

Practical Research on Graduates' Employment Quality Monitoring in Vocational Colleges

—Taking the Demand of Expanding Employment Information Monitoring in Hunan Judicial Police Vocational College as an Example

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Abstract—In the new era, vocational colleges have become the "cradle" of craftsmen in big countries. The graduates' employment quality monitoring has become an important fulcrum to move vocational education towards the "new normal of education". This work benchmarked six indicators of "employment quality" in the "20 vocational education items" and combined the practical experience of school graduates' employment quality monitoring, which meets the demand of expanding employment information monitoring to a certain extent. The improvement of graduates' employment quality monitoring needs the improvement of the research index system, and also needs to fully "retrospect" the index data in the whole process of schools' learning, so as to play the most important value of the process data. It is necessary to develop a system from several independent indicators to guide the graduates' employment quality monitoring and form a virtuous circle.

Keywords—quality monitoring; employment; graduates; diagnosis and improvement

I. INTRODUCTION

The graduates' employment quality is an important sign to measure the quality of talent training in vocational colleges. The *Implementation Plan of National Vocational Education Reform* (hereinafter referred to as "20 vocational education items") points out that the correct direction of reform should be grasped. According to the principle of "managing both ends, standardizing the middle, integrating documentary evidence and running schools in multiple ways", the teaching standard and the graduates' quality standard should be strictly controlled. The construction of a complete quality assurance system for talent training in higher vocational education, which combines internal guarantee with external evaluation, is very important for the high-quality development of higher vocational education [1].

With the development of diagnosis and improvement for internal quality assurance system in higher vocational education, a large amount of data has been accumulated. After experiencing the whole process of talent training and accepting the social "test" in a certain period of time, the graduates' feedback is the "whole retrospect" to the school's training process and offers reference value for the improvement of higher vocational teaching. Many scholars carry out relevant research, focusing on the construction of diagnosis reform and quality assurance system, and aiming at meeting the demand of

banks (enterprises) for high-quality graduates. From both sides of supply and demand, some strive to break through the bottleneck of "the total employment of vocational college graduates is good, but the level of employment quality is not high". However, the employment of college graduates still faces structural imbalance at present [2]. The "graduates' employment quality portrait" described by the graduates' employment quality monitoring is vague, and does not really generate a realistic "graduates' career development track".

The result data of the employment situation reflected by the graduate employment monitoring, the process data supporting the result data, or the extended data of the analysis result data, as well as the result data itself, are more valuable after certain accumulation and iteration. Our "initial intention" to monitor the employment quality of vocational college graduates is to serve the graduates well, and enhance their employment competitiveness. Based on this, it is urgent to expand the demand of graduates' employment quality monitoring.

II. RESEARCH STATUS AND EXISTING PROBLEMS

A. Historical review on graduates' employment quality monitoring

It starts early and has strong stamina. In 2002, the Ministry of Education clearly emphasized that the employment work should realize the "four modernizations" (i.e., the whole process, the whole staff, the specialization, the informationization). In 2003, the "employment service information network for college graduates in China" was opened. The document No. 35 issued by the State Council in 2004 declared that "all undergraduate colleges and qualified higher vocational (junior college) schools open employment service information network and connect with national and provincial networks". In 2006, the network platform of "national employment network alliance for college graduates" was launched. In 2008, the "national public service platform for college students' employment" issued by Ministry of Education is a stage that the government attaches great importance to the rapid development of employment informationization in colleges. In order to improve the feedback mechanism of employment status and establish a sound employment evaluation system for college graduates, colleges began to compile and release annual reports on graduates' employment quality in accordance with the

requirements from Ministry of Education since 2013. In 2019, the word "employment" appeared 11 times in the full text of "20 vocational education items". It is pointed out that the employment quality should include six indexes: initial employment rate, professional counterpart rate, stable employment rate, income level, employer satisfaction and graduate employment satisfaction.

B. Existing problems

The establishment of graduate employment monitoring system is a long-term and complex process. The follow-up survey on the employment quality of vocational college graduates has been carried out for many years. In the early stage, most of them were written and recorded paper materials, and some of the summary spreadsheets were also fragmented without scientific and effective complete data. The construction of graduate employment information management platform is relatively separated and isolated, and the quality control measures are insufficient. At the same time, the degree of investment in employment informatization varies from province to province, such as the employment quality tracking survey project of Zhejiang Province, which has a budget of 1.95 million yuan in 2016. The overall employment rate in higher vocational colleges is as follows. For example, the employment rate in higher vocational colleges is analyzed by the "employment report of Chinese college students in 2019" (employment blue book) of Mycos Research Institute. The employment rate of 2018 graduates after half a year is 92.0%¹, slightly lower than that of 2017 (92.1%), slightly higher than that of 2016 and 2015 (91.5%, 91.2%) by 0.5% and 0.8%. From the trend of the past five years, it can be seen that the employment rate after half a year's graduation shows a steady trend.

