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Research on Evaluation and Influencing Factors of Innovation Ability of Undergraduate Students Majoring in Economics

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Abstract

This template explains and demonstrates how to prepare your camera-ready paper for Trans Tech Publications. The best is to read these instructions and follow the outline of this text. Please make the page settings of your word processor to A4 format (21 x 29,7 cm or 8 x 11 inches); with the margins: bottom 1.5 cm (0.59 in) and top 3 cm (1.18 in), right/left margins must be 2 cm (0.78 in). This template explains and demonstrates how to prepare your camera-ready paper for Trans Tech Publications. The best is to read these instructions and follow the outline of this text. Please make the page settings of your word processor to A4 format (21 x 29,7 cm or 8 x 11 inches); with the margins: bottom 1.5 cm (0.59 in) and top 3 cm (1.18 in), right/left margins must be 2 cm (0.78 in). Based on 290 questionnaire survey data, this paper constructs an evaluation index system of innovation capability from three dimensions: innovative practical ability, innovative thinking ability and innovative learning ability, and adopts factor analysis and regression analysis to study the innovation capability and its influencing factors of undergraduate students majoring in economics. This paper finds that: (1) Innovative practical ability is the core element of innovation capability. The number of scientific research projects, the number of academic papers published and the proportion of innovation ability to individual ability are important factors that affect innovative practical ability. In the innovative thinking ability, logical thinking ability is the key factor that affects the innovative ability, while innovative learning ability has little influence on the innovative ability of undergraduates,but it is still an indispensable element in the innovative ability of students. (2) Among the influencing factors of innovation ability, students' comprehensive quality and grade have a significant positive impact on students' innovation ability. (3) Finally, the paper puts forward some policy suggestions to improve the innovation ability of undergraduates from the aspects of strengthening the teaching staff, optimizing the curriculum system and building a platform for practical activities.

Keywords

Economics; Innovation Ability; Influence Factor; Factor Analysis.

1. Research Background

We are in the era of high speed operation of knowledge economy, innovation as a core element of national development, plays an important role in this era. The report of the 19th National Congress of the CPC pointed out that innovation is the primary driving force for development. Strengthening the construction of the national innovation system and training a large number of high-level innovation teams are measures to speed up the building of an innovation-oriented country, and are higher requirements for economic development and scientific and

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technological innovation. In the report on the Work of the Government in 2017, it is required to accelerate the development of innovation, improve the innovation ability, and drive the development of economy and science and technology in the form of innovation and entrepreneurship. The development of economy and science and technology has increased the demand for innovative talents, and more attention has been paid to the cultivation of talents' innovation ability. Focusing on the cultivation of undergraduates' innovative ability is an indispensable step for building an innovative country. Colleges and universities are the cradle of cultivating high-level innovative talents, the source of innovation ability and innovation consciousness for economic and technological development, and the key factor for building an innovative country. In recent years, colleges and universities have paid more attention to the cultivation of innovative talents. College educators have conducted in-depth investigation and research on the cultivation of undergraduates' innovative ability from various aspects and all aspects, and implemented relevant improvement measures in the evaluation system of innovative ability. This paper takes Anhui University of Finance and Economics as an example, through the form of questionnaire survey in the school of economics, in-depth understanding of undergraduate innovation ability, research the cultivation plan of undergraduate students' innovation ability, and find that in the implementation of talent training plan, the school of economic has adopted a series of measures, such as the training system for young teachers' teaching work, measures for teaching quality control, measures for the administration of students' course assessment management, interim measures for students' subject competition awards and measures for the management of undergraduate academy level scientific research projects, and received good results. In the construction of the curriculum system, we pay attention to the cultivation of innovative ability and the development of students' personality, establish a flexible and open curriculum system, give students more space and environment for independent learning, and implement the principal position of students in the teaching process. Therefore, the paper discusses the evaluation system of undergraduate innovation ability and its influencing factors, which is the basic work for colleges and universities to cultivate innovative talents.It enables colleges and universities to have a deeper study on undergraduate innovation education, deepen the understanding of undergraduate innovation ability, and is beneficial to the college's research on students' innovation ability, and has a certain practical guiding significance for the growth of undergraduates, the management mechanism of the school and the development of the school, and has a very important theoretical and practical significance for the construction of an innovative country. Based on this, this paper conducts a questionnaire survey on the innovation ability of undergraduate students majoring in economics in the school of economics, analyzes the evaluation system and influencing factors of innovation ability of undergraduate students majoring in economics, and puts forward policy suggestions for the cultivation of innovative thinking of undergraduate students in Anhui University of Finance and Economics and the cultivation of innovative talents in colleges and universities from several aspects.

