

## Analysis on Working Status of Experimental Technicians in Chinese Colleges and Universities

Zhifeng Yao

College of Mechanical and Electronic Engineering, Northwest A&F University, Yangling, Shaanxi  
712100, China

71396474@qq.com

### Abstract

In order to better understand and master the working status of university experimental technical teams, the experimental technicians' job satisfaction degree was investigated through network and WeChat platform. The collected data were statistically analyzed by SPSS software. The result indicated that the overall job satisfaction of laboratory technicians was at a moderate and above level, most of the researchers were satisfied with the current work content, working environment and the relationship between colleagues. At the same time, the survey also found some urgent problems of experimental technicians to solve.

### Keywords

Experimental technicians; Job satisfaction degree; Working status.

### 1. Introduction

The experimental technical team of colleges and universities integrates practical teaching, scientific research and the management of instruments, which is an indispensable backbone in the teaching and scientific research work in colleges and universities. The sense of profession belonging and happiness of the experimental technicians are directly related to the effectiveness of the teaching reform, the quality of personnel training and the scientific research process [1-3]. Therefore, mastering the first-hand information of the current work status of experimental technicians is of great importance for universities to integrate human resources and implement encouraging measures effectively. For this reason, this article conducted a sample survey on the university experimental technicians' job satisfaction degree through the network platform and WeChat, and the results of the survey were analyzed to provide a useful reference.

### 2. Survey Scheme Design

#### 2.1 Components of the Survey

The questionnaire of college experimental technicians' job satisfaction degree was composed of 7 personal basic information and 25 satisfaction examination items. The questionnaire included five dimensions as follows: the work itself, work reward, promotion, training and the relationship between colleagues. The Likert five point scale scoring method was used to evaluate the sub item quantitatively. The satisfaction degree was divided into 5 grades: very satisfied, satisfied, general, not satisfied, very dissatisfied, which were assigned to 5, 4, 3, 2, 1.

#### 2.2 Questionnaire Issuance and Recovery

The questionnaire was released in two forms including wechat and online platform, the website was: <https://sojump.com/jq/9238774.aspx>. 227 pieces of questionnaires were collected from 13 provinces and cities in China. In order to ensure the preciseness of the questionnaire, the questionnaires whose answer time was less than 100 seconds were invalid. The subjects of the same computer and mobile phone could only fill in one questionnaire and multiple submissions were invalid. At the same time, in order to avoid the deviation of the answers, we eliminated the unqualified questionnaires which were

illogical, adopted reverse scoring or had high vacancy rate. The remaining 186 questionnaires constituted a formal sample of statistical analysis.

### 2.3 Data Process

The sample data were collected and analyzed by SPSS22.0 software. The author made a descriptive statistical analysis on the factors of the job satisfaction degree of the experimental technicians through the independent sample T test, analysis of variance and so on. The results showed that the consistency coefficient of Alpha was 0.943, which indicated that the questionnaire was in good reliability.

## 3. Results and Analysis

### 3.1 The General Status of the Job Satisfaction

Through the sample data processing, we could reach the status of the job satisfaction of the university experimental technicians. The degree of job satisfaction was in a moderate level, the total average score was 3.3 and the standard deviation was 0.861. It was significantly higher than the neutral value of 3 by u test ( $p < 0.01$ ). The distribution of different satisfaction ratio was shown in [Fig. 1](#). The number of people with a common sense was the largest, accounting for 48.11%; the people of satisfaction and very satisfaction accounted for more than 38.92% of the whole people.

