

Exploration of "432+Employment" Mode of Promoting High Quality and Full Employment of Graduates in Higher Vocational Automation Major

Yongli Zhu*, Liu Yang

Department of Intelligent manufacturing and transportation, Chongqing Engineering Vocational and Technical College, Chongqing, China

**Corresponding Author.*

Abstract: High-quality employment is the driving force and foundation for promoting high-quality development in China, and it is one of the key indicators to measure the level of professional construction and teaching quality. This paper focuses on the important part of the employment of automation graduates in higher vocational colleges, and uses SWOT analysis to analyze the problems and challenges faced by the high-quality employment of automation graduates from the three levels of individual, specialty and industry. Based on the theory of cognitive information processing, this paper puts forward the idea of student-centered and the high-quality employment of automation graduates.

Keywords: Automation Professional Training; High-quality Employment; Cognitive Information Processing Theory; Employment Guidance Work Reform

1. Introduction

With the high-quality development of China's economy, in the past 20 years, vocational education has gone through the process of "promoting economic and social development and labor employment" to "employment-oriented", and now "improving quality, adaptability and attractiveness". The development of high quality has pushed vocational education to a new level of quality, adaptability and attractiveness.

High-quality development has pushed vocational education to a new level. Vigorously develop vocational education and training, effectively improve the skills and income level of workers, expand the middle-income group by achieving fuller and higher-

quality employment, and release the potential of domestic demand. High-quality employment is one of the key indicators of the level of professional construction and teaching quality [1].

In 2019, the mechatronics technology specialty group of Chongqing Engineering Vocational and Technical College (hereinafter referred to as: specialty group) was selected as the first-class high-level specialty group in China. In 2022, the electromechanical specialty affiliated to the professional group was approved as the third batch of "mass entrepreneurship and innovation" demonstration construction projects in colleges and universities in the new era.

In this context, the electromechanical professional group, according to the requirements of the creation, give full play to the role of demonstration and leading role and the role of the battlefield, in order to implement the decision-making and deployment of the high-quality employment to provide a strong organizational guarantee. This paper intends to explore the specific working mode of "building + employment" under the background of employment priority strategy, namely "432 + employment" mode, to promote the path of high-quality employment of graduates of higher vocational automation, to better meet the goals of higher vocational colleges and universities to serve the development of the real economy and to achieve the goal of fuller and higher quality employment of graduates, as well as to promote the development of higher vocational colleges and universities. It can better meet the goals of serving the development of real economy and achieving fuller and higher quality employment for graduates, and effectively solve the problems of difficult

employment and good employment for graduates of higher vocational colleges and universities.

2. Definition of the Concept and Study on the Path of Building for Employment

2.1 Definition of the Concept of "High-Quality Employment"

Different scholars have different interpretations of the concept of "high-quality employment". Liu Xiao believes that high quality employment refers to the fact that workers earn enough income to maintain a basic life and pursue higher level of life needs [2]. Dong Zhiqiang argues that high-quality employment means obtaining dignified and decent labor [3]; Miao Renliang believes that high-quality employment means providing adequate and fair labor positions that meet market demand and satisfy the needs of workers to realize their own value [4]; Yang Haiping believes that high-quality employment means increasing the participation and satisfaction of workers in economic development [5]; Wang Xiufang believes that high-quality employment is to improve the status and role of workers in economic and social development [6]; Tang Xia believes that high-quality employment means that workers can find jobs that they like and that pay reasonable wages [7]; Wu Guichun believes that high-quality employment means that workers have more choices at work and can achieve higher income and social status [8].

To sum up, high-quality employment, at the level of social development, means that it can respond to and support the needs of major socio-economic development strategies and serve the modernization of the country; at the level of industry and enterprise development, it is effective in alleviating the needs of regional industrial development; and at the level of personal development, it is able to achieve the goals of high personal salaries, high social status and large space for development, and so on.

