

THE STRATEGY OF IMPROVING THE COMPETENCY OF GRASSROOTS MANAGEMENT POSITION: A CASE STUDY OF THE CONSTRUCTION ENGINEERING MANAGEMENT MAJOR AS AN EXAMPLE

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Abstract: In the rapid development of vocational education in the environment, scientific and technological progress must rely on talent, talent training cannot be separated from education, as a college and university, to cultivate talents capable of specific positions, is the fundamental task of the school. Focusing on the main training objectives of the construction engineering management major (grassroots managers of construction engineering), this study analyzes the factors influence the competency of the construction project in the training process based on the job demand, and puts forward suggestions for the construction of the major.

This study adopts quantitative research method, combined with the iceberg theory, from the perspective of school cultivation and enterprise demand, 136 valid questionnaires were collected from professional leaders, directors of teaching and research departments, backbone teachers and enterprise managers of 8 vocational colleges and universities and 20 cooperative enterprises in Jinan City, and the relevant information obtained was systematically and normatively organized. With the help of software, the collated information was subjected to factor analysis to analyze the factors affecting the competency of construction engineering basic management positions.

Through the study, it is found that: in the process of construction engineering management professional construction, there are a series of problems such as students' weak professional theoretical knowledge, insufficient level of professional skills, poor working ability, personal qualities need to be improved and so on, which restricts the development of the profession.

Through analysis, on the basis of the iceberg theory, combined with the characteristics of the construction engineering management major, from the perspective of improving the students' professional theoretical knowledge level, skill level, Starting from the four major aspects of work ability and personal character, strategic suggestions are put forward: firstly, reconstruct the talent training system, appropriately increase the class time of professional theoretical courses, and update the course teaching content in a timely manner; secondly, the in-depth cooperation between schools and enterprises to jointly compile talent training programs and innovate talent training models; thirdly, encourage students to participate in various skill competitions at all levels and strengthen the intensity of technical

services; finally, through case analysis, role playing, etc., strengthen the sense of responsibility, Hard-working and pressure-resistant education, etc., to improve students' competency for grassroots management positions in construction projects.

Keywords: Iceberg Theory, Construction Engineering Primary Management Positions, Competency

Introduction

In the environment of rapid development of vocational education,(Guo,2021) scientific and technological progress must rely on talent, talent training cannot be separated from education, as colleges and universities, cultivate excellent talents who can be qualified for the position, is the urgent need to solve the problem of schools, for the comprehensive construction of socialist modernization of the country, and the realization of national rejuvenation of China's dream to make a positive contribution. (Wei, Chen, & Hua, 2012).

China's higher vocational education is the cultivation of highly skilled professionals for production, construction, management, and service needs of the front line, which started and developed with the reform and opening up (Nie, 2020). In the process of professional development, problems such as insufficient job competence of graduates and inability of trained students to adapt to their positions quickly have gradually emerged.

Research Objectives

This paper analyzes the competency of construction engineering management graduates of eight vocational colleges and universities in Shandong Province on grass-roots management positions through the study of existing literature such as the study of grass-roots managers' competency and the study of job competency, and uses the relevant tools and knowledge systems learned to elucidate the current situation and problems of their graduates' competency and find suitable strategies through the analysis of the problems, so as to promote the healthy development of the construction engineering management profession. The study will analyze the problems and find appropriate strategies to promote the healthy development of the construction management profession.

- (1) To analyze the factors affecting the competency of grassroots management positions of construction engineering management graduates.
- (2) To provide suggestions for construction engineering management based on iceberg theory.