In the United States, Japan, France and other developed countries, innovative education has long been part of their educational philosophy, and cultivating undergraduates' innovative ability has long been their basic teaching. Han Yan (2000) [1] believed that France emphasizes the cultivation of undergraduates' innovative ability in terms of education quality and curriculum reform, and what is more prominent is the practical teaching scheme, in which teachers of each subject form a special steering group to propose subjects related to their respective discipline. Students can freely choose topics and carry out research activities under the guidance of the steering teacher. Li Jingshan (2003) [2] pointed out that Tokyo Institute of Technology in Japan, in terms of cultivating undergraduates' innovative ability, embodied the two aspects of education objectives and course design. It carried out special courses, lets students create by themselves, stimulates students' innovative thinking and spirit, prefers soft

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design in teaching methods, and encourages students to participate in various innovation competitions, which greatly exercise students' innovative ability. Cross P G et al. (2011) [3]believed that the problem-led and inquiry-based teaching method in the United States is a distinctive and pioneering strategy. It is a mode of raising questions, allowing students to think about relevant issues, collect information and conduct necessary research around the central theme, and then discuss together. It is not important to solve some problems or not. There is no answer, but the students are involved in collecting and sorting information, which is to cultivate their innovative practical ability. Chen Zhaohui et al. (2008) [4] analyzed the current situation and existing problems of college students' innovative ability through questionnaires, proposed the inevitability of the transformation from ‘passive’ to ‘active’ talent training mode, and believed that active practice is the core concept of innovative education. Ren Jia (2014) [5] profoundly revealed that the primary goal of education reform is to cultivate the innovative ability of college students, and thus proposed that strengthening the cultivation of innovative ability through diversified and multi-channels is of great help to the ability improvement of contemporary college students. Wang Xiaoling et al. (2016) [6] introduced the significance of the cultivation of innovation ability of economic and management undergraduates, and on the basis of analyzing the current situation of the cultivation of innovation ability of economic and management students, put forward policy suggestions such as innovative education concepts, teaching reform and effective incentive policies. Scholars have also studied the index system of innovation capability evaluation, most of which adopt a combination of qualitative and quantitative methods. Wei Li et al. (2013) [7] built an evaluation index system based on three main influencing factors, namely innovation basis, innovation spirit and innovation skills, to analyze the innovation ability of college students in the School of Geographic Sciences of Southwest University, and established a measurement model with analytic hierarchy process to make the evaluation more comprehensive and accurate. Zou Hao (2015) [8] divided the influencing factors of innovation ability into first-level indicators of thinking ability, learning ability, knowledge ability and scientific research ability as well as a series of second-level indicators. Based on the construction of the index system of college students' innovation ability, he used the gray relational theory to establish an evaluation model, and evaluated the innovation ability of college students. It is believed that divergent thinking, logical thinking and problem finding ability have great influence on college students, and also provide the basis for the cultivation of innovative talents in colleges and universities. From the perspective of innovation and entrepreneurship, Ju Zhanjie (2016) [9] discussed college students' innovation ability from the perspective of the current situation and existing problems in the cultivation of college students' innovation ability, and put forward policy suggestions on strengthening college students' scientific and technological activities, social practice activities and optimization of teaching mode. Li Junlong (2017) [10] constructed an evaluation index system analysis based on innovative consciousness, innovative thinking, innovative skills and innovative environment, and used the fuzzy comprehensive evaluation method for evaluation and analysis. The construction of the index system and the evaluation methods provided guidelines for colleges and universities to evaluate college students.

To sum up, scholars at home and abroad have conducted in-depth studies on the cultivation of innovative ability from the perspectives of education quality, teaching reform and innovative practice, analyzed and summarized the programs that need to be implemented in the cultivation of undergraduate innovation ability, colleges and universities should carry out corresponding teaching reform measures, and students should increase independent learning and innovative practice. As for the construction of the evaluation index system of undergraduate innovation ability, scholars mainly evaluate undergraduate innovation ability from the main indicators of learning ability, knowledge base, thinking ability and skills, while paying less attention to students' independent practice, which is an important factor affecting

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the learning innovation ability, which is also a breakthrough direction of this research. In view of this, this paper intends to expand the existing literature in the following aspects: First, the connotation of innovation capability and its index system construction. The innovation ability of economics undergraduates is evaluated from three dimensions: innovative learning ability, innovative practice ability and innovative thinking ability. Second, compared with the existing normative analysis literature, this paper adopts the empirical research method to evaluate the innovation ability of undergraduate students majoring in economics, which makes the research conclusions more objective. Third, in terms of data acquisition, the survey method is adopted to obtain the first-hand data of undergraduates' innovation ability, which has certain new ideas in data acquisition.