2.2 Research on the Path of Building

The construction work is the basis for us to do a good job in various work. It is an important force in the construction of in the new era. It shoulders the overall task of political education and three-round education for college students.

There are fewer studies on the construction work to promote the employment of higher vocational graduates. Zhu Yilong proposed to help college students' employment with the help of student branches, playing the leading role of government staffs, optimizing the political building work mode, etc [9]; Zhang Mingzhen proposed to take the construction work as the handhold, the two teams as the focus, and building a platform as the key countermeasures to promote the employment work [10]. Yang Bo proposes to build a win-win model for the construction work and employment work by constructing an information sharing platform for building and employment work, comprehensively promoting the combination of building education and employment counselling, and formulating an institutional guarantee for the simultaneous development of the construction and employment work [11]. It can be seen that the current scholars have made rich research results on the path of the construction work for employment, and the countermeasures and suggestions for the construction building work to promote the employment of college students, etc., but there are few researches mentioning the "high-quality employment", and few researches focusing on the employment of higher vocational graduates of automation majors.

3. Problems and Challenges Facing High Quality Employment

In this paper, a questionnaire survey was conducted on 100 graduates and 20 junior interns of three automation majors in the electromechanical integration technology specialty group of Chongqing Engineering Vocational and Technical College, and more than 40 student employment enterprises were visited to conduct in-depth interviews with enterprise technical management personnel.

The phenomenon of recruitment difficulties in the manufacturing industry is highlighted, on the one hand, a large number of graduates into the company "can not be retained, can not go down"[12], and on the other hand, a large number of graduates are "unable to stay, can not go down"[13], On the other hand, the transformation and upgrading of industrial structure has created a strong demand for experienced technical and skilled talents at the grassroots level, and there is a structural gap in

employment. This paper combines the characteristics of automation students in higher vocational colleges and universities, analyses the problems and challenges of high-quality employment, under the guidance of the "432" construction work method, expanding ideas, innovative initiatives, the construction work and employment work with the planning, deployment, and advancement, to eliminate the employment of the "obstruction" phenomenon, and promote the employment of graduates. The "432" construction work method guides the expansion of ideas and innovative initiatives, the construction work and employment work with the planning, deployment and promotion, breaking the employment "obstacles" phenomenon, and promoting automation graduates high quality employment. Through SWOT analysis, the many problems and challenges faced by high-quality employment of automation graduates in higher vocational education are analyzed at three levels: personal, professional and industrial.

3.1 Individual Level: Close Ties to the Enterprise but Inaccurate Self-Orientation

Vocational education is closely connected with economic and social development". Facing the new needs of economic and social development, the professional group has continuously deepened reform and innovation, enhanced the adaptability of vocational education, and taken the road of connotative development, and has cooperated with Huawei, Chongqing Sailix, Chongqing Weichai and other large-scale manufacturing enterprises to open various types of school-enterprise co-operation classes such as special order classes, apprenticeship classes, technician classes and other types of classes that are closely connected with the actual production of enterprises, and the employment rate of graduates of the professional group is 98.99%, and the satisfaction of enterprises with employing graduates is 99.3%. Reached 99.3%. However, from the analysis of the research results, clear self-knowledge is the basis of high-quality employment, only the good employment environment provided by the outside is not enough. Firstly, in the process of employment, automation students are inaccurate in grasping their own character, professional skills and development direction,

lack of understanding of the needs of enterprises and positions, and lack of self-knowledge and career planning. Second, mechatronics technology, industrial robotics technology, intelligent control technology and other three automation specialities are national "double high" professional group specialities, the school from hardware to software, are tilted to these three specialities, resulting in a strong sense of "superiority" of the students' employment, graduates compare each other's wages and salaries. Graduates compare each other's salaries and have unrealistic expectations of employment. Thirdly, some students do not combine their own situation, blindly follow the trend of specialized college entrance examination, miss the best employment window, resulting in a large demand for jobs, students are not strong willingness to choose an awkward situation.

