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Integration of Production and Education and Scientific and Technological Innovation of College Students

Xinge Xu

Shaanxi Public Scientific Literacy and College Students' Innovation and Entrepreneurship Science and Technology Innovation Research Center, Shaanxi International Business College, Xi'an, 71200, Shaanxi, China

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Abstract: The development model of industry-education integration has become the primary model of vocational college development, which has attracted the attention of students and teachers. Visiting research online college students vocational colleges, analyses university-enterprise cooperation enterprises, scientific research projects such as the influence degree of factors on the college students' science and technology innovation ability, and combined with the current various universities of finance and economics commerce class professional talent training plan, put forward based on the integration production and education under the background of college students' innovation ability training mode, and the corresponding teachers team construction and teaching reform mode.

1. Research Status at Home and Abroad

1.1. Research Background

In the era of technological development, employment has gradually become the focus of attention. Therefore, actively advocating "mass entrepreneurship and innovation" has become the mainstream direction, and innovation and entrepreneurship have become the focus. It is imperative to promote the deep integration of industry and education, which is not only the core issue of China's vocational education reform and development in the new era, especially in the "14th Five-Year Plan" period. It is also a strategic measure to promote the priority development of education, the development of talents, the development of industrial innovation, and the development of high-quality economy. Colleges and universities, as the training base of high-quality skills application talents, on the basis of promoting the integration of production and education, connect the innovation chain, industrial chain, talent chain and education chain, make the organic combination of school education and industrial development, and shoulder the task of cultivating students' innovation and entrepreneurship ability. Therefore, based on the talents training plan of finance and business majors in colleges and universities, the cultivation mode of college students' application innovation ability under the background of production-education integration,

as well as the corresponding teaching team construction and teaching reform mode are proposed. And adhere to the school-enterprise cooperation model of industry-education integration, to better help students' innovation and entrepreneurship ability training. From this point of view, based on the new development stage, it is of great significance to optimize the supply structure of vocational education, improve the pattern of vocational education and improve the system of vocational education to systematically explore the multiple backgrounds, rich meanings and feasible paths of the deep integration of industry and education in the new period. It provides strong support for further highlighting the value function of the integration of industry and education and promoting the integrated development of education and industry..

1.2. Research Status

In recent years, the integration of industry and education has gradually attracted attention. Through school-enterprise cooperation and collaborative innovation, students' innovation and entrepreneurship ability is cultivated and improved, so that students can better meet the needs of China's social and economic development on the basis of enhancing their own entrepreneurial ability and innovation consciousness [1]. Ye Luyan (2020), based on CiteSpace's bibliometrics and visualization analysis method, proposed policies and suggestions on talent training model, teaching staff construction, school-enterprise cooperation and development model of higher vocational colleges [2]. Shen Juan (2022) reviewed the policies related to the integration of industry and education, and finally promoted the integration of industry and education and school-enterprise integration of vocational education by integrating major Settings, integrating ideological and political courses, and strengthening student communication, so as to achieve the innovation and entrepreneurship ability of students [3]. Zhang Shumei, ZuoHongFen (2022) through the joint development between higher vocational colleges and characteristics of curriculum system, set up "four one" science and technology innovation practice platform, to build an innovative teachers, promote the course system, teaching content and teaching method reform, cultivate the students comprehensive accomplishment and team cooperation consciousness, mining the creative potential of students, It has improved innovation ability and scientific and technological R&D ability [4]. Cao Jing and Duan Pinjie (2022), based on the theoretical perspective of institutional logic, studied the adverse consequences of private enterprises' participation in the construction and cultivation of industry-education integrated enterprises and put forward corresponding countermeasures and suggestions [5]. Jin Junjie (2022) took the science and technology innovation association of universities and colleges as a case, discussed the methods to cultivate students' science and technology innovation ability and achieved good results, which provided theoretical and practical significance for the talent training model under the background of production-education integration [6]. Wei Chunyan (2022) constructed the industry-education integration ecological space by strengthening the top-level design, constructed the industry-education integration community of destiny by breaking the boundaries of the teaching field, and constructed the collaborative innovation platform to promote the industry-education integration and mutual growth, so as to form the industry-education integration ecosystem of new engineering and further deepen the industry-education integration of new engineering [7].Yang Changrong (2021) took the grassroots Party branch of Moutai University as the research object, and studied the specific embodiment of the effectiveness of grassroots Party branch in promoting the education mechanism of "product-education integration and collaborative innovation", so as to improve the quality of talent training and serve the economic and social development [8]. Yuan-yuan xu (2022) through the questionnaire survey and field interviews, vocational education W city in anhui province the fusion education practical problems, put forward to perfect the top-level design, strengthen the city as a

