tutors are even busy with their personal business and neglect the care and cultivation of graduate students. Therefore, based on the function of “timestamp” in blockchain thinking, the role of mentors in the process of postgraduate training is recorded, and the function of “traceability” is used to check whether the mentors have implemented the “Guideline of the Ministry of Education on the Treatment of Teachers' Moral and Ethical Behavior in Colleges and Universities” and the “Code of Conduct for Graduate Student Mentors”. The “traceability” function is used to check whether the mentor has implemented the spirit of the “Guidelines of the Ministry of Education on the Treatment of Teachers' Moral and Ethical Behavior in Colleges and Universities”, “Code of Conduct for Mentors” and other related documents. Through the blockchain technology, the mentor selection and recruitment mechanism is strict, and the assessment of the performance of the mentors' moral and moral education is strengthened; relying on the Teacher Teaching Development Center, a “full staff, full cycle and all-round” mentor training system combining pre-service training for newly hired mentors, annual training for in-service mentors and daily study and exchange is built, and the assessment of the training process and training effect is strengthened. To strengthen the assessment of the training process and the training effect, and to improve the mentoring ability of mentors.

Secondly, based on blockchain thinking, we cultivate the comprehensive ability of graduate students in the whole process. By using blockchain big data information management, the sample data of graduate students' study and work are truly recorded in the whole process from the entrance to graduation, and the analysis and integration of graduate students' re-learning, scientific research, social interaction and individual traits, as well as the evaluation and recognition by tutors and counselors, are recorded in a pictorial manner, analyzed and evaluated by blockchain big data technology, and the expected development and We will use blockchain big data technology to analyze and evaluate, and give the expected development and targeted correction opinions.

Thirdly, we play the role of the main position of counselors' thought leadership. Counselors play the role of the main position of ideological and political education in the daily management of graduate students. In the microsystem, counselors are the team with the longest contact time and deepest understanding with postgraduates, and they play a key role in the formation of postgraduates' career planning and employment outlook. In order to enhance the effect of education, firstly, the professional development of counselors should be incorporated into the counselor training system to improve the level of counselors' professionalism and encourage counselors to obtain professional qualifications such as career coach and life planner; secondly, the postgraduate career guidance course should be carried out and counselors should teach career planning comprehensively through the systematic curriculum system; thirdly, the postgraduate career planning competition should be actively carried out; finally, active attention should be paid to postgraduate students' emotional , psychological needs, guiding graduate students to identify normal psychological conflicts in the process of growth, and taking special measures to enhance their psychological stress release skills.

The use of blockchain technology to record the growth process of postgraduates reveals that the synergy for improving the quality of postgraduate employment has not yet been formed. In order to create a positive relationship among the subjects related to postgraduate employment, emphasis should be placed on grasping the collaborative nurturing relationship between tutors and counselors,

the two classrooms, and the university and enterprises as the key to improving the quality of postgraduate employment.

First, the synergistic nurturing effect of mentors and counselors promotes the integration of academic, scientific research and ideological education and management.

Mentors and counselors act as the specific implementation group of collaborative nurturing. Mentors and counselors guide and lead students in their respective fields through scientific research, ideological education, career planning and other aspects of professional knowledge, skills, and social practice skills to become all-round composite talents. Mentors and counselors collaborate to educate people and penetrate the ideological and political education of graduate students into all aspects of cultivation management, forming a good situation of collaborative education. Therefore, colleges and universities should strengthen the top-level design of collaborative education between tutors and counselors, establish a perfect collaborative education mechanism, promote the two teams of tutors and counselors in the cultivation of postgraduates, and truly realize the construction of a scientific and reasonable, student-approved, efficient and feasible collaborative education mechanism.

Second, focus on the “first classroom” and “second classroom” collaborative education.

Traditionally, the “first classroom” refers to the teaching activities of professional teachers in a relatively fixed place, according to the requirements of the syllabus, preparing teaching programs according to the teaching materials, and teaching in the classroom, mainly based on teachers' lectures and students' passive acceptance, which is the learning of theoretical knowledge and skills. With the application of blockchain technology in education, online cloud classroom, virtual simulation experiments, human-computer interaction and other teaching methods are the necessary teaching skills for graduate instructors. The “second classroom” is student-oriented, rich in content and diverse in form, and is an effective carrier to exercise students' comprehensive quality. Students apply their theoretical knowledge in practice with autonomy and spontaneity.

The “first classroom” and the “second classroom” are important means to educate students' comprehensive quality, and the two classrooms rely on each other to integrate knowledge into practice and comprehend knowledge in practice. Therefore, the first classroom and the second classroom should be connected well, and a new employment system covering both inside and outside the classroom should be established to build a three-wide education mechanism and form a synergistic education effect.

Thirdly, to improve the employment service system with the guidance of collaborative education through school-enterprise cooperation

It is a systematic project to guide the employment of postgraduates by linking the forces of multiple parties, and it is necessary to integrate the resources within the university to turn the advantages of resources into the advantages of cultivation, and also to make full use of the resources outside the university to promote the healthy development of postgraduates.

(1) To cooperate with schools and enterprises to collaboratively educate people and improve the quality of postgraduate employment, it is necessary to implement the General Plan for Deepening the Reform of Education Evaluation in the New Era, to strengthen the collaborative education of schools and enterprises, to coordinate the relationship among the government, universities and enterprises, to effectively integrate and make full use of the resources among them, to promote the combination of postgraduate training and scientific research projects and the synergy between them and the needs of society, and to promote postgraduate training and employment education services in universities .

(2) To adhere to the orientation of collaborative education at the university and college levels, and to form a new situation of whole-person education and whole-process education. A school-level employment guidance working group represented by school leaders is established to formulate a targeted employment guidance program by combining the characteristics of school disciplines and social needs, and use the school employment center for specific implementation. The secondary colleges set up the employment guidance working group represented by the college leaders, professor committee, class teachers and counselors, relying on the school employment guidance in

the school, integrating the school, college and alumni resources, and carrying out the employment guidance work of graduate students in all aspects.

(3) Actively create an atmosphere of collaborative education for the whole society and form a joint effect of education. Graduate student instructors should make full use of the research platform and project cooperation resources to guide graduate students to high-quality employment; counselors should actively guide students to establish a correct employment concept and enhance the consciousness of serving the country, society and the grassroots in students' daily life by using Civic Affairs class and career guidance class; class teachers should make use of their professional background and personal experience to infect students in a subtle way and enhance students to learn professional knowledge and master skills; and Career guidance teachers combine psychological, professional, social practice and employment education to precisely match the employment needs of enterprises and deliver talents precisely; personnel from other departments should give active help from campus culture, social service and resource guarantee, etc., so as to finally form a good collaborative education mechanism and high-quality employment service system.

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