

The Current Situation, Influencing Factors and Countermeasures of Innovation and Entrepreneurship Mentor Team Construction in Vocational Colleges under the Background of "Double High Program"

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Abstract: With the rapid development of China's economy and the adjustment of industrial structure, innovation and entrepreneurship have become a key force to promote economic growth and employment growth. China has implemented the "Double High Program" in higher vocational and technical colleges to strengthen innovation and entrepreneurship education so that graduates will have greater space for employment and development. Therefore, it is of great practical significance to build the team of innovation and entrepreneurship mentors of higher vocational college students. Based on the domestic and foreign research on the construction of the innovation and entrepreneurship mentor team of college students in vocational colleges, this paper uses the binary Logistic analysis method to conduct an empirical study on the factors that affect the team construction of innovation and entrepreneurship mentors in vocational college students. Through the empirical analysis, it is found that the educational level of college students, the guidance level and knowledge level of the tutor team are the main factors affecting the innovation and entrepreneurship ability of college students. In view of the above problems, this paper puts forward the corresponding countermeasures and suggestions from the aspects of improving the quality and level of tutors, expanding international cooperation, expanding the scope of internship, improving entrepreneurship education and strengthening the support in school.

1. Introduction

In higher vocational college education, how to establish a creative entrepreneurial guidance team is the key to cultivating high-quality and high-level talents [1]. We will improve teacher quality and competence, strengthen cooperation with external students, increase internship opportunities, and improve the innovation and entrepreneurship curriculum, and strengthen the support and investment of schools, all of which can create a better environment for innovation and entrepreneurship education for students, so as to promote the development of innovation and entrepreneurship

education in higher vocational colleges [2-3].

In the past research, many scholars have carried out in-depth discussion and research on the construction of innovation and entrepreneurship mentor team in vocational colleges. They pay attention to issues such as the quality and ability of the tutor team, the interaction between tutors and students, the curriculum of innovation and entrepreneurship, and the support and investment of schools. The results of Stelter R's research showed that through mentor training, establishing an effective STEM mentoring relationship could effectively improve students' innovative and entrepreneurial ability and quality [4]. In addition, Baker proposed that mentoring team building could be enhanced by establishing a role of coach, mentor, and sponsor [5]. However, although some studies have explored these issues, there are relatively few studies on the construction of innovation and entrepreneurship mentor teams in vocational colleges under the background of the "Double High Program".

Based on this, this project plans to use the binary Logistic analysis method to deeply analyze the influencing factors of team building. Binary Logistic regression is a common mathematical statistical method, which can be used to explore the causal relationship between the binary logical variables and to predict the binary logical variables. Therefore, this paper will theoretically explore many potential factors in the construction process of innovation and entrepreneurship instructors in higher vocational colleges, and put forward corresponding improvement strategies and suggestions on this basis.

2. Team Building of Innovation and Entrepreneurship Mentors in Vocational Colleges

2.1. Mentor Team Composition

The tutor team is generally composed of senior people with rich practical experience and professional knowledge, and has excellent achievements and good reputation in various professional fields. These mentors can be successful entrepreneurs, industry experts, investors and scholars in related fields. The composition of the tutor team should be diversified to meet the needs and interests of different students [6-7]. Team members may come from different industries, including technology, business, marketing, human resources, etc. The diversified tutor team can provide all-round guidance and support for college students, and help college students overcome the challenges of innovation and entrepreneurship [8]. The size and structure of the tutor team should also be well planned. The size of the team should be able to meet the needs of the students. While ensuring the interaction between tutors and students and personalized guidance, it is also necessary to ensure that the resources and capabilities of the team can cover more students. The team structure can be composed of main tutors, assistant tutors, and expert consultants in specific fields, working together to provide students with all-round support and guidance [9-10].