whole, strengthen policy supply, building the collaborative platform, docking industry demand, science set up the professional, we will deepen reform of the three religions and driving factor convergence "strategy [9]. Mi Wei, Lian Wu, Shi Tala, Wang Ju (2021) took preventive medicine major of Binzhou Medical College as an example, and proposed measures such as constructing curriculum system, expanding teaching staff, building practice base, and setting up incentive mechanism, so as to play the role of the second classroom in the cultivation of innovation ability of college students [10]. To sum up, the domestic scholars based on fusion education background, the research on college students' scientific and technological innovation, high heat, collaborative innovation research hotspot research from the relationship of cooperation between colleges and innovative ability to the relationship between fusion and innovation entrepreneurship education research, and practice teaching, cooperative innovation of concept and embrace, the depth of the research content and rich connotation.

2. Research on the Integration of Industry and Education and Scientific and Technological Innovation of College Students

2.1. Sample Selection

This paper mainly obtains the data through the questionnaire survey, the object of the survey is mainly the university students. We investigated and recovered a total of 50 questionnaires, deleted missing values and samples with obvious contradictions, and finally entered the study analysis of 41 valid samples. The valid questionnaire rate reached 82%. Boys accounted for 46.34% and girls accounted for 53.66%, indicating a reasonable distribution of men and women. In grade, freshmen account for 24.36%, sophomores account for 41.46%, and juniors account for 34.15%. The grade level selection of students is reasonable. The major categories of economics accounted for 29.27%, literature accounted for 34.15%, science accounted for 19.51%, and others accounted for 17.07%. The indicators selected by discipline classification were reasonable.

2.2. Variable Definition and Measurement

For the measurement of the integration of industry and education, this paper sets three question types: C1, the length of your internship (months) in the university-enterprise cooperation unit; C2, the number of practical courses your corporate tutor participated in; and C3, the number of horizontal projects you participated in during the period of school. For the measurement of scientific and technological innovation, this paper sets four items: K1 by participating in the activities of production-education integration, your sense of innovation has been improved; K2 by participating in the activities of production-education integration, your practice has been improved; K3 by participating in the activities of production-education integration, your psychological quality has been improved; K4 by participating in the activities of production-education integration, your teamwork ability has been improved. For the above questions, this paper uses a 5-level Likert scale to quantify these questions, in which 1= not agree, 2= not quite agree, 3= average, 4= relatively agree, and 5= fully agree. The higher the score, the stronger the scientific and technological innovation promoted through the integration of production and education

3. Reliability and Validity Test

In this paper, SPSS19.0 was used to test the reliability and validity of the production-education integration and scientific and technological innovation items. The results are is shown in Table 1.

Table 1: Reliability and validity test results of scientific literacy

	Question	Component	Cronbach's α	KMO	Cumulative %)(%)
Integration of production and education	C1	0.874	0.821	0.665	87.172
	C2	0.856			
	C3	0.861			
Scientific innovation	K1	0.732	0.749	0.662	82.743

For the integration of production and education and the innovation of science and technology, the analysis results showed that the Cronbach's α values were 0.821 and 0.749, respectively, indicating that the reliability of the scale was good.

The results of the observed variables of the integration of production and education showed that the value of KMO was 0.665, the total variation explained by the first principal component was 87.172%, and the corresponding weighting systems of the three measurement variables in the component matrix were 0.874, 0.856 and 0.861, respectively, indicating that the validity of the scale was ideal.