3.2 Professional Level: Professional Settings fit the Current Social and Economic Development Needs but do not Match the Precise Needs of Enterprises

While serving the needs of the country, the professional group takes the initiative to face the regional economic and social development, and sets up courses oriented to the distinct industrial demand, so that the supply and demand of talents are compatible and matched. Since the construction of "Double High", the professional group has been serving the economic construction and development of Chengdu-Chongqing region, effectively supplementing the regional economic and social talent demand gap. Research results show that automation graduates in private enterprises accounted for 52.2% of employment, 72.96% of manufacturing enterprises, as shown in Figure 1, 2; for a variety of enterprises, talent demand presents diversification, personalization and integration and other characteristics. Automation class professional settings and talent training positioning is difficult to fine-tune the customization according to enterprise demand, professional personnel training objectives and enterprise job requirements there are differences in the training of graduates can not be well adapted to changes in the development of enterprises. In short, the professional training objectives and enterprise talent demand mismatch, graduates and enterprise

recruitment job requirements do not match, professional settings and enterprise "supply and demand" match is not accurate, automation graduates face the main problems in the employment process.

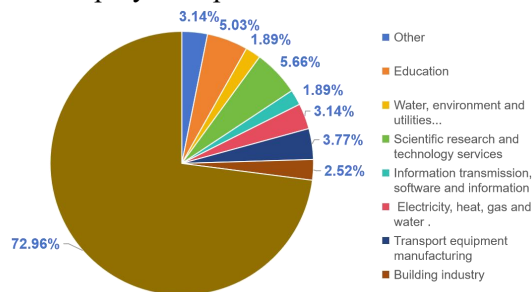


Figure 1. The research Enterprise belongs to the Industry in the National Economy

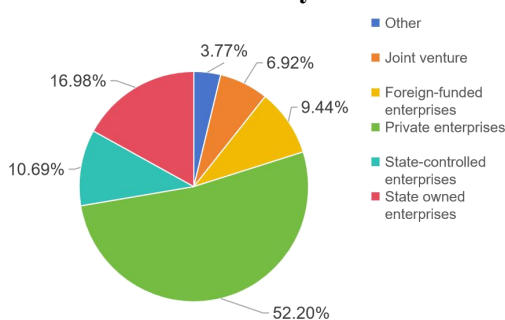


Figure 2. Types of Enterprises in which Graduates are Employed

3.3 Industrial Level: Structural Adjustment of Industries and Employment Conflicts

As China's manufacturing industry is developing and transforming in the direction of digitalization, informatization and intelligence. China's manufacturing industry is constantly adjusting and optimizing from the industry structure, industrial structure, product structure and so on. The demand of employers for high-level technical and skilled talents continues to be greater than the supply of schools. Fresh graduates of higher vocational education have low level of technical skills, less space for choosing a career, and increasing difficulty in employment. The proportion of technicians, senior technicians, senior titles and other high-end talents has been low for a long time, while the demand rate of enterprises for such talents is increasing year by year, and the shortage of high-level technical and skilled talents is obvious, which forms a "bottleneck" restricting the growth of enterprises and limiting the upgrading of industry transformation and the structural problem of employment has been

highlighted. The depth of integration between schools and enterprises is insufficient, and the teaching content is lagging behind the development of industry; the three-year academic system is relatively short, and students lack high-quality employment-related work experience, professional knowledge and skills; at present, employment guidance is arranged for graduating class counselors to provide guidance. The counselors are usually young teachers who are not majoring in this field, with little experience of working in enterprises, no understanding of industrial development, and insufficient experience in employment guidance.

4. Theoretical Reflection and Model Exploration of High-Quality Employment for Automation Majors

In order to achieve high-quality employment of automation majors, this paper takes cognitive information processing theory as the basis and introduces two core models, the information processing pyramid and the CASVE cycle, to show the theoretical framework and the specific operation process of career choice and employment.