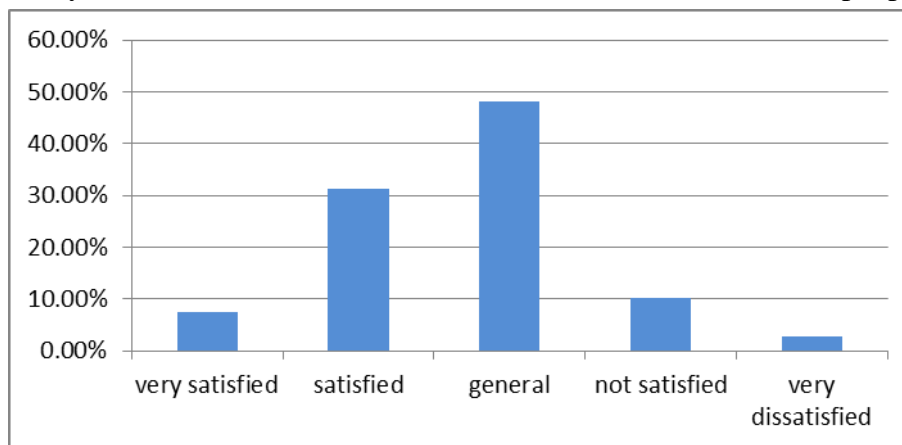


Fig. 1 The overall job satisfaction degree

### 3.2 Imbalance Between Different Dimensions

In the 5 dimensions of job satisfaction, the mean values of the 3 dimensions were higher than the median value (3). As shown in [Fig. 2](#), the highest score was the work itself, with an average score of 3.37, indicating that the experimental technicians had high recognition on the working environment, equipment conditions and work content, which was closely related to the great construction of laboratory and the great improvement of the hardware facilitates. Secondly, the average score of the interpersonal relationship dimension was 3.33, which indicated that the interpersonal relationship among experimental technicians was very harmonious. The mean value of promotion was also higher than the median rating. The grade of work reward dimension (2.89) was below the average, which showed that the current wage level had not satisfied the experimental technicians; The score of the training was the lowest, only 2.72.

### 3.3 Low Salary and Treatment of Experimental Technicians

In terms of salary, only 25% of the technicians were satisfied and very satisfied with their salary, while 37% of the technicians were dissatisfied or very dissatisfied with the salary ([Fig. 3](#)). Further analysis showed that the salary level of the experimental technical team was low compared with other teaching and administrative staffs. The teaching and administrative staffs were usually divided into teacher series, management series, teaching aid series, work and diligence series in universities. Among them, teacher series and management series were the mainstream while experimental technicians were included in the aid team serving for teacher series and management series. This kind

of position led to the results that experimental technicians received significantly worse treatment than mainstream staffs in class fees, job wages, salary levels, salary, performance allowances and other aspects. Such a kind of low income led to experimental technicians’ lack of sense of identity on the value of work. They would lost the initiative to the work, the happiness and sense of responsibility for the job. It is recommended that colleges and universities further improve the standard of experimental technicians and narrow the gap between experimental technicians and teachers in salary and treatment.



Fig. 2 The mean value of each dimension

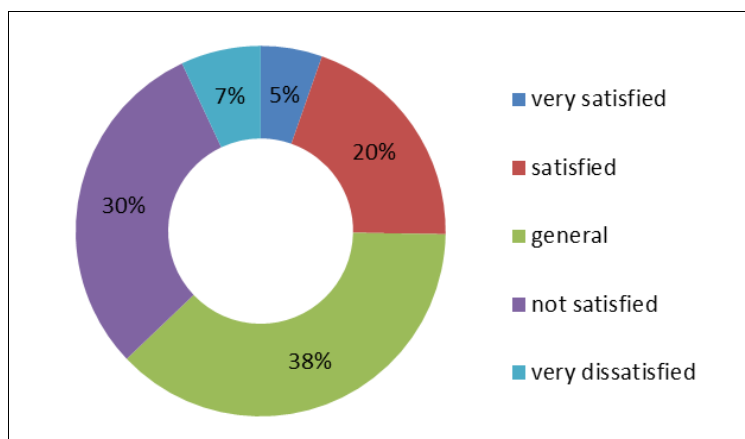


Fig. 3 Distribution of the satisfaction with treatment

### 3.4 Lack of the Training System for Experimental Technicians

The item “participate in outside training and academic exchange” enjoyed the lowest satisfaction for experimental technicians, as shown in Fig. 4, 44.62% of the technicians did not have the opportunity to outside training in three years, which indicated that colleges and universities were lack of the training promotion of experimental technicians. Influenced by traditional consciousness, colleges and universities emphasized too much on the import of high-end equipment and the number of first-class experimental platforms while the enhancement of the business level of experimental technicians team was ignored. Experimental technicians had little opportunity to study and exchange outside, which not only reduced their working positivity, but also impeded the speed of knowledge regeneration[4,5]. Therefore, universities should provide opportunities for experimental technicians to study and develop through suitable system establishment in order that they would be able to expand their vision and enlarge their knowledge in continuous learning to deeply participate in laboratory teaching, technology innovation and scientific research.