The implementation methods for the employment statistics of college graduates are still not perfect. Many domestic scholars mainly construct employment quality index system according to the demand of colleges, whose purpose is to better promote the employment management of colleges. Ke Yu [3], He Xianzhu [4], et al., used AHP to determine the weight of employment quality evaluation index for college graduates. Wang Qiuyu [5], et al., used the index comprehensive score method to evaluate the employment quality. There is also the evaluation model of employment quality for college students by Guo Libin [6], and the multiple linear regression models by Shi Yang [7], etc.

The scientific nature of some improvement measures also demands to be discussed. In the era of artificial intelligence, the updating and iteration speed of social demand and employers' recruitment status is fast. The graduates' employment situation and the talents' training direction in colleges are always "slow half beat". At present, the evaluation of college students' employment status still focuses on "quantity" rather than "quality", and lacks scientific and systematic. The index system of employment status statistics is mainly based on government regulations.

¹ Data source: Mycos Research Institute - Tracking evaluation on the training quality from 2014-2018 college graduates in China. Figure Changing trend of employment rate from 2014-2018 college graduates

There is no direct and ready-made experience for reference. Such as Song Yidan [8] talking about Suzhou practice, the application of high-efficiency monitoring results must be based on a benign and spontaneous ecological basis from a macro perspective. At this stage, the key is to let the subject of application establish their own analysis ability, which is not built overnight. The present situation is also the same. On the one hand, there are some problems such as the number of times that some colleges' teaching work self-diagnosis and reform stay in a single place, the number of colleges that class A is less than 1 / 3, and the significant fluctuation of the students' ability to adapt to the post-upgrade. It can be seen that there is still a lot of room for improvement in the internal quality assurance system, which demand continuous improvement. On the other hand, the linkage mechanism of enrollment, training and employment in higher vocational colleges is generally not perfect. School departments often perform their own duties, and there is an island of information and not a chain.

The data mining ability of similar samples is limited. Taking Hunan Judicial Police Vocational College as an example, the college belongs to the major category of law and public security. Due to its small sample, it is not included in the "employment situation of various specialties" of Mycos Research Institute². Over the years, the department in charge of employment and the four departments have to appoint special personnel to be responsible for the return visit of graduates. The "telephone return" + "manual record" survey method is incompatible with Internet + education. At present, the difficulties of graduates employment quality monitoring in the college are high cost of data collection, heavy task of return visit and low degree of cooperation among interviewees, which result in low efficiency, low credibility, unable to quickly query and trace.

III. ATTACHING IMPORTANCE TO THE RELATIONSHIP BETWEEN EMPLOYMENT RESULT DATA AND PROCESS DATA

The quality standard of graduates should be at least composed of learning quality and employment quality after graduation. To improve the quality of graduate employment quality monitoring, the research index system needs to be improved. In addition, it is necessary to fully "retrospect" the index data in the whole process of schools' learning, and play the most important value of process data. The employment result data of the graduate employment quality monitoring from the "whole retrospect" is also associated with the process data. The significance of the "whole retrospect" is as follows:

A. Achieving the demand of personnel training objectives

According to the feedback of students' employment data, the university can master the final training quality of the school or major and the matching degree with the social demand, so as to fundamentally improve the employment rate of higher vocational colleges. Based on the process data, the quality monitoring of talent training process will gradually improve the teaching work in the next stage, so as to ensure that the goal

² Data source: Mycos Research Institute - Tracking evaluation on the training quality from 2016-2018 college graduates in China. Table The employment rate of the graduates from 2016-2018 higher vocational colleges

of talent training can be finally achieved. From one side, to ensure the quality of results as the ultimate goal, process quality monitoring is a necessary means. Although the process quality monitoring is limited to the current culture stage, the graduates' feedback is the whole process of the station's return to the end point, and the field of view is more comprehensive.

