



An Analysis on the Influencing Factors of Teacher Education Satisfaction in Comprehensive Universities Based on SPSS

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Abstract

As an important way to train teachers, teacher education plays a key role in the development of national education. The study of teacher education satisfaction is helpful to understand the state of teacher education and timely correct the problems in the process of teacher education, which has important theoretical significance and practical value for the development of teacher education. Taking students majoring in biological science from a local comprehensive university in Liaoning Province as samples, a model of influencing factors of satisfaction degree was constructed and data analysis was conducted with SPSS software. The results show that the students are satisfied with the whole process of teacher education. There are significant differences in students' satisfaction with teacher education among different grades. There is room for improvement in teacher education. Therefore, the university should pay attention to the needs of students of all grades in the future teacher education, improve the overall satisfaction of teacher education, and better serve the development of local education economy and culture.

Keywords: *Teacher education; Influencing factors; SPSS; Data analysis*

1 INTRODUCTION

The progress of science and technology information promotes the high-speed operation of the knowledge-based economy society, and the development and utilization of educational resources become a global focus. As a key factor to maintain the vitality of educational resources, teacher education, controls the reform and development of education to a great extent [1]. In China, teacher education has experience from closed directional training to open non-directional training mode and then to open mixed training mode [4]. Nowadays, teacher education is an open and diversified teacher education system with normal universities as the main body and comprehensive universities as the joint participation [5]. Comprehensive universities undertake the task of teacher education in different degrees and play an important role.

With the development of teacher education, more and more educational researchers attach importance to the idea of "student-centred" teacher education. Empirical research on student satisfaction can accurately reflect the unsatisfied expectations of students. As early as 1966,

CIRP (Cooperative Institutional Research Program) carried out the measurement of freshman satisfaction [3]. With the deepening of China's higher education reform, the subject status of students is constantly improving, and the study of student satisfaction has begun to appear in China, and gradually attracted the attention of education researchers [2]. As the subject of teacher education, normal students' satisfaction in the whole process of learning and practice experience directly affects their recognition of teacher profession. The result of their satisfaction has a direct impact on the development of teacher education and the direction of education in the university. Therefore, an analysis on the influential factors of teacher education satisfaction based on SPSS software, in order to provide reference for the subsequent development of teacher education.

This study empirically analyses the influencing factors of teacher education satisfaction of students majoring in biological science in a comprehensive university in Liaoning Province, which will provide reference for the improvement of teacher education in comprehensive universities and the high-quality development of teacher education.

2 METHODS AND MODELS

2.1 Research Objects

The subjects of this study are students majoring in biological science in a comprehensive university in Liaoning Province, which has made outstanding contributions to the talent supply of middle school biology teachers in Liaoning Province of China, with 20% to 30% of middle school biology teachers coming from this major. In this research, an open questionnaire survey method was adopted, and questionnaires were randomly distributed to freshmen to seniors majoring in biological science. A total of 227 questionnaires were distributed, 225 were recovered, and 0 invalid questionnaires were removed, and 225 effective questionnaires were screened out, with an effective rate of 99%.

2.2 Measurement Model Construction

The design of the scale follows the development law of teacher education and the orientation of universities. Considering that the talent training target of the sample students is Chinese middle school teachers, the theoretical model of influencing factors of teacher education satisfaction was formulated according to the Implementation Measures for Teacher Education Professional Certification in Ordinary Colleges and Universities (Interim) issued by the Ministry of Education of the People's Republic of China (As shown in Figure 1).

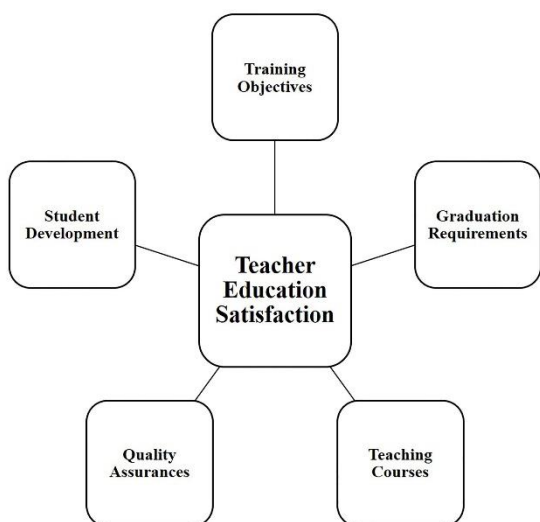


Figure 1: The theoretical model of influencing factors of teacher education satisfaction.

