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Research on the Employment Situation of Graduates from Application-oriented Undergraduate Universities-A Case Study of Automation Major in Jilin Engineering Normal University

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Abstract: *The employment trend is derived by analyzing the employment situation of graduates from applied undergraduate universities, which helps the majors to update the training program and optimize the course settings, so as to better serve the society. In this study, we analyze the employment information of the employed students of Jilin Engineering Normal University, taking the automation major as an example, from 2016 to 2020. Combined with the major's initiatives to improve the quality and employment rate of undergraduate training, the effectiveness of the major's reform is visually evaluated through the analysis of employment information. The research results provide references for related majors.*

Keywords: *Employment, automation major, Application-oriented undergraduate universities, Undergraduate employment analysis*

1. Introduction

Since the establishment of Jilin Engineering Normal University (JLENU) in 1979, the automation major has been enrolling students, and it is the only major in the northeast provinces and Inner Mongolia of China to train vocational teachers for electrical technology and application and other related majors [1]. This major aims to train students to master the basic theory of automatic control systems and automation control technology, with a solid theoretical foundation, skilled electrical equipment installation and commissioning skills, basic control system design capabilities. For the electrical control technology, electrical operation and control and other related technical fields to transport engaged in technology development, product service and production management of senior technical skills [2].

The employment direction of the graduates of this major mainly includes electrical product development, installation, commissioning and operation of electrical equipment, development of control electronic products, installation, commissioning and maintenance of control electronic products, supervision of electrical engineering, implementation of control system integration, installation, operation and maintenance of power distribution system, sales of electrical and control electronic products and other related industries such as technicians, salesmen, engineers, supervisors, etc.

The employment trend is derived by analyzing the employment situation of graduates from applied undergraduate universities, which helps the majors to update the training program and optimize the course settings, so as to better serve the society [3, 4]. In this study, we analyze the employment information of the employed students of Jilin Engineering Normal University, taking the automation major as an example, from 2016 to 2020.

2. Measures to Improve the Quality of Undergraduate Training and Employment Rate

In recent years, the automation major has continued to promote comprehensive reform, and carried

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out theoretical research and comprehensive reform practice in four directions, namely, excellent vocational teacher training mode, theoretical-practical integrated course system, modern information methods, teaching methods and teaching quality assurance system, and the specific initiatives are as follows.

2.1. Set up an Experimental Class of Excellent Vocational Education Teachers and Implement the "Three Tutors" and "Double Thesis" System

The three tutors are composed of tutors from majors, vocational universities and enterprises to strengthen the connection and communication between the majors, vocational universities and enterprises.

2.2. Optimize the Training Program Regularly Based on the Foundation

Based on the university' s characteristics, the national standard of teaching quality of automation class and other requirements, adapt to the demand situation of vocational colleges and universities, adhere to collaborative education and regularly adjust the talent training program. The training program was adjusted three times in 2013, 2016 and 2018, which has achieved good results and adapted to the concept of excellent vocational education teacher construction [5, 6].

2.3. Strengthen the Management of Learning Process and Strict Thesis Writing

Strengthen the main responsibility of teachers in classroom teaching, reform the assessment and evaluation methods, strengthen the management of learning process, and emphasize the assessment of pre-study before class, usual homework, extra-curricular reading, extra-curricular discussion and mid-term examination links. Strictly control the graduation exit and pay attention to the quality of graduation thesis. All aspects of the graduation thesis are regulated, the process supervision is strengthened, and academic irregularities are seriously dealt with to effectively improve students' writing and research abilities.

3. Results and Discussion3. 2016-2020 Employment Statistics Analysis of Automation Graduates

A total of 418 automation majors graduated in 2016-2020, with an initial employment rate of 82%. As shown in Figure 1, 77 of them graduated in 2016, 75 in 2017, 82 in 2018, 75 in 2019 and 109 in 2020. Due to the impact of the epidemic, as shown in Figure 2, the unemployed graduates in the past five years are mainly concentrated in 2020.

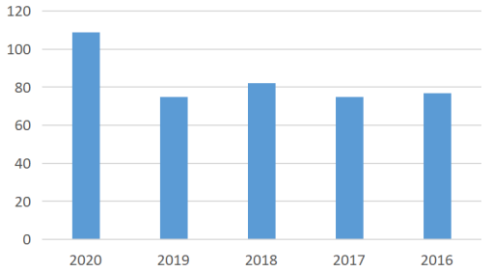

Figure 1: Automation Graduation Statistics 2016-2020

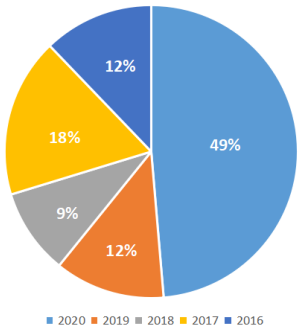

Figure 2: Year-by-year statistics of unemployed students

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According to the data in the past five years (2016-2020), the initial employment rate of undergraduates in this major is roughly stable at about 80%, and the employment direction is 25% for education industry, 9% for Energy production and supply industry, 17% for manufacturing industry, 5% for architectural industry, and 18% for others, as shown in figure 3. From the viewpoint of employment rate and employment destination, the quality of graduates cultivated by this major is relatively excellent, which is basically consistent with our training objectives.