Literatures Review

Competency Study for Grassroots Management Positions. Through the search of Zhi.com and Wanfang databases, a total of 1,276 articles were found with the keyword of "job competence", among

which 324 articles were related to the basic level managers, which provides a rich theoretical foundation for the study of job competence in China. Taylor firstly researched on competence, and after him, John Flanagan proposed the method of key event interview, which laid an important foundation for the continuous research on competence. After Taylor, John Flanagan proposed the method of key event interview, which laid an important foundation for continuous research on competency. In subsequent studies, researchers have studied competency at the level of individual differences, thus providing a strong impetus for the study of competency modeling. Three scholars have a strong representation, mainly (Akgerman, 2020) in the actual implementation of the research work, the active application of critical incident technology as a research method, to the successful and the failure of the work done by the differences in the performance of the study; (Berit, 2020) in the process of the study, the motivational factors into it, redefined the concept of performance appraisal; Mc Ber in the process of research, the motivational factors into it, redefined the concept of performance appraisal; (Akgerman, 2020) in the process of the study, the motivational factors into it, redefined the concept of performance appraisal, and the performance of the study. Mc Ber in the process of investigation and research, enhanced cooperation with the American Management Association, continue to enrich the dimensions of the competency model.

Bai (2015) studied the post competency of young doctors in Henan Province through the method of questionnaire survey and believed that the clinical ability of doctors should be improved through institutional education and continuing education. He & Dai (2017) analyzed the influencing factors affecting the post-competence of master tutors in colleges and universities, put forward the strategy to improve the construction of master tutors in colleges and universities, and considered that team building, mechanism and business ability should be strengthened. He (2015) starting from three theoretical perspectives of strategic management, corporate governance and human resource management, constructs a competency index element library, including personnel communication, organizational leadership, general planning and other elements, but at the same time admits that the index library is not applicable to special enterprises, and acknowledges the influence of corporate culture and value orientation on the characteristics of employee competency (Wang, 2021).

By exploring the competency model construction of top managers in large private joint-stock enterprises, the study focuses on top managers in large private joint-stock enterprises and emphasizes the degree of fit between competency models and enterprise management practices. (Ye, 2022) concluded that competency modeling helps to improve the overall management and control level and implement performance evaluation, thus helping enterprises to realize the coordinated development of the three dimensions from individual employees to the whole company as a whole.

According to the survey of executives (Left, 2022), the competency model for this group should include three main competency characteristics: self-management, interpersonal communication, and

career integration. The level of interpersonal communication competence has the most significant positive correlation with job performance, while the corresponding correlation between the other two is somewhat weaker. At present, the competency modeling of junior managers has become the focus of many scholars' research. There is a big difference between different junior managers in different industries, and there is also a big difference between the training, recruitment and selection of junior managers.

Methodology

The questionnaire was designed according to the "Iceberg Theory" and the characteristics of construction engineering management job competence, and the QR code was generated through the Questionnaire Star platform and distributed through the Questionnaire Star network.

From September 2023 to January 2024, an electronic questionnaire was distributed on the web and 136 valid questionnaires were returned. The questionnaire was divided into two parts, the first part was the demographic information of the respondents, such as gender, age and years of experience. The second part is designed according to the competency characteristics contained in the "Iceberg Theory" to study and analyze the different views and opinions of the respondents on the competency of construction engineering management positions in terms of professional theoretical knowledge, professional skills, work ability and personal qualities.

Results

Through literature research, questionnaire survey, factor analysis and other methods, this study summarized the competency model table of construction engineering technology professionals, with 4 dimensions and 13 quality items. After testing, the final competency model is established.

Of the 136 valid questionnaires, 90 were from males, accounting for 66% of all respondents. Forty-six females, or 34 per cent of all respondents. With regard to age, 80 persons, or 59 per cent of all surveyed, were under 25 years of age; 12 persons, or 9 per cent of all surveyed, were between 26 and 30 years of age; 10 persons, or 7 per cent of all surveyed, were between 31 and 35 years of age; and 34 persons, or 25 per cent of all surveyed, were 36 years of age or older.