The results of the observed variables of scientific innovation showed that the value of KMO was 0.662, and the total variation explained by the first principal component was 82.743%. The corresponding weighting systems of the three measurement variables in the component matrix were 0.732, 0.811, 0.788 and 0.772, respectively, indicating that the validity of the scale was relatively ideal.

3.1. Regression Analysis

In this paper, the scientific and technological innovation of college students is taken as the dependent variable, the integration of production and education is taken as the independent variable, and gender, grade and major categories are taken as the control variables. The regression analysis is shown in Table 2.

Table 2: Regression analysis

model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.102	.107		-.958	.344
	The fusion of production and education	.988	.027	.988	37.075	.000
	gender	.035	.056	.017	.628	.534
	grade	.027	.038	.019	.721	.475
	Major categories:	.010	.024	.012	.416	.680

The sample data showed that the regression coefficient of industry-education integration on scientific innovation was 0.988 (P<0.1), and the significance of the index was high, indicating that the stronger the degree of students' participation in industry-education integration, the higher the improvement of students' scientific and technological innovation. Therefore, we should strengthen school-enterprise cooperation, enhance students' internship duration, and actively encourage students to participate in teachers' horizontal projects.

4. Study on the Countermeasures of Training College Students' Scientific and Technological Innovation Ability under the Integration of Production and Education

4.1. Enterprise Practice Base

Strengthen the construction of campus training base, improve students' ability of innovation and entrepreneurship, take students as the leading role, encourage students to establish enterprises during school, give full play to students' subjective initiative, and make full use of the two holidays by students themselves or the school organized students to participate in the project practice in off-campus cooperative enterprises; High quality training bases in and out of school play a vital role in the cultivation of scientific and technological ability of college students.

4.2. Vocational Skills Identification Station

In 2019, the Ministry of Education and other departments jointly issued the Pilot Plan on the Implementation of the "Educational Certificate + Certificates of Certain Vocational Skill Levels" System in Colleges and Universities, and launched the pilot work of the "Educational Certificate + Certificates of Certain Vocational Skill Levels" (1+X certificate for short) system. Therefore, students should not only obtain graduation certificates during the school, but also obtain certificates of various vocational skill levels. In the graduation practice and post-practice, we will continuously strengthen and improve the professional skills of students, so as to prepare the skills and access qualifications for future employment. At present, advanced training equipment has been established in vocational colleges, and the "1+X" certificate pilot has been built. The good implementation of the "1+X" certificate system in colleges and universities can not only improve the technical operation ability, but also lay a solid foundation for students' innovation and creation.

4.3. Campus Science and Innovation Center

Colleges and universities should actively set up the scientific innovation center for students on campus, open the experimental equipment without classes, increase the investment of funds, configure the professional facilities and equipment conditions needed for operation, and provide time, space and equipment guarantee for students' scientific and technological innovation. At the same time, the introduction of enterprise horizontal subject research, guide students to participate in scientific research work, training students' scientific research ability level. At the same time, it publicizes and promotes the concept of scientific research innovation of college students, gives lectures and training to students who are eager for scientific research knowledge and other personnel, creates a good atmosphere for academic research activities of college students, and guides the academic research innovation activities of college students to prosper.

5. Conclusions and Policy Implication

First of all ,The survey found that the more college students participated in school internships, the faster students' ability of science and technology innovation will be improved; Secondly, the more students participate in faculty projects during the period of school, the more their scientific research ability will be continuously improved; Third, we should actively organize students to participate in the training of scientific and technological innovation capabilities, training to develop their professionalism and innovation capabilities; Finally, deepen the reform of "teachers, teaching materials and teaching methods", insist on student-centered and career-oriented, give full play to the role of collaborative education of school-enterprise cooperation centers, and improve students' basic

theoretical knowledge and vocational literacy. Therefore, universities provide material and resource conditions for students' scientific and technological ability improvement, which is conducive to giving full play to students' initiative, constantly motivating their potential and improving their scientific and technological innovation ability..

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