B. Improving the ways of knowledge skills

Higher vocational colleges should not only impart basic knowledge and skills, but also cultivate students' good moral character, professional ethics and lifelong learning ability. Under the background of artificial intelligence era, it is more important to cultivate students' continuous renewal ability. Aiming at the monitoring of training process quality, it is relatively easy to test the students' mastery of basic knowledge and skills. The monitoring of students' ability development is difficult to achieve in a short time and at a certain stage. In terms of this view, the graduates' short-term and medium-term feedback is one of the effective ways to monitor the long-term development of students' ability.

C. Cultivating real dynamic feedback throughout the process

In the three years of school, students' cognitive style and understanding ability fluctuate greatly in different stages of the training process. For example, in the learning stage of professional theory course, students can't intuitively understand the sequence of course setting. Once they enter the practice stage, they can understand the reason when theoretical knowledge is really applied to the practice process. From the perspective of students, graduates have gone through the whole training process. Combined with the current social development and the actual job capacity demand, they can give relatively more real, more rational and objective feedback on the training process in school.

IV. PRACTICAL RESEARCH ON GRADUATES' EMPLOYMENT QUALITY MONITORING IN VOCATIONAL COLLEGES

It is understood that the employment result data of the graduates' employment quality monitoring is related to the process data. When the quality monitoring index of the graduates' employment quality is expanded, the correlation analysis between the data demands to be strengthened. At the same time, it will be found that some of the expected analysis results lack data support in the deep mining of data, or the reason for the problem tracing is the lack of early data comparison. This requires us to investigate the missing data again, and conduct targeted further investigation and analysis when necessary. The monitoring data can be traced back to the source with continuity and continuity. The raw data is offered by the higher graduate employment quality standards set by the school. It guides the transformation of professional construction level and quality, and realizes the transformation of internal voluntary accountability and internal motivation.

A. Optimizing the employment quality monitoring and evaluation system for graduates of police academy

Based on the theory of total quality management and target management, the police academy has a comprehensive understanding for the employment situation and the quality of college graduates' personnel training and further promotes the reform of vocational education. Taking Hunan Judicial Police

Vocational College as an example, based on the construction of ISO9000 quality management system, the 13th five year plan of the college, the target performance appraisal as the starting point, the target, standard and system as the support, the "tracking investigation on the career development and talent training quality of police graduates" is carried out annually. The system of graduate employment quality monitoring and evaluation includes the following three aspects.

1) Combination of internal quality monitoring and external quality assessment

Monitoring is a detailed record of the status, whereas assessment is a causal analysis of the results and causes. The monitoring and evaluation should be closely combined to present the real status of vocational education and the deep-seated causal relationship. The construction framework of internal quality assurance system takes the construction of school-based data system as the platform. Around the overall development strategy of the school, the construction of internal quality assurance system is organically integrated into the school development plan. The objective tasks and standards are established, and the "internal quality assurance system construction and operation implementation plan" is formulated and optimized.

It should carry out process quality node monitoring, and focus on the key nodes in the process of talent training. The setting of quality control points is "exquisite". For example, the quality of employment includes the graduates' employment rate, the counterpart employment rate, the continuous increase of employment satisfaction (the satisfaction of graduates' employers, the satisfaction of their alma mater), the increase of starting salary point, etc. For another example, the career development includes the monthly income three years after graduation, the proportion of promotion, the stability of work, the students' ability of innovation and entrepreneurship, the proportion of independent entrepreneurship, the overall growth of entrepreneurship, etc. It reflects the need to improve the quality of running a school and conveys an important message to graduates that their alma mater has not forgotten them.

2) Periodic monitoring of graduates' talent development as the main line

The university should test its "products" to understand the employment development of graduates. Judging only by the short-term follow-up feedback results after graduation, it is obviously not persuasive. It is necessary to use the mid-term or long-term career development tracking data of graduates to speak. The promotion status, income change and core competitiveness of graduates, etc., are summarized in a certain period to measure the employment ability and career development potential of graduates. From the perspective of career development, the demands of general education, professional knowledge and ability literacy are effectively fed back during the school period, so as to help vocational colleges improve their professional positioning, talent training and campus infrastructure, etc.

Type I data: graduates' survey after six months. Overall employment rate. Graduation destination distribution. Overall monthly income, monthly income distribution, monthly income of major occupational categories, monthly income of major

industry categories. Overall work and professional relevance. Changing trend in occupational demand, changing trend in industry demand, changing trend in employer type. Changing trend of graduates' employment proportion in local or foreign areas. Career or industry categories of independent entrepreneurship.