2.2. The Role and Influence of the Innovation and Entrepreneurship Mentor Team

Tutor support for students, helps students clarify their entrepreneurial ideas, formulates innovative and entrepreneurial plans, and provides suggestions and solutions in practice [11-12]. The tutor team will also share their experience and knowledge with the students, help them overcome difficulties and challenges, and improve their success rate of innovation and entrepreneurship [13]. At the same time, the college also cooperates with universities, research institutes, and enterprises to jointly promote the incubation and development of innovation and entrepreneurship projects in universities [14]. The mentor team helps students transform innovative and entrepreneurial projects into practical business opportunities by providing them with support in terms of resources, networking, and industry connections [15]. Using the power of role models and

personal experience to stimulate students' entrepreneurial passion and courage, and guide them to establish correct values of innovation and entrepreneurship, including daring to take risks, continuous learning, teamwork, and social responsibility [16-17]. The innovation and entrepreneurship mentor team helps students build innovation and entrepreneurship networks and communities through close interaction and cooperation with students [18]. The mentor team can provide opportunities for students to connect and communicate with industry experts, investors, entrepreneurs, etc., and promote the interaction and cooperation between students and all resources and talents in the innovation and entrepreneurship ecosystem [19-20].

3. Analysis of Influencing Factors of Team Building of Innovation and Entrepreneurship Mentors in Vocational Colleges

3.1. Description of Influencing Factors

This paper analyzes the influencing factors through three aspects; Table 1 is the influencing factors.

Table 1: Influencing factors and assignment instructions

Facet	Influencing factor	Assignment
School	The school into	1=80-99; 2=100-119; 3=120-139
	School system	1=Nonsupport; 2=Compare support; 3=Very supportive
	Education platform	1=Low; 2=Middle; 3=High
Tutor	Mentor ability	1=Low; 2=Middle; 3=High
	Industry cooperation	1=Very little cooperation; 2=Occasionally cooperate; 3=Clasp
	Practice opportunity	1=Very few to provide; 2=Often provide
Student	Student needs	1=Low; 2=Middle; 3=High
	Student enthusiasm	1=Low; 2=Middle; 3=High
	Student knowledge level	1=Low; 2=Middle; 3=High

Through the data collection of the above factors, we can from the school, teachers and students, the influence of the factors of a comprehensive understanding, and put forward the relevant strategies and measures, and improve the quality and effect of mentor team construction.

3.2. Binary Logistic Analysis

In this paper, we decided to use binary Logistic model for analysis. In this model, the dependent variable is set as Y, a value of 1 means it has an impact on the mentor team building, and a value of 0 means it has no effect on the mentor team building. Multiple independent variables such as school investment, system, education platform, tutor ability, industry cooperation, practical opportunities, student demand, enthusiasm and student knowledge level are recorded as $X_1, X_2, X_3, \dots, X_n$, and the conditional probability of successful tutor team building is set to P, then the calculation formula of P for:

$$P(Y = \frac{1}{X}) = P_i \quad (1)$$

(1-P) represents the probability of mentor team building failure. The probability ratio of the two

occurrences is the event occurrence ratio, and its formula is:

$$\frac{P_i}{1 - P_i} \quad (2)$$

3.3. Data Collection

This paper uses the method of questionnaire survey to collect data. Evaluating the quality and ability of the tutor team, including the work experience, expertise and skills of the tutor team in innovation and entrepreneurship, as well as the work effectiveness of guiding students. At the same time, understanding the status of cooperation between the mentor team and the industry, whether it has established cooperative relations with enterprises, entrepreneurs, and related institutions, and whether it has provided students with internship opportunities. The data of schools, tutors and students collected in this paper are shown in Figure 1.