Table 1: Index of influencing factors of satisfaction.

Dimension	Quantitative factors
Training Objectives	Training Objectives Content
	Professional Evaluation
	Social need matching
Graduation Requirements	Professional value identification
	View on teachers
	Discipline accomplishment
	Teaching theory knowledge
	Autonomous learning
	Teaching skills
	Teaching practice ability
	Basic skills of teachers
	Modern information technology
	Innovation ability
	Teaching and research
	Teaching reflection
	Language skills
	Team collaboration
	Labor education
Student activities	
Dimension	Quantitative factors
	Course arrangement system

Teaching Courses	Teacher's teaching level
	Tutorial guidance
	Teaching quality
Quality Assurances	Library evaluation
	Employment Guidance evaluation
	The scholarship
	Laboratory and classroom evaluation
	Canteen and dormitory evaluation
	Health services
	Campus security
Student Development	Student Community Activities
	Participation in academic activities
	Student Career Planning

The questionnaire includes two aspects. One is the basic information, the other is the influencing factors of teacher education satisfaction scale. Basic information, including gender, grade. Satisfaction inventory, including: five dimensions (training objectives, graduation requirements, teaching courses, quality assurances, student development), 35 quantitative indicators (As shown in Table 1).

The questionnaire covers the comprehensive university biological science teacher education undergraduate course four years in the areas of learning experience, and after the panel has the feasibility and rationality. The questionnaire adopts the positive scoring method of Likert five-point scale. According to the degree of satisfaction, very satisfied is "5". Relatively satisfied is "4"; General is "3"; Less satisfied is "2"; Very dissatisfied is "1".

2.3 Data Processing

The SPSS was used to test the reliability of the questionnaire data to make the data processing results

reliable. The Cronbach's alpha of the five variables were all greater than 0.91 (As shown in Table 2), indicating that the scale has high reliability. The KMO value was 0.968, and the significance value of Bartlett sphericity test was 28943.15 (As shown in Table 3), indicating that the questionnaire data were highly correlated. It can be further researched and studied.

Table 2: Reliability test results (N=225).

Dimension	Cronbach's Alpha
Training Objectives	0.927
Graduation Requirements	0.915
Teaching Courses	0.936
Quality Assurances	0.978
Student Development	0.951

Table 3: KMO and Bartlett sphericity tests.

KMO test value	Bartlett sphericity test value	
	Observations	Significance
0.968	28943.15	0.000

3 RESULTS

3.1 Descriptive Survey Statistics

According to the data obtained from the questionnaire, there were 44 males and 183 females in the sample. The number of freshmen, sophomores, juniors and seniors was 69, 70, 57 and 31 respectively (As shown in Figure 2). It can be seen that female students account for a high proportion in the teacher education structure of biological science major in the school, because female students account for a large proportion in the overall student structure of the school, resulting in serious gender imbalance. This also shows that women have a greater demand for teacher education in biological science.

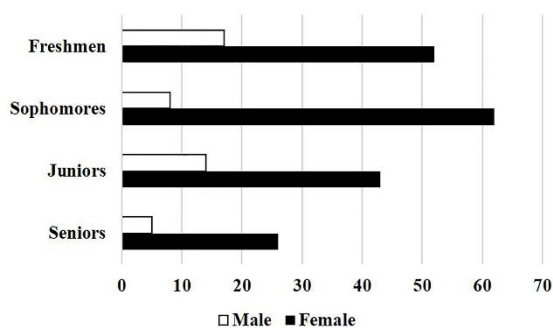


Figure 2: Basic information about the sample.

The overall student satisfaction score was 3.95 (out of 5, the same below). It shows that the students' overall satisfaction evaluation is above medium level and they are satisfied with the whole process of school teacher education. The overall satisfaction score of training objectives was 3.92, the overall satisfaction score of graduation requirements was 4.02, the overall satisfaction score of course teaching was 3.95, the satisfaction score of quality assurance was 3.95 and the satisfaction score of student development was 3.91 (As shown in Table 4). In terms of individual indicators, the scores of teaching reflection, tutorial guidance and participation in academic activities were 2.12, 2.01 and 2.35, respectively. It shows that in the process of teacher education, students are deficient in the formation of teaching reflection. In the future, the university should strengthen the guidance of students to form the habit of thinking of teaching reflection in educational practice, and strengthen the guidance of tutor system and the development of high-quality academic activities. The satisfaction scores of professional value identification, discipline accomplishment, teaching practice, curriculum arrangement and teaching theory knowledge were 4.81, 4.55, 4.48, 4.65 and 4.45, respectively. It shows that students have a high recognition of their future career as a teacher and recognize the training mode of teachers' ability.