4.1 The Information Processing Pyramid and the CASVE Cycle Model

The information processing pyramid model is a "three-level, four-area" (Figure 3) model that describes the whole process of choosing a person's entire career. First, at the bottom of the pyramid is the knowledge domain layer, which includes self-knowledge and career knowledge, such as knowledge of career values, one's own interests, professional skills, etc., as well as knowledge of the job position and the specialty of one's study. Secondly, the decision-making domain layer in the middle of the pyramid is responsible for analyzing and deciding on problems, which mainly consists of "Communication, Analysis, Synthesis, Evaluation, and Implementation", or CASVE cyclic model (Figure 4), which is a description of the whole process of the decision-maker's exchange of information, thinking about the problem, identifying the solution, evaluating the process, and implementing the solution, with the emphasis on of identifying needs, analyzing problems, forming options, evaluating options, and implementing strategies. Finally, at the top of the pyramid is

the executive management layer, which is the command center of the operational process, and is responsible for the final thinking and decision-making through self-awareness and self-monitoring in conjunction with external information. Of the above three domain layers, the knowledge domain layer is the foundation, the decision-making domain layer is the core, and the executive management layer is the monitoring and regulating of the above two domain layers.

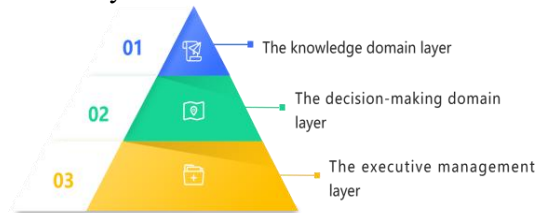


Figure 3. Information Processing Pyramid

The information processing pyramid model is a "three-level, four-area" (Figure 3) model that describes the whole process of choosing a person's entire career. First, at the bottom of the pyramid is the knowledge domain layer, which includes self-knowledge and career knowledge, such as knowledge of career values, one's own interests, professional skills, etc., as well as knowledge of the job position and the specialty of one's study. Secondly, the decision-making domain layer in the middle of the pyramid is responsible for analyzing and deciding on problems, which mainly consists of "Communication, Analysis, Synthesis, Evaluation, and Implementation", or CASVE cyclic model (Figure 4), which is a description of the whole process of the decision-maker's exchange of information, thinking about the problem, identifying the solution, evaluating the process, and implementing the solution, with the emphasis on identifying needs, analyzing problems, forming options, evaluating options, and implementing strategies. Finally, at the top of the pyramid is the executive management level, which is the command center of the operational process, and is responsible for the final thinking and decision-making through self-awareness and self-monitoring in conjunction with external information. Of the above three domain layers, the knowledge domain layer is the foundation, the decision-making domain layer is the core, and the executive management layer is the monitoring and regulating of the above two

domain layers.

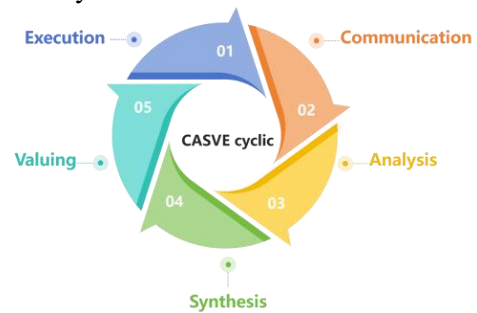


Figure 4. CASVE cyclic model

4.2 Construction of the "432 + Employment" Model

How to get high-quality employment is a problem that needs to be solved urgently for the high-quality development of the profession, which can not be separated from the efficient operation of the employment work mode. This also means that more scientific and reasonable adjustments and reforms need to be made in terms of students' personal cognition, professional settings, talent cultivation orientation, and employment guidance. We integrate the cognitive information processing theory into the whole process of employment of automation graduates, seize the key links of CASVE cyclic model, find the breakthroughs from three levels of knowledge, decision-making, and implementation management, and explore the new employment mode of automation graduates by helping students clarify their self-knowledge, improving the judgement of the employment status, and innovating the employment service, so as to promote graduates' high-quality and full employment. The following are the three aspects of the employment service.