With regard to the number of years of experience in the field, 102 persons, or 75 per cent of the total number of respondents, had been in the field for 3-5 years; 8 persons, or 6 per cent of the total number of respondents, had been in the field for 6-10 years; and 26 persons, or 19 per cent of the total number of respondents, had been in the field for 11 years or more. For details of the specific data, see Table 1.

Table 1: Results of the questionnaire

Attributes	Classification	Number of persons
Gender	man	90
	woman	46
Age	Under 25 years of age	80
	26-30 years old	12
	31-35 years old	10
	Over 35 years of age	34
Years of practice	3-5 years	102
	6-10 years	8
	10 or more	26

Discussion

1). *Specialized theoretical knowledge*

On the question "How satisfied are you with the level of specialized theoretical knowledge?" 0% chose "very satisfied", 18.38% chose "satisfied", 14.71% chose "average", 55.15% chose "dissatisfied", and 11.76% chose "very dissatisfied".

On the question "Satisfaction with rigor?" question, 3.68% chose "very satisfied", 33.09% chose "satisfied", 25.0% chose "average", 27.94% chose "dissatisfied", and 10.29% chose "very dissatisfied".

On the question of "How to improve the level of professional theoretical knowledge of construction engineering management graduates?" 47.79% chose "increasing the hours of specialized theory courses", 30.88% chose "innovating the teaching content of courses", 14.71% chose "deepening the teaching reform", and 6.62% chose "others".

2). *Specialized skills*

In the question "Satisfaction with the level of professional skills?" 3.68% chose "very satisfied", 7.35% chose "satisfied", 17.65% chose "average", 66.18% chose "dissatisfied", and 5.15% chose "very dissatisfied".

In the question "How satisfied are you with your communication skills?" 0% chose "very satisfied", 13.24% chose "satisfied", 22.06% chose "average", 60.29% chose "dissatisfied", and 4.41% chose "very dissatisfied".

On the question "How satisfied are you with your coordination skills?" 3.68% chose "very satisfied", 14.71% "satisfied", 22.79% "average", 47.79% "dissatisfied" and 11.03% "very dissatisfied".

On the question of "Satisfaction level of service consciousness?" the percentage of those who chose "very satisfied" was 14.71%, "satisfied" 11.03%, "average" 70.59%, "dissatisfied" 3.68% and "very dissatisfied" 0%.

On the question of "How to improve the professional skills level of construction engineering management graduates?" 52.94% chose "in-depth cooperation between schools and enterprises, jointly

develop talent training programs", 28.68% chose "innovative talent training mode", 16.91% chose "in-depth cooperation with enterprises, more skill training", and 1.47% chose "others".

3) Work ability

In the question "How satisfied are you with your problem-solving skills?" 1.47% chose "very satisfied", 18.38% "satisfied", 23.53% "average", 25.74% "dissatisfied" and 30.88% "very dissatisfied".

On the question "How satisfied are you with your analytical skills?" 7.35% chose "very satisfied", 22.06% chose "satisfied", 0% chose "average", 50.74% chose "dissatisfied", and 19.85% chose "very dissatisfied".

On the question "How satisfied are you with your resilience?" 5.88% chose "very satisfied", 14.71% "satisfied", 62.50% "average", 14.71% "dissatisfied" and 2.21% "very dissatisfied".

On the question of "How to improve the working ability of construction engineering management graduates?" 69.85% chose "emphasize the role of skills competition", 14.71% chose "strengthen the technical service", 13.24% chose "improve the comprehensive ability of teacher team", and 2.21% chose "others".

4). Personal qualities

In the question "How satisfied are you with your sense of responsibility?" 2.94% chose "very satisfied", 0% chose "satisfied", 30.88% chose "average", 65.44% chose "dissatisfied", and 0.74% chose "very dissatisfied".

In the question "How satisfied are you with hard work?" 0% chose "very satisfied", 0% chose "satisfied", 22.06% chose "average", 77.21% chose "dissatisfied", and 0.74% chose "very dissatisfied".