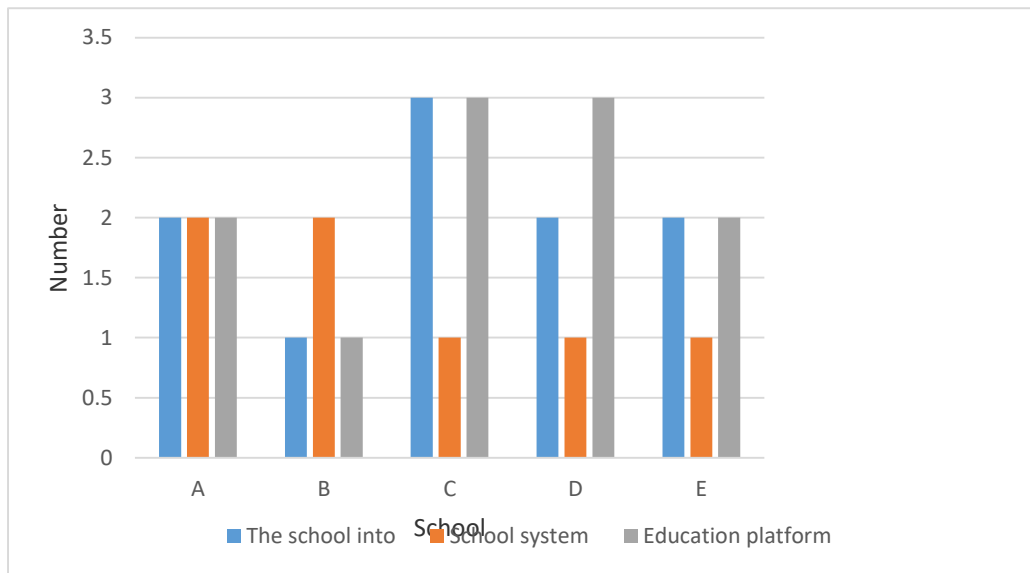


Figure 1: School data

As can be seen from Figure 1, the school system is deficient. The lack of school investment may limit the team building of innovation and entrepreneurship mentors, thus affecting their effectiveness in providing guidance and support and cultivating innovation and entrepreneurship awareness and capabilities. Figure 1 shows that the provision of educational platforms is relatively good. This means that the school has achieved certain achievements in providing educational platforms, resources and tools. A good education platform can provide the necessary support and convenience for the innovation and entrepreneurship mentor team, and promote their activities and exchanges in the innovation and entrepreneurship ecosystem.

According to the results of Figure 1, the school system is lacking, and the school investment is not enough, but the education platform is relatively good. Therefore, this paper studies the construction of teachers in higher vocational colleges from both theory and practice. On this basis, a statistical analysis was performed. The tutor data are shown in Figure 2.