5. "432+Employment" Mode Practice

The professional group strengthens the integration and coordination of political building and employment. Through ideological guidance, building platforms, and skill assistance, it actively promotes the construction of political building and career education, visits to enterprises, and school-enterprise cooperation. It cultivates the feelings of "morality and ingenuity, intelligence and far-reaching," undertakes the mission of building a strong country, and actively integrates personal development into the development of the country's undertakings to achieve higher quality and full employment.

5.1 Grasping the "four" Aspects, Casting the Soul and Navigating the Typical Tree

Firstly, we grasp the education of government staffs and strengthen the ideological leadership. The branch will take the constitution and rules as compulsory learning content, take the study of the spirit of the series of speeches and the "Learning Power" APP as an important way with Chinese characteristics in the new era, and adopt the forms of leading by the secretary of the branch, studying by the government staffs of the branch, joint study of the political building and joint study and learning by combining with professionalism, etc., so as to effectively enhance the awareness of political and theoretical level, and constantly strengthen the ideological leadership and promote the quality development of education and teaching work. Theoretical level, and constantly enhance the ideological leadership, to promote the high-quality development of education and teaching work. The second is to grasp the management of the government staffs to effectively promote the work. Has developed more than 10 systems for the government staffs to study, talk, contact teachers and students, and strictly implement the "three meetings and one lesson" and the theme of the activities and other organizational life system, to carry out all kinds of theoretical learning 18 times classes a year. Thirdly, the supervision of the government staffs is carried out to maintain the purity of the team. Through in-depth study of the content of the files. The government staffs are clear about the basic principles of interparty supervision, supervision procedures, means and methods. Fourth, grasp the innovation and publicity, set up a typical cohesion. Built a national virtual simulation training base digital Civics Museum. Relying on the national virtual simulation training base, build a digital building Civic and Political Museum, to create a highly interactive, highly participatory, highly experiential new education positions and teachers and students to enhance the professionalism of the position. Through the organization of preaching reports, seminars and exchanges, widely publicized typical, give full play to the role of demonstration. The branch has selected a number of advanced models such as Comrade Yi Jun, Comrade Liu Ming, Comrade You Qingshan and Comrade XuHao.

5.2 Focusing on "Three" Leaders Expanding Resources for Development

Firstly, building leads the construction of high-level professional groups. Teachers of the branch participate in the declaration and construction of major projects above the municipal level such as teaching materials, high-quality online open courses, teaching resource library, etc., and maintain the leading role; the professional group takes the lead in revising the national vocational education mechatronics technology professional "Introduction" and "Teaching Standards", participates in revising the intelligent electromechanical technology, etc., and participates in the revision of the "Teaching Standards" of 10 national vocational education professions, and participates in the development of the Intelligent Line Integration and Application Occupational Skills Participated in the revision of 10 national vocational education "teaching standards" such as intelligent electromechanical technology, participated in the development of "intelligent line integration and application of vocational skills" and other 6 "1 + X" vocational skills level standards; led the development of 2 international standards for mechatronics and other professions, 14 international standards for curricula, of which 3 of the "Chinese + vocational skills" curricula standards have been accredited by Chongqing Municipal Institute of Educational Evaluation. The professional group has set up a number of technical research and development teams to carry out research on key core technologies with enterprises: Yan Gongxing's team has plowed into the key technology of hybrid-drive intelligent prosthetic limbs, breaking the technological monopoly of foreign countries, and it is the first tertiary institution in Chongqing to win the second prize for scientific and technological progress. Chen Shuang's team provides technical transformation of copper tube finishing process and equipment digital upgrading services for Chongqing Longyu Precision Copper Tube Co. The professional group cooperated with China Railway 16th Bureau to carry out the joint testing of electromechanical and mechanical testing of "Jiangjin Jumping Stirrup" suburban rail line, which ensured the timely opening of the line; the professional group has undertaken

30 scientific research projects at Chongqing municipal level and above, and has been authorized to make 72 invention patents. The projects have completed the milestones and results on schedule, and set up a benchmark role in the teacher team.