In the question "How satisfied are you with your ability to resist stress?" 0% chose "very satisfied", 0% chose "satisfied", 19.12% chose "average", 72.06% chose "dissatisfied", and 8.82% chose "very dissatisfied".

In the question "Based on your experience, how to improve the personal qualities of construction engineering management graduates?", 79.41% chose "Increase case studies", 15.44% chose "Organize field trips and simulation projects", 1.47% chose "increase psychological lectures", and the percentage of those who chose "others" was 3.68%.

Conclusions

According to the iceberg theory design questionnaire, through the questionnaire star for network distribution, returned 136 effective questionnaires, while combining the domestic and international literature research, the factors affecting the competency of graduates in grass-roots management positions were analyzed.

1) In terms of specialized theoretical knowledge

In the questionnaire, in the "satisfaction level of professional theoretical knowledge?" Question,

choose "unsatisfactory" accounted for 55.15%, more than half of the respondents are not satisfied with the level of professional theoretical knowledge of construction engineering management students. There are backward teaching content and other systematic problems, vocational training is often closely related to the transformation of social employment trends, social employment needs change, the first measures to adjust the teaching is usually higher vocational colleges and universities. However, in terms of the current higher vocational colleges and universities construction engineering management professional training, although the institutions to make adjustments in the teaching to meet the needs of society, but the actual curriculum of the teaching content of the setting is not innovative, students are exposed to professional learning seems to be stuck in the previous version of the obsolete, especially theoretical teaching materials backwardness is more obvious. Moreover, the backwardness of the course content is generally the key to directly affect the quality of professional training, but also expose the problems in the training mode of the institution, and become an obstacle to the development of the institution.

2) In terms of specialized skills

In the questionnaire, the percentage of respondents who chose "unsatisfactory" in the question of "Satisfaction with the level of professional skills" was 66.18%. question, the proportion of those who chose "unsatisfactory" is 66.18%, most of the respondents are dissatisfied with the level of professional skills of construction engineering management students. In addition to professional theoretical knowledge, construction engineering management positions also need to have a series of professional skills, such as engineering surveying, engineering budget, engineering drawing, engineering quality control and so on. However, many students in college during the training of these skills is not sufficient, the training base is insufficient, far less than the internship needs of construction engineering technology students. In the study of graduates' demand, it is found that enterprises prefer students who have had internships or work experience. Therefore, the lack of internship training bases makes students' internship and employment especially difficult. As a result, they are unable to work independently in practice. In order to improve their competence, they need to strengthen the development and improvement of these skills, such as through internships, training and other ways to obtain more practical experience.

3) In terms of working ability

In the questionnaire, 30.88% of the respondents chose "very dissatisfied" for the question "How satisfied are you with your problem-solving skills?". Question, choose "very dissatisfied" accounted for 30.88%, these very dissatisfied with the problem, need to be worthy of attention. Construction engineering management positions need to have strong working ability, such as communication and coordination skills, organization and management skills, teamwork skills, and so on. However, many students tend to focus only on the cultivation of professional knowledge and skills, but ignore the

cultivation and improvement of these abilities. Therefore, communication and coordination ability, organization and management ability, teamwork ability and other aspects of the work ability, affect the ability to adapt to the work environment and work requirements.

4) *Personal qualities*

In the questionnaire, "How satisfied are you with your personal qualities (sense of responsibility, hard work, stress resistance)?" On the question, the proportion of those who chose "unsatisfactory" was 65.44%-77.21%-, the vast majority of respondents were dissatisfied with the personal qualities of construction engineering management students. Construction engineering management positions require honesty and trustworthiness, rigor and meticulousness, seriousness and responsibility and other personal qualities. However, many students do not develop good personal qualities during their college years, which leads to the fact that they cannot be recognized and trusted by their leaders and colleagues at work. Obviously, personal qualities such as honesty, meticulousness, conscientiousness and responsibility affect personal competence.

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