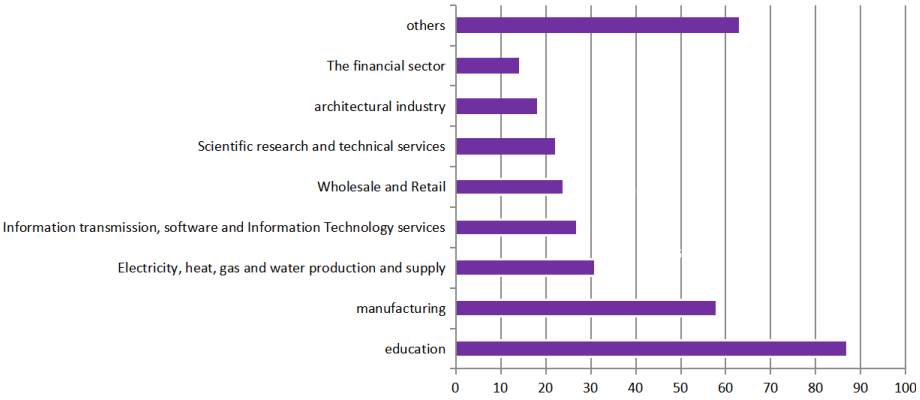

Figure 3: 2016-2020 employment industry direction statistics

As shown in Figure 4, graduates' employment is mainly distributed in Jilin province, accounting for 59%, Beijing, accounting for 3%, Liaoning province, and Shanghai, accounting for 3%. This shows that staying in Jilin province is the first choice of graduates.

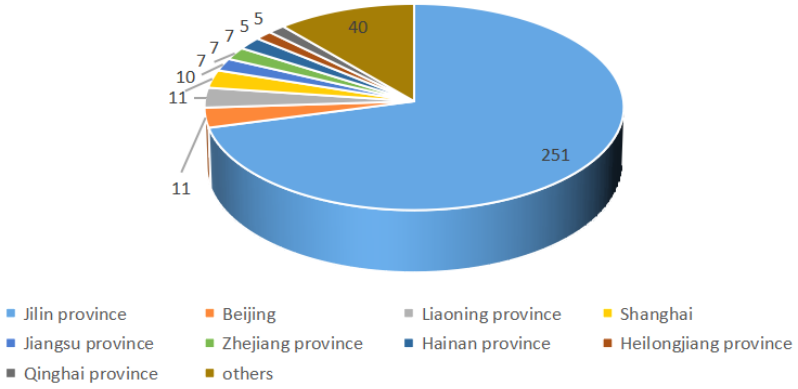

Figure 4: Graduate employment distribution by province

As shown in Figure 5, the demand for high-level vocational teachers in society has been rising year by year as the country's emphasis on vocational education has risen incessantly. 2019 saw a small decline in the number of graduates working in education due to the epidemic. However, in terms of the overall trend, the number of graduates engaged in teaching threw on the rise.

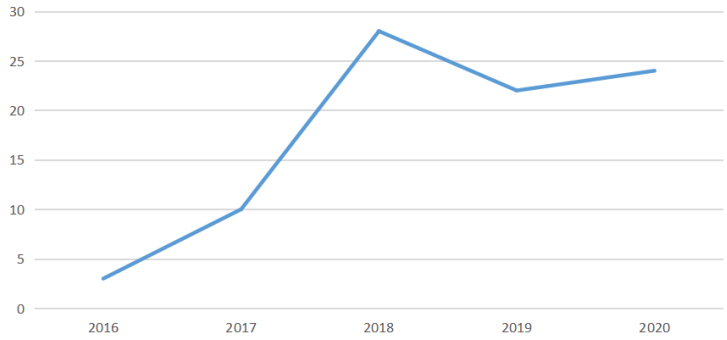

Figure 5: Year by year statistics of the number of graduates engaged in the education industry

According to the results of the follow-up survey in recent years, the employers are satisfied with the moral quality, professionalism, knowledge structure, professional skills, adaptability, communication

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ability, teamwork and cultural literacy of the graduates of this major. From the overall evaluation of the employers, the graduates of this major, the overall evaluation of the excellent rate reached 67%, the competent rate 30% people, the basic competent rate 3%. This shows that most of the graduates of this major have been recognized and highly evaluated by the employers.

4. Conclusion

The employment analysis can be concluded that the initial employment rate of graduates is excellent. Even subject to the epidemic analysis, the initial employment rate of automation majors' graduates in the past 5 years is still above 80%. This major belongs to teacher training, and cultivates talents engaged in engineering education and application talents. Through employment industry statistics, it can be concluded that talents engaged in education account for about 25% overall and those engaged in engineering application account for about 34%. From the employment trend, although affected by the epidemic, the number of people engaged in education industry is still rising steadily. In summary, the initiative of automation majors to improve the cultivation quality and employment rate of undergraduate students has achieved good results.

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