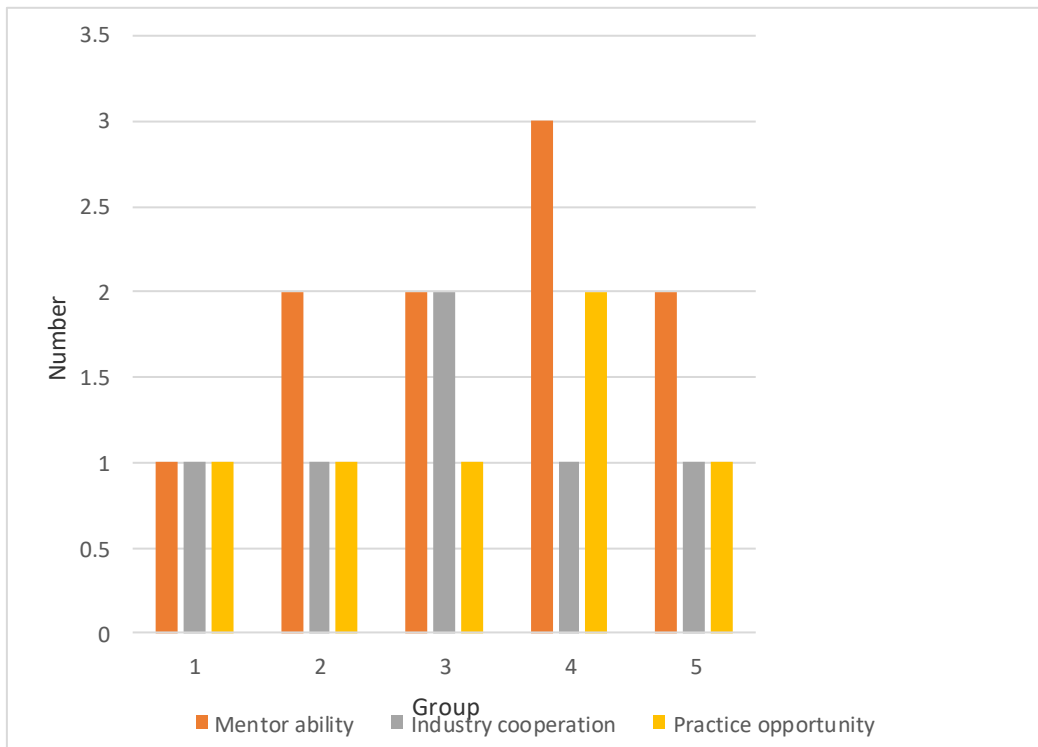


Figure 2: Tutor data

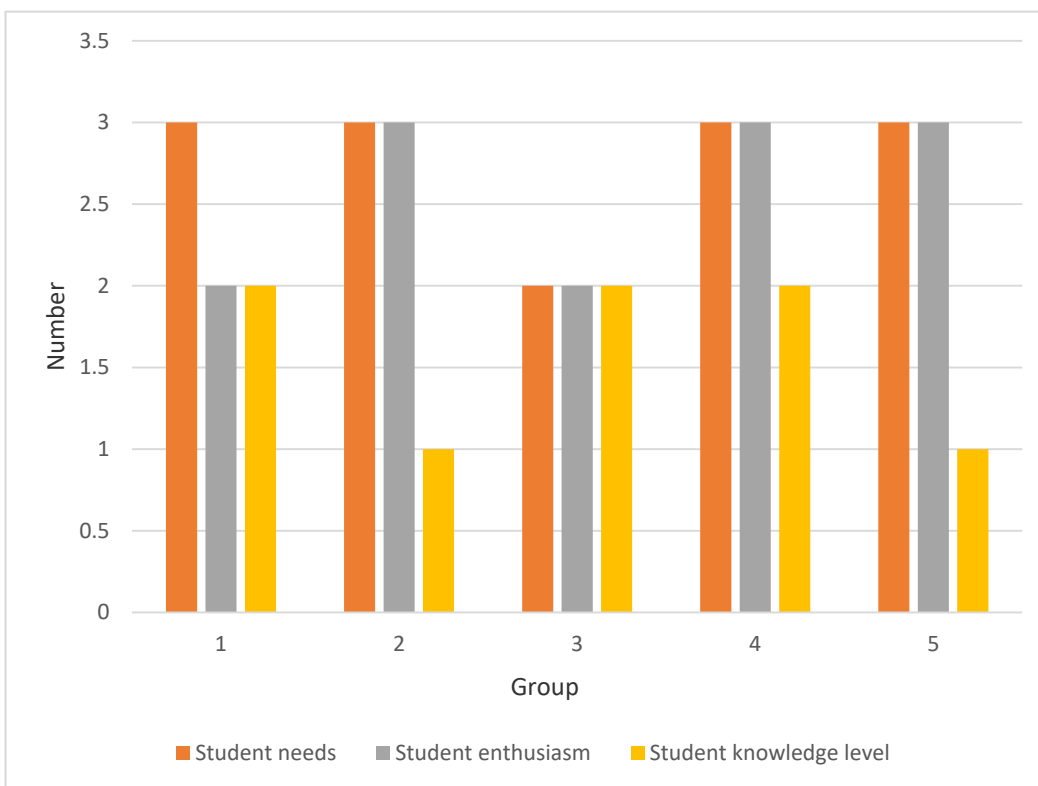


Figure 3: Student data

Figure 2 shows that the degree of collaboration between mentors and others is relatively low. The cooperation between the innovation and entrepreneurship mentor team and industry, enterprises

and other institutions can provide students with broader practical opportunities and resource support. This kind of cooperation can provide students with practical projects and practical experience to enhance their innovation and entrepreneurship capabilities. Figure 2 shows that there are large gaps in practice. The innovation and entrepreneurship mentor team should actively organize students to participate in activities so as to provide opportunities for practice and practical operation. According to the results in Figure 2, the overall ability of the tutor is still lacking, the degree of cooperation between the tutor and others is low, and there is a big deficiency in practice. The data collected on the student side is shown in Figure 3.

As can be seen from Figure 3, college students have high requirements for the team of innovation and entrepreneurship mentors. They have strong interests and hobbies, but their knowledge level is relatively low. On this basis, bivariate Logistic regression analysis was further used to investigate the influence degree and statistical significance of the above factors on the construction of the entrepreneurial mentor team. Through this study, we can better understand the actual situation of college students; better cultivate their interests and hobbies.

