Exploring the Structure of Students’ Innovative Ability in Higher Vocational Colleges—Taking Human Resource Management Major as an Example

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Abstract. The improvement and improvement of college students' innovation ability is conducive to the improvement of their employment quality. Based on the analysis of relevant research on the structure of college students' innovative ability, a questionnaire survey method was adopted to study the structure of college students' innovative ability. Taking the human resources management major as an example, seven factors were extracted from the needs of college teachers and students, as well as from the perspective of managers. Dimensions, expounding the significance of research on the structure of college students' innovative abilities.

1 Introduction

The economist Schumpeter formally introduced "innovation" as an academic concept in his 1912 Theory of Economic Development. According to him, "innovation" means to introduce "new combinations" into the production system, and the ability to realize new combinations is the ability to innovate. With the development of the times, "innovation" as a proper noun has been expanded from the original field of economics to various fields such as society, science and technology, industry, etc., but its core connotation is still the same and has not changed [1]. At the same time, in addition to the novelty of the process, it also has a very important value in the economy, that is, many scholars put forward the "results effect" [2].

At present, many students in private higher vocational colleges and universities generally lack innovative thinking and practical skills, and students have less contact with the industry, limiting their opportunities to develop innovative skills in practice. At the school level, there is also a lack of innovative environments and platforms, all of which can lead to graduates being unable to adapt to the social requirements for their innovativeness when they face employment.

In the current context of employment and entrepreneurship, the innovation ability of university students in Guangdong, Hong Kong and Macao Greater Bay Area, and putting forward appropriate suggestions, this paper is conducive to the targeted cultivation of innovation ability of college students in the informative institutions in the Greater Bay Area, and at the same time, it enhances the employment quality of fresh graduates, as well as improves the quality of students' entrepreneurial endeavors after graduation, and achieves the goal of allowing students to adapt to the new working environment smoothly [4].

2 Research on the internal structure of college students’ innovative ability

From the research of foreign scholars on the connotation of innovation, it is found that foreign scholars' understanding of innovation capability focuses on the ability to transform innovative ideas into innovative practical behavior. Most scholars' research on innovation ability is aimed at technological innovation. However, there are also a few scholars whose research focuses on the study of students' innovation ability in the field of education. The systematic research on innovation ability in China began in the field of education; at the beginning of the 20th century, Mr. Tao Xingzhi, a famous educator, boldly explored the theory of creation education and put forward the idea of "children's education of creation". After the reform and opening up, scholars in the science and technology sector firstly proposed that the innovation ability in science and technology should be studied, i.e. the cultivation of innovation ability in the sense of engineering, but a few scholars began to propose that educators must pay attention to cultivating the creativity of students, enhancing the consciousness of
innovation, and fostering the ability to innovate[5]. Zhao Qingmin [6], Fan Lan [7] and other domestic scholars proposed that innovation ability is the ability to create a new situation in practical work, and innovation ability contains two aspects: innate and acquired, innovation ability is a kind of thinking and innovation ability, a kind of comprehensive ability centered on intellect, and a kind of strong social practical ability [8]. Innovative ability is the ability to utilize knowledge and theories in various practical fields, and constantly provide new ideas, new theories, new methods and new inventions with economic, social and ecological values[9].

Therefore, the research of this paper on the structure of innovation ability of college students can help to change the current education concept and teaching mode, so that higher vocational colleges and universities can improve the situation of emphasizing skills rather than quality. However, if we want to improve the overall innovation and creativity of college students, we need the guidance of the government on macro policies and the improvement of the management system and measures at the school level, in addition to the efforts of the students themselves [10].

3 Analysis on the structure of college students’ innovative ability

Through the previous research and analysis of relevant literature, we will design the structure of college students' innovative ability. In the follow-up, we will use a more scientific method, combining empirical and case-based investigation methods, to explore the structure of college students' innovative ability, and explore and discover the most representative The purpose is to improve the innovative ability index. At the same time, during the research process, we will also focus on conducting in-depth research based on the actual situation of human resource management graduates in the surveyed colleges. Specifically, the discussion will be carried out from the following aspects [11].

Firstly, from the perspective of college students, in-depth study of the internal structure of students' innovative abilities is crucial for students' career planning, employment, entrepreneurship and other aspects of development. In the current highly competitive job market, it is difficult to meet the demand with professional knowledge alone. College students should plan their careers in advance and focus on cultivating innovative abilities to stand out in the highly competitive employment environment. A clear innovative ability structure provides a direction for improving goals, allowing students to develop in a targeted manner.