Secondly, the constitution leads the development of high-level team. The branch establishes every Wednesday as "Theory and Innovation Learning Day", discusses the content of political and theoretical learning with the team development, and divides into three working groups according to the specialties of scientific research, temporary major projects, teaching, etc., so as to integrate and promote the theoretical learning of the with the work of scientific research, professional construction and teaching. To create a school-enterprise mixed teaching staff, innovative practice "dual four steps four platforms four initiatives", that is, school-enterprise dual, in accordance with the "young teachers, backbone teachers, professional leaders, leading talents of the teacher's growth of the four stages, relying on the Teacher Development Center, Chongqing Municipal University Engineering Center, relying on the four platforms of Teacher Development Center, Chongqing University Engineering Center, "Dual Teacher" Master Teacher Workshop and Vocational Education Group, the comprehensive ability of teachers is improved through the four initiatives of teacher moral development, improvement of teaching design ability, improvement of international exchange and cooperation ability, and improvement of engineering literacy and practical ability. The establishment of automation national vocational education "dual-teacher" teacher training base to lead the vocational education "dual-teacher" teacher training, built the first batch of national vocational education innovation team 1, set up a Chongqing municipal vocational education innovation team, forming a synergistic development pattern of the teachers at national, provincial and school levels. It has formed a collaborative development pattern of national, provincial and school-level teachers. Thirdly, building leads the cultivation of high-quality talents. The professional group creates "four double, three integration, two through "talent training mode, one enterprise one case, teaching in layers and grades, and accurately serves the

talent demand of enterprises. Huawei Technician", "Weichai Craftsman" and other order classes have been set up, and the employment rate of graduates of the professional group has remained above 98.99% for many years, and 1,418 graduates have been employed by Fortune 500, China's Fortune 500 and leading enterprises in the industry, accounting for 34.28% of the graduates of the professional group. The number of graduates employed in the world's top 500 companies and China's top 500 companies and leading enterprises in the industry is 1,418, accounting for 34.28% of the graduates of the professional group. Taking the student competition and political education as the main body, the company has created the "dual tutor" system, introduced the tutor on the basis of the professional tutor, and formed the new normal of cultivation of higher vocational talents with the dual leadership of the government staffs and teachers, and the penetration of the whole link and the whole process, so as to achieve the purpose of high-quality talent cultivation.

5.3 Playing "Two" Roles to Optimize Services and Improve Quality

One is to play the role of the organization's fighting fortress. Pay attention to the role of the organization in strengthening political guidance, standardizing organizational life, uniting and uniting teachers and students, and constantly enhancing the organizational strength, cohesion and appeal of the branch through regular student discussions, construction of teachers' ethics, and assistance to students. Strengthen the political theory study of government staffs, and improve the political consciousness of the government staffs; grasp the construction of the branch team, and guarantee that the role of the fighting fortress is effectively played: do a good job in the education and training of the branch committee's work duties, strengthen the responsibilities of the government staffs in all aspects of their work, and guarantee that the government staffs take up their responsibilities. Each comrade forms a model of team contact to ensure the timely implementation of all theoretical learning effects and the implementation of the heart-to-heart talk system. Between comrades, regular heart-to-heart talks are conducted to innovate working

methods to ensure that political building promotes the active promotion of business; organize and carry out the theme day activities with distinct themes to ensure that the construction work is grounded.