4. Countermeasures for Team Building of Innovation and Entrepreneurship Mentors in Vocational Colleges

4.1. Improving Innovation and Entrepreneurship Courses

Schools should include innovative thinking, entrepreneurship management, marketing and other contents to meet students' needs for innovation and entrepreneurship knowledge. At the same time, practical project courses can be introduced to enable students to learn and apply innovative and entrepreneurial skills in practice. Schools should set up creative thinking training courses to cultivate students' openness, flexibility and interdisciplinary nature. By stimulating students' creative ability and imagination, students can have novel ideas and problem-solving ideas. Opening a business management course including enterprise planning, risk management, resource integration, enterprise management and other links. On this basis, through the combination of theory and demonstration, the students can realize the opportunities and challenges faced by the development of the enterprise, and on this basis, initially master the basic theory and skills of enterprise management. This course aims to inform students about the needs of the market, the competitive environment of the market, and the marketing strategy. College students should learn to do market research, make marketing plans, and establish a brand image, so as to better promote their products or services in the process of enterprise operation. The practical project courses are introduced, so that students can learn and apply the knowledge and skills in the practical innovation and entrepreneurship projects. The course content includes enterprises, social organizations, school incubation centers and other forms to cultivate students' innovation and entrepreneurship ability and problem-solving ability. Tutor guidance: senior tutors will guide the students, and give feedback to the students' internship programs. The instructor communicated his entrepreneurial experience with the students, helped the students to clarify their ideas, find out the possible problems, and put forward countermeasures and suggestions for the students. Through the improvement of innovation and entrepreneurship courses, we can provide students with a full range of innovation and entrepreneurship knowledge and skills training, so that they can be more confident and successful in the future entrepreneurship.

4.2. Establishing an Interactive Platform for Tutors and Students

Considering that the students in Figure 1 have high interests and hobbies, the school can create a tutor-student interaction platform to promote communication and cooperation between tutors and

students. This platform can provide mentor guidance, project cooperation, entrepreneurial resource sharing and other functions, providing students with more opportunities to interact with mentors and stimulate their enthusiasm for innovation and entrepreneurship. This platform can provide forums, chat rooms, blogs and other functions to facilitate the instant communication and information sharing between teachers and students. A tutor guidance section can be set up on the platform, where students can ask questions to the tutor and seek guidance and opinions. The instructor guides the students out of the difficulties by answering the questions and putting forward the guidance opinions. At the same time, the platform also has the role of "project collaboration", so that university teachers and students to carry out "project collaboration". In this platform, students can publish their own research plan and seek help from their instructors, who can also publish their own research plan and invite students to participate in the research plan. The platform can set up a resource sharing section, allowing teachers and students to share information, cases and tools related to entrepreneurship. In this way, it not only can broaden the horizon of students, but also can timely grasp the information of enterprise development, grasp the information of enterprise development. The platform can become a platform to organize and promote offline activities. Schools can regularly organize offline communication activities between tutors and students, such as entrepreneurship salons, tutor lectures, etc., so as to better promote the interaction and cooperation between tutors and students. The platform can promote the close connection between university teachers and students, enhance the teaching effectiveness of teachers, and conducive to training innovative and entrepreneurial talents in colleges and universities.

4.3. Strengthening Students' Practical Opportunities

In view of the relatively lack of knowledge level of students in Figure 3, schools can provide more practical opportunities through the "Double High Program". For example, cooperating with the industry to carry out internship projects, organize entrepreneurship competitions, hold innovation and entrepreneurship lectures, etc., so that students can improve their knowledge and skills in practice.

5. Conclusion

Through the binary logistic regression analysis method, the influencing factors of team building are deeply analyzed. The research results show that the quality and ability of the tutor team, the cooperation between the tutors, the provision of internship opportunities, the improvement of the innovation and entrepreneurship curriculum system, and the support and investment of the school all have an important influence on them. Improving the quality and ability of teachers is an important link in the construction of teachers. By improving the quality and ability of the mentor team, strengthening the cooperation with the mentor, increasing the practical opportunities, improving the innovation and entrepreneurship courses, and strengthening the support and investment of the school, the construction and development of the innovation and entrepreneurship mentor team in vocational colleges will be promoted, so as to provide students with better innovation and entrepreneurship education and guidance.