Table 4: Characteristics of Teacher education.

Dimension	The Mean Score
Training Objectives	3.92
Graduation Requirements	4.02
Teaching Courses	3.95
Quality Assurances	3.95
Student Development	3.91

By comparing the satisfaction scores of different grades, it is found that senior students' satisfaction score is 3.83, lower than the overall satisfaction score (As shown in Table 5), while freshman students' satisfaction score is 4.02, higher than the overall satisfaction score. The score of teacher education satisfaction of senior students is significantly lower than that of junior students. The main variables leading to the low satisfaction of senior students were career planning, participation in academic activities, teaching reflection and so on. It shows that with the deepening of learning and their own development, senior students have a strong desire to improve their own ability, so as to be competent for the teaching post they will enter soon.

Table 5: Difference of Teacher education satisfaction.

Grade	The Mean Score
Freshmen	4.02
Sophomores	3.98
Juniors	3.97
Seniors	3.83

3.2 Difference Analysis

The difference between grade and satisfaction score was analysed by T-test, and the results showed that the significance level value of variance homogeneity test was 0.185 and greater than the significance level α ($\alpha=0.05$). According to the hypothesis setting and judgment criteria of homogeneity of variance test, the null hypothesis of homogeneity of variance test should be accepted. It indicates that the variance of data of different grades is homogeneous and can be analysed by variance. According to the multiple T- test results, the P-value of the mean T-test of senior and sophomore students is 0.045, and the P-value of the mean T-test of senior and freshman students is 0.021, which is less than the significance level α ($\alpha=0.05$). According to the hypothesis setting and judgment principle of significance test in the analysis of variance, the original acceptance should be rejected and the alternative hypothesis should be accepted, that is, there are significant differences in satisfaction data between the two groups of seniors, sophomores and freshmen.

4 CONCLUSIONS

This study uses modern education technology to construct a reasonable model of teacher education satisfaction. Through the questionnaire design, the influencing factors of teachers' education satisfaction of

biological science major in a comprehensive university in Liaoning Province were evaluated, and the conclusion was drawn: The degree of satisfaction of the students majoring in biological science is above middle level, and they are satisfied with the whole process of teacher education. The school attaches great importance to the talent training in the whole process of teacher education, and the design of each link of teacher education is reasonable and synergistic.

However, there are significant differences among students of different grades in their satisfaction with teacher education, and the satisfaction of students of higher grades is significantly lower than that of students of lower grades. In the process of teacher education, schools should take care of the development needs of students of different grades and pay attention to the index factors that cause the low satisfaction of senior students in teacher education, adjust the weight with grade in the process of teacher education and take care of all students to promote the formation of the whole process of education.

In addition, it is necessary to pay attention to the influence of tutorial system in the process of teacher education and give full play to the exemplary role of tutorial system in the process of teacher education. Strengthen the construction of teachers, give full play to their educational function, and promote the vigorous development of teacher education.

5 DISCUSSIONS

In China, teacher education in local comprehensive universities plays an important role in supporting local education supply and promoting local economic and cultural construction. Teachers, the main body of educational practice, are the disseminator of the whole educational theory and the implementor of educational practice. Teacher education is the source of the development of education, the starting point to improve the quality of education, and the fundamental guarantee of educational development.

Taking practical measures to strengthen and improve teacher education is the cornerstone of education reform and development and the overall improvement of teachers' quality and ability. Teacher education is the first step for students to become qualified teachers, and the satisfaction and recognition of teacher education have a profound impact on whether they will be engaged in teaching in the future. Improving the satisfaction of teacher education is of great practical significance to the sustainable and healthy development of teacher education. Therefore, under the education concept of giving priority to the development of education, it is the good choice to promote the vigorous development of teacher education and deepen the reform of teacher education to pay attention to the influencing factors of

teacher education satisfaction and pay attention to the actual needs of education for timely information feedback and correction.

At the same time, for specific problems in the process of teacher education, it is necessary to carry out theoretical refinement and practical exploration from multiple perspectives, and keep thinking and reflecting, in order to improve the satisfaction of teacher education and promote the all-round development of people.

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