The second is to play the vanguard and exemplary role of government staffs. Comrades branch government staffs strive to be teaching experts, curriculum leaders, declare the construction of teaching and research projects, and effectively play the vanguard and exemplary role of government staffs. In recent years, branch teachers have built one of the first national vocational education innovation teams, one of the national curriculum political team, one of the first prize team of the national teachers' teaching ability competition, one of the Huangdanian style teachers' team in municipal colleges and universities, one of the national curriculum political demonstration courses, three of the municipal excellent courses, and six of the school-enterprise co-construction education bases. Students won 20 awards in the national skills competition, including 11 first prizes; he participated in the China International 'Internet +' Innovation and Entrepreneurship Competition and won one gold medal. Three Silver Awards; KUKA China's 'new craftsman star' plan 2 excellent students. Students participate in 15 regional enterprise Technological transformation projects; the quality of personnel training has been highly recognized by enterprises, and more than 30 % of students have entered the work of enterprises, large enterprises or super large enterprises.

Acknowledgments

2023 Scientific and Technological Research Project of Chongqing Municipal Education Commission Research on the Path of "building + Employment" Model to Promote High-Quality Employment of Higher Vocational Graduates in the Context of Employment Priority Strategy (KJQN202303403).

2023 Scientific and Technological Research Project of Chongqing Engineering Vocational and Technical College Research on the high-quality employment path of higher vocational graduates (KJB202329).

References

[1] Ministry of Education. Notice of the

Management Measures for the Selection of Projects of High-level Higher Vocational Schools and Professional Construction Programmes with Chinese Characteristics (for Trial Implementation) (Teach Vocational Cheng [2019] No.8)

- [2] Liu Xiao, Tong Xiao Chen. The Mechanism and Path of Enhancement of Vocational Education for High-Quality and Full Employment. *Modern Education Management*, 2024, (02): 85-93.
- [3] Dong Zhiqiang. Employment Problems on the New Journey: From Short-term to Long-term. *Social Science Front*, 2023, (12):52-60.
- [4] Miao Renliang, Pan Xiquan. The internal mechanism and practical path of promoting common prosperity through high-quality development of vocational education. *Education and Career*, 2024, (06): 90-97.
- [5] Yang Hai-Ping, Fu Bo-Ping, Pang Li-Jiao, et al. Practical application of online TBL teaching in dental undergraduate teaching. *China Higher Medical Education*, 2020, (10): 5+85.
- [6] Wang Xufang, Gao Binkun, Jiang Chunlei, Chen Peng, Bi Hongbo. Research on the cultivation mode of improving innovation ability of postgraduate students under the background of new engineering. *China Modern Education Equipment*, 2020, (03): 38-39+42.
- [7] Tang Xia, Liu Yong. Exploration of high quality employment strategy for college graduates. *Innovation and Entrepreneurship Theory Research and Practice*, 2018, 1(12): 69-70.
- [8] Wu Guichun. On the basis and method of observation experiment design in primary school science teaching. *Talent*, 2019, (25): 53.
- [9] Zhu Yilong. Exploration of the path of building for employment in colleges and universities in the Internet era. *Journal of Hubei Open Vocational College*, 2023, 36(11): 133-135.
- [10] Zhang Mingzhen, Ma Bei. Exploration on the mode of promoting graduates' high quality employment in colleges and universities. *Employment and Security*, 2021, (15): 78-79.
- [11] Yang Bo, Xia Li, Wang Weiwei. Research on the Influencing Factors of

- College Students' Employment Motivation -Based on the Perspective of Positive Psychology. *Western Journal*, 2019, (24): 65-67.
- [12] Li Jie. "The blueprint for promoting employment in the 14th Five-Year Plan is drawn. *People's Daily Overseas Edition*, 2021-09-01(003).
- [13] Notice of the General Office of the Ministry of Education on Carrying out the Demonstration and Quality Creation Work of the constitution in Colleges and Universities in the New Era. (Letter of the Office of Educational Thinking and Politics [2018] No. 23).