Secondly, from the perspective of higher vocational schools, studying the innovative ability structure of college students provides guidance for the education and teaching reform of higher vocational schools. The current employment and entrepreneurship education focuses on interview skills and coping abilities, but does not fully cultivate students' core skills such as problem solving, emotional regulation, social adaptation and cross-cultural communication. An in-depth exploration of the concept and structure of innovation capabilities will help clarify its essence and provide direction for the reform of universities [12].

Finally, from the perspective of government management, it helps to establish a policy environment that prompts colleges and universities to change the focus of their education so as to enhance the comprehensive quality of students. Ensuring that the policy is centered on innovation ability will help to solve the problems of poor social adaptability and insufficient innovation spirit, and improve the employment competitiveness of college students [13].

4. Analysis of research results and talent cultivation initiatives

In the specific research process, our approach is as follows:

(1) Adopting the expert interview method, we interviewed the government, university-enterprise cooperative enterprises, industry associations and university administrators and teachers in Guangdong, Hong Kong and Macao Greater Bay Area, so as to gain an in-depth understanding of the insights of the four parties, namely, government, enterprise, industry and university, on the connotations of the innovation ability of college students.

(2) Adopting the literature collection method, articles on topics related to the study of students' innovation ability are collected from databases such as Knowledge.com and Wanfang to summarize 10-20 key dimensions for evaluating college students' innovation ability. At a later stage, based on these dimensions, through the design of questionnaires with diversified choices such as single-option and multiple-option, the research was carried out in three colleges and universities around the Guangdong-Hong Kong-Macao Greater Bay Area, and the research targets were decomposed into three groups: current college students, current teachers and experts inside and outside the university, and questionnaire surveys were carried out to explore the structure of college students' innovation ability.

In the process of implementing the research, we collectively administered the survey in classes, collectively administered the survey during teachers' meetings, and collectively administered the survey to external respondents through online surveys. The total number of valid questionnaires obtained through the 3-month research was 1701, of which 1001 were from current college students, 520 were from teachers, and 180 were from graduates. Meanwhile, the results of this survey were statistically analyzed based on the multiple response analysis method using analytical tools and instruments such as SPPS. The survey dimensions include 20 aspects: problem solving ability, creativity, self-adjustment, imagination, independent thinking, emotional regulation, learning ability, goal-setting, initiative, self-control, frustration tolerance, competitiveness, self-awareness, innovativeness, social
adaptation, reflective thinking, self-confidence, teamwork ability, cross-cultural communication ability, and interpersonal skills.

From the results of the survey, data from 1,001 current college students indicate that creativity is the most important innovation ability, accounting for 93.51%; followed by innovative spirit, accounting for 87.81%; and imagination, accounting for 83.02%. This is followed by social adaptation at 79.72%, independent thinking at 76.72%, teamwork at 71.63%, initiative at 70.43%, intercultural communication at 66.53%, learning ability at 65.63%, emotional regulation at 62.64%, and all other dimensions at less than 50%. From the results, creativity is considered the most important dimension of innovation ability by college students.

Data from 520 highly effective teachers show that creativity is the most important innovative ability, with 90.38% choosing this, 84.13% choosing initiative, 81.73% choosing innovation, then in order: intercultural communication ability, social adaptation, problem solving ability, goal setting, emotional regulation, and interpersonal skills at 62.50%, and competitive awareness at 60.10%. From the results, creativity is considered as the most important dimension of innovation ability by college teachers. There is a slight difference in the views about independent thinking and initiative power, from the students' point of view, they focus more on teamwork ability, which is 6.3 percentage points higher compared to study ability. From the teachers' point of view, students' initiative power is much higher in the innovation competence than in the independent thinking competence.

Data from 180 off-campus experts show that creativity is the most important innovation ability, with 91.67% choosing this, 86.11% choosing self-control, 83.33% choosing innovative spirit, and 83.33% choosing problem-solving ability. Followed by: social adaptation accounting for 72.22%, initiative accounting for 69.44%, emotional regulation ability accounting for 66.76%, frustration tolerance accounting for 63.89%, self-understanding accounting for 63.89%, and cross-cultural communication ability accounting for 61.11%. From the perspective of outside experts, in addition to creativity and innovative spirit, which are unanimously recognized by college students and college teachers, self-control, problem-solving ability and innovation ability are also very important in innovation ability.