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References

- [1] Sarabipour S, Hainer S J, Arslan F N, et al. Building and sustaining mentor interactions as a mentee. *The FEBS journal*, 2022, 289(6): 1374-1384.
- [2] McMullin M, Dilger B. Constructive distributed work: An integrated approach to sustainable collaboration and research for distributed teams. *Journal of Business and Technical Communication*, 2021, 35(4): 469-495.
- [3] Blake-Beard S, Shapiro M, Ingols C. A model for strengthening mentors: frames and practices. *International Journal of Environmental Research and Public Health*, 2021, 18(12): 6465-6466.
- [4] Stelter R L, Kupersmidt J B, Stump K N. Establishing effective STEM mentoring relationships through mentor training. *Annals of the New York Academy of Sciences*, 2021, 1483(1): 224-243.
- [5] Baker E L, Hengelbrok H, Murphy S A, et al. Building a coaching culture—the roles of coaches, mentors, and sponsors. *Journal of Public Health Management and Practice*, 2021, 27(3): 325-328.
- [6] O'Connell C, McCauley J, Herbert L. Improvisation-Based Workshop to Build Empathy in Mentor-Mentee Relationships and Support Academic Equity. *Journal of Student Affairs Research and Practice*, 2022, 59(1): 87-100.
- [7] Lv M, Zhang H, Ge P, et al. Improving education for innovation and entrepreneurship in Chinese technical universities: A quest for building a sustainable framework. *Sustainability*, 2022, 14(2): 595-598.
- [8] Artis L, Bartel S. Filling the leadership pipeline: A qualitative study examining leadership development practices and challenges facing community college presidents in Illinois. *Community College Journal of Research and Practice*, 2021, 45(9): 674-686.
- [9] Marshall M, Dobbs-Oates J, Kunberger T, et al. The peer mentor experience: Benefits and challenges in undergraduate programs. *Mentoring & Tutoring: Partnership in Learning*, 2021, 29(1): 89-109.
- [10] Smit T, du Toit P H. Exploring the pre-service teacher mentoring context: The construction of self-regulated professionalism short courses. *South African Journal of Education*, 2021, 41(2): 1-13.
- [11] Brown E M, Grothaus T. Interracial trust between black doctoral student protégés and white mentors. *International Journal of Multicultural Education*, 2021, 23(2): 70-87.
- [12] Anthony S G, Antony J. A leadership maturity model for implementing Six Sigma in academic institutions—using case studies to build theory. *International Journal of Lean Six Sigma*, 2021, 12(3): 675-692.
- [13] Mondisa J L, Adams R S. A learning partnerships perspective of how mentors help protégés develop self-authorship. *Journal of Diversity in Higher Education*, 2022, 15(3): 337-338.
- [14] Kim T Y, Liden R C, Liu Z, et al. The interplay of leader–member exchange and peer mentoring in teams on team performance via team potency. *Journal of Organizational Behavior*, 2022, 43(5): 932-945.
- [15] Garcia-Melgar A, East J, Meyers N. Peer assisted academic support: a comparison of mentors' and mentees' experiences of a drop-in programme. *Journal of Further and Higher Education*, 2021, 45(9): 1163-1176.
- [16] Mullen C A, Klimaitis C C. Defining mentoring: a literature review of issues, types, and applications. *Annals of the New York Academy of Sciences*, 2021, 1483(1): 19-35.
- [17] Stelter R L, Kupersmidt J B, Stump K N. Establishing effective STEM mentoring relationships through mentor training. *Annals of the New York Academy of Sciences*, 2021, 1483(1): 224-243.
- [18] Hu Z, Li J, Kwan H K. The effects of negative mentoring experiences on mentor creativity: The roles of mentor ego depletion and traditionality. *Human Resource Management*, 2022, 61(1): 39-54.
- [19] Subotnik R F, Olszewski-Kubilius P, Khalid M, et al. A developmental view of mentoring talented students in academic and nonacademic domains. *Annals of the New York Academy of Sciences*, 2021, 1483(1): 199-207.
- [20] Love H B, Cross J E, Fosdick B, et al. Interpersonal relationships drive successful team science: an exemplary case-based study. *Humanities and Social Sciences Communications*, 2021, 8(1): 1-10.