Type II data: graduates' survey after three months. Distribution of graduates' employment status (compared with previous graduates). Monthly income of graduates (compared with the whole province), monthly income of graduates (compared with the university six months later), proportion of graduates' education promotion, interval distribution of graduates' monthly income. Proportion of graduates' position promotion. Frequency distribution of graduates' position promotion. Promotion type of graduates. Correlation between graduates' work and major (compared with that of the whole province and the university after six months). Changing trend of occupation and monthly income with large amount of employment (compared with that of the province after six months). Changing trend of industry and monthly income with large amount of employment (compared with that of the province after six months). Changing trend in proportion of employment in various types of employers. Local or foreign employment ratio and Changing trend of monthly income.

Type III data: whole process tracking data. The distribution of graduates. The top five majors with the largest number of civil servants, the income increase of judicial administration system, position promotion. The top five cities with the largest number of enterprises and institutions signing contracts.

3) *Real-time dynamic rendering of the employer's feedback*

Based on the employer's point, the objective evaluation will be conducive to the dynamic monitoring of graduates' professional knowledge, professional ability and work performance. At the same time, the objective evaluation of graduates' quality, education and teaching management will offer a basis for the orientation and internal development of colleges.

Employer survey data. The main industry category of different types, the main industry category of different scale employers. Changing trend of the overall university graduates' performance evaluation by the employers, changing trend of the overall university graduates' performance evaluation by the employers in the main industries. The major industries that have employed fresh graduates of the university in the past three years, the type distribution of employing units that have employed fresh graduates of the university in the past three years, the size distribution of employing units that have employed fresh graduates of the university in the past three years. Changing trend of the employer's satisfaction with the fresh graduates, changing trend of the employer's satisfaction with the fresh graduates in the main industries. The proportion of the employer's management position promotion for fresh graduates.

B. Optimizing the evaluation system to evaluate the graduates of vocational colleges

First, it should promote the implementation of the official statistical system. Focusing on the construction of diagnosis reform and quality assurance system, and guided by the requirement goal of satisfying banks (enterprises) for high-quality graduates, it should make efforts to strengthen, optimize and invigorate legal vocational education from both sides of the supply side and the demand side. A survey on the employment status of graduates in vocational colleges should be established, and more accurate and comprehensive employment data should be collected. It can more accurately grasp the current situation and trends of graduates' employment and expand their participation. Improving the online answering rate of graduates and employers through appropriate guiding efforts, and setting up incentive measures should be solved centrally. Based on the graduates' better understanding of "follow-up survey of graduates' career development and talent training quality", the credibility and response rate of the survey need to be ensured.

Then, the quality monitoring network of school level and department teaching department is constructed. It should establish the three-level quality monitoring network of specialty, specialty group and Institute (university). A collaborative mechanism is formed to promote the development of vocational education monitoring.

Finally, the periodic vocational college students' vocational ability evaluation is carried out. Which not only has the data of graduates' short-term career development, but also the data of graduates' mid-term and long-term. SPSS was used for factor analysis, multiple logistic regressions and multiple linear regressions to verify the effectiveness of the new employment quality evaluation index. The validity and credibility of the specific indicators are verified. It finally proposes to modify and improve the employment quality evaluation index of the college, and cultivate the quality culture with the characteristics of "warning".

By monitoring the whole process of students' growth, the various factors affecting the quality of talent cultivation process should be comprehensively considered. The employment quality monitoring data of the graduates with multi-quality and high quality are obtained to generate a series of reports, including "the general report on graduates' employment", "the report on graduates' employment", "the report on career development", and "the report on the quality of personnel training". Finally, it will be integrated into "the annual report on graduates' employment quality". Thus, the portrait of graduates' employment quality can be described accurately and efficiently, and the career development track of graduates with high credibility can be generated.

V. CONCLUSION

Looking forward to the future, we should clearly recognize the role of "one point monitoring, nine points application, one side expansion, multilateral improvement" in the process of promoting the applied results. Expanding the demand of employment information monitoring is to highlight the school's dynamic independent improvement of monitoring results, form

a closed loop of quality assurance, and ultimately promote the automatic operation of employment quality monitoring system to generate momentum. The abstract data is restored to the real situation of vocational education, and the truth is approximated. It is difficult to solve the problem of "20 vocational education items", which strictly pass the graduates' quality standard.

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