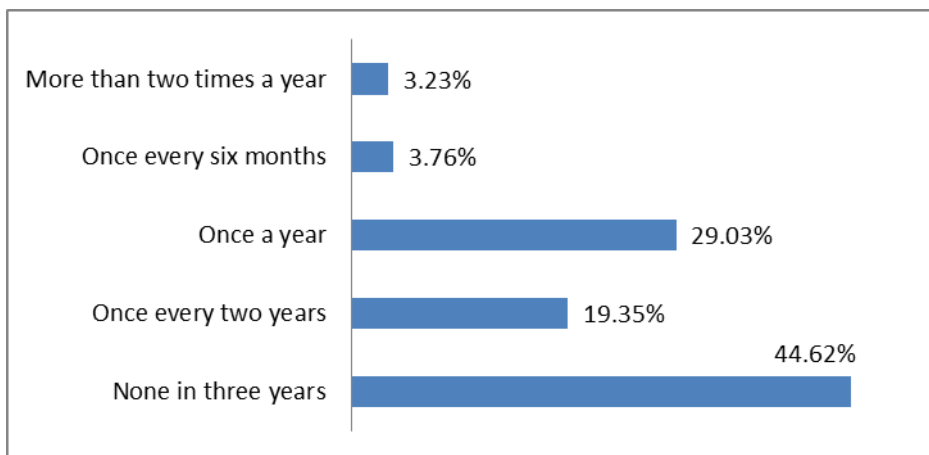


Fig. 4 The frequency of experimental technicians' participation in outside training and academic exchange.

### 3.5 Low Participation Rate of Experimental Technicians' Scientific Research.

As shown in Fig. 5, nearly half of the experimental technicians did not belong to any scientific research team, and nearly 70% of the experimental technicians enjoyed low participation in scientific research. On the one hand, more and more laboratory and technical positions in colleges and universities required a master degree even a doctor's degree[6,7]. On the other hand, the experimental technicians who had high education background did not have a role to play, which made their work positivity reduce. So, colleges and universities should change the traditional policies for experimental technicians and innovate system to design more promising development space for them, in order that these special human resources who master high education background and sophisticated instruments can play more roles in universities.

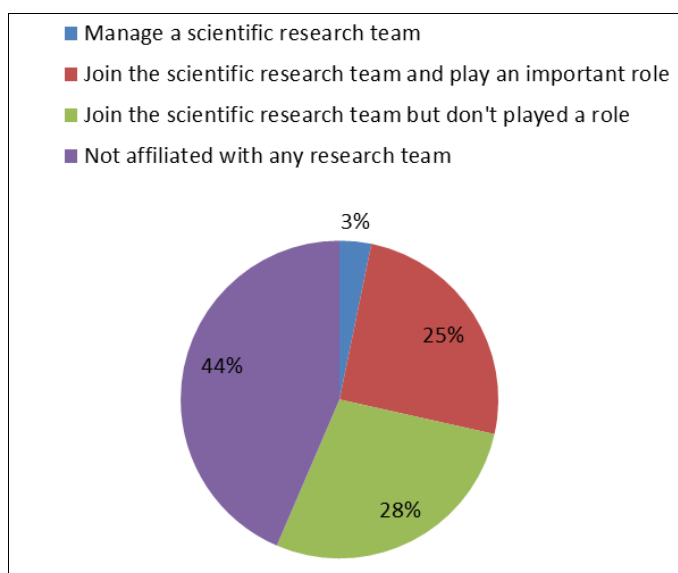


Fig. 5 Participation of experimental technicians in scientific research

## 4. Conclusion

The job satisfaction of the experimental technicians is the barometer of their work performance and work enthusiasm. Through the experimental technicians satisfaction survey, the working status of the experimental technicians in universities was quantified, the problems existed in the experimental teams in colleges and universities were received and references was provided for universities to further strengthen the experimental team construction and system reform.

---

## References

- [1] Chen Wenqian, Song Jun and Zhan Yongjia. The Exploration and Research of the Construction of Experimental Technical Team in Colleges and Universities [J]. Experimental Technology and Management, 2013 (03): 190-192.
- [2] Liu Siliang, Tian Chuanjun and Qiu Weitao. The analysis and Countermeasures of the Factors Affecting the Lack of the Happiness of the Position of Laboratory Technicians in Colleges and Universities [J].Experimental Technology and Management. 2012(01):178-180..
- [3] Zheng Ye and Liu Wei. Job Satisfaction, Subjective Happiness and Job Performance [J]. Financial Problems, 2012 (12): 23-30.
- [4] Li Li and Qi Jing. The Present Situation, Problems and Countermeasures of the Work of Laboratory Technicians in Colleges and Universities [J]. Henan Agriculture, 2015 (12): 9-11.
- [5] Fan Ningjuan, Wang Bo, Duan Min. How to Improve the Quality of Experimental Technicians [J]. China Universities' Science and Technology, 2013 (09): 25-26.
- [6] Li Cheng and Zhu Haiyan. Discussion on the Professional Development Situation and Countermeasures of University Laboratory Technicians: Based on the Investigation and Analysis of the Universities in Zhejiang[J]. The Research and Exploration of Laboratory,2013, (08): 442-447.
- [7] Zhang Huiqin, Zhou Jiping and Zhou Jun. Thinking and Countermeasures of the Reform of the Management System of University Laboratory [J]. Experimental Technology and Management, 2015 (09): 236-238.