Judging from the overall survey results, 92.36% of the respondents chose creativity, 85.48% of the respondents chose innovative spirit, and 83.39% of the respondents chose problem-solving ability, followed by social adaptation, self-control, and independent thinking. Initiative, cross-cultural communication skills and imagination.

Using the research methods in other literature, taking 60% as the typical value and setting it as the cut-off point, the selection results are analyzed, and the survey group is used as the base. If the proportion of two different groups choosing a certain dimension exceeds 60%, then it can be considered that this dimension is a key component of college students' innovative ability. Based on this standard, it is initially believed that the innovative ability of college students mainly includes seven aspects: problem-solving ability, creativity, emotional regulation ability, initiative, innovative spirit, social adaptation and cross-cultural communication ability.

In the aspect of double creation, our school will combine the above analysis results, for the cultivation of students' innovation ability, carry out reform and construction by setting up platforms, introducing projects, exhibiting skills, and emphasising practical training, etc. The main construction results in recent years are reflected in the following aspects:

1. Building a platform for entrepreneurial skills training and introducing a number of training programmes. So far, it has hosted 268 sessions of SYB entrepreneurship training for college students, organised 7,569 students to participate, with 7,237 people passing and obtaining certificates, and the pass rate is 95.6%; it has hosted 1 session of SYB entrepreneurship training for social trainees, organised 26 social personnel to participate, with 22 people passing and obtaining certificates, and the pass rate is 84.6%; and it has hosted 1 session of SYB entrepreneurship training for instructors, organised 30 social personnel to participate, with 29 people passing and obtaining certificates, and the pass rate is 84.6%. One SYB entrepreneurship training instructor training course was organised for 30 social workers, 29 of whom passed and were certified, a pass rate of 96.7 per cent.

2. Providing a platform for skills demonstration and students' participation in innovation and entrepreneurship competitions. The school adheres to the principle of promoting teaching, learning and creation through competitions, and organises the Innovation Idea Competition, Entrepreneurship Competition and Skills Competition at school level every year, encouraging students of all school segments to actively participate in these competitions. The 7th "Innovation Idea" Competition attracted 750 projects, with 3,000 students participating, and 35 groups of excellent works were shortlisted for the finals; for 7 consecutive years, we held the school-level competition of China's "Internet+" College Students' Innovation and Entrepreneurship Competition, with 30,000 students participating and a total of 5,000 students being selected. For seven consecutive years, the school-level competition of China "Internet+" Student Innovation and Entrepreneurship Competition has been held, with more than 30,000 students participating in the competition, and five projects were selected to represent the school to participate in the provincial competition.

3. Build a platform for innovation and entrepreneurship practice and incubation, and students are actively involved in innovation and entrepreneurship practice. The university has built an innovation and entrepreneurship practice and incubation base with a total area of 5,998 square metres, giving excellent student entrepreneurial teams subsidies for start-up funds, rent-free venues and other policy support. There are 216 student entrepreneurial teams, and about 1096 students are engaged in entrepreneurial practice. At present, there are 4 innovation and entrepreneurship bases jointly built...
by the university and enterprises, 4 incubation bases of the university level and 11 studios of the second-level colleges.

Through the above initiatives, all levels of our university closely focus on the real needs of innovation and entrepreneurship, take the integration of professional education and dual-creation education as a hand to achieve 100% coverage, so that students can receive dual-creation education and training in a comprehensive manner. Relying on the advantages of the school's enterprise main body to run the school, we have promoted the construction of the school's dual-creation education construction system framework in a diversified and coordinated manner, established a dual-creation practice platform, created a dual-creation atmosphere on campus, integrated innovation and entrepreneurship education into the whole process of talent cultivation, and built a dual-creation education system that integrates "competition, learning, teaching and creation", so that more than 80 per cent of the students will have their dual-creation ability improved when they graduate, while achieving a 100% coverage. By the time students graduate, more than 80% of them will have their dual-creation ability improved, and at the same time, 5% of the graduates will be able to achieve the goal of innovation and entrepreneurship.

5 Conclusion
In this paper, taking the human resource management major as an example to carry out research, analyzing today's society, innovative talent training has become a key factor in improving the competitiveness of colleges and universities, economic growth and social development, etc. College and university students are the key period in the development of innovation ability in their lives, and the level of innovation ability is an important indicator to measure the level of innovation of a country and a society, so the research of college and university student's innovation ability, targeted to cultivate, evaluate and improve the innovation ability of college and university students is an important value and significance to enhance the country's capability of independent innovation and core competitiveness.

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References