2. An Overview of Undergraduate Innovation Ability

2.1. Connotation of Innovation Ability

Lu Genshu (2008) [11] believed that innovation is a complex process, including the formation of new ideas, product design, production, marketing and a series of processes, is the process of new things and new knowledge creation and circulation. To determine and develop innovation, we need to negate conventional and traditional practices, break through habitual habits, and create new ideas, methods, technologies and knowledge. The characteristic of innovation is distinct, which needs to break through the convention, oppose the tradition and have certain risks. In the era of knowledge economy, we are required to have innovation ability and innovation consciousness, which is of great significance to ourselves and the society. In this era, innovation is an important part of national development, innovation ability is a symbol of national strength, and innovation ability is indispensable to a country, a nation and its people. Innovation ability is a kind of ability to analyze problems, solve problems and create new things. It can be divided into high, medium and low levels. It can be specifically divided into the ability to use research ability, create new theories and generate new knowledge. Ability to explore, analyze problems and draw new conclusions; The ability to use existing knowledge to solve problems creatively [12,13]. Undergraduate innovation ability refers to the ability of students to use existing knowledge system to solve problems in a unique, divergent thinking and creative way in an innovative activity, and to generate new ideas and new knowledge, emphasizing students' independent innovation. In addition, the innovation ability of college students is composed of innate intelligence level, acquired knowledge accumulation, innovative personality and innovative practice, among which innovative practice is the most important part. The content of students' imagination displayed through tools (languages) must be tested by practical activities. In terms of the cultivation of students' innovative ability, the school of economics of our university compresses the course teaching in the construction of the curriculum system to give students free imagination and free play, organically combines the basic content with the cultivation of skills in the curriculum setting, and encourages students to carry out social practice activities, which can stimulate students' innovative ability to a certain extent.

2.2. Characteristics of Innovation Ability

Undergraduates' innovative ability is characterized by initiative, practicality, collaboration and development. They take the initiative to learn new knowledge, participate in various scientific research activities, give full play to their own enthusiasm, apply what they have learned to practical problems, and creatively solve existing problems. Combined with the innovative performance of the students in the school of economics of our university, the characteristics of the students' innovative ability are analyzed:

ISSN: 2710-0170

(1) Initiative. Students should take the initiative to learn new knowledge, participate in various scientific research activities, give full play to their own enthusiasm. In college learning, teachers play a leading and guiding role, but also need students to actively study, the organic combination of the two can effectively stimulate students' innovation ability. Students take the initiative to participate in social practice activities and scientific research forums, which is inseparable from the cooperation with teachers and students.

(2) Practicality. Practice is the sole criterion for testing truth. Students' innovation ability is gradually cultivated in social practice activities. The cultivation of college students' innovation ability cannot be separated from practice, and its process and purpose are closely related to practice. Innovation is also the process of creative practice.

(3) Collaboration. Collaboration refers to the completion of a task by individuals not only by their own strength, but also by the cooperation of several people or teams. Colleges students' innovation ability is not only related to own knowledge accumulation, intelligence and scientific research ability, but also related to having a sense of team cooperation and spirit of cooperation.

(4) Development. The development nature of innovation capability means that innovation capability is in the process of constant evolution, affected by various factors, and is the manifestation of potential comprehensive capability. With the continuous growth of college students' body and mind, their innovation ability is also enhanced with the expansion of personal knowledge, the process of thinking mode and the continuous improvement of deeper innovative practice activities.

3. Evalution of Innovation Ability of Economics Undergraduates

3.1. Construction of Index System

Based on the connotation and characteristics of undergraduate innovation ability, the constituent elements of undergraduate innovation ability are complex and diverse. Therefore, the construction of index system should also reflect comprehensively from multiple aspects and dimensions. On the basis of comprehensiveness, ease of collection and maneuverability, referring to the above scholars' index system on the construction of college students' innovation ability, and according to the connotation of undergraduate students' innovation ability and the current cultivation of innovative talents in colleges and universities, the evaluation index system of college students' innovation ability adopts a qualitative and quantitative method. An evaluation index system of undergraduate innovation ability is constructed, which includes three first-level indexes, including innovative learning ability, innovative practice ability and innovative thinking ability, and 17 second-level indexes. Among them, innovative learning ability refers to the learning ability of learners who are not confined to books in the process of knowledge learning, make use of the existing knowledge system, make bold innovations, think independently, break through stereotypes, and actively show their new ideas, new technologies and new methods. Innovative learning consists of six secondary indexes: daily learning ability, attitude towards college students' innovation and entrepreneurship, research information retrieval ability, comprehensive knowledge updating ability, knowledge application ability and what kind of innovation and entrepreneurship activities they are more willing to participate in. Innovation practice ability is the core element of innovation activities and the way to reflect the truth standard. Innovation practice consists of four secondary indexes: the number of scientific research projects presided over, the proportion of innovation ability in personal ability, the number of scientific research projects seriously participated in and the number of academic papers published. Innovative thinking ability is the ability to break through the traditional way of thinking and think in a new way. Innovative thinking is represented by four secondary indexes: innovative emotion and

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consciousness, innovative imagination ability, logical thinking ability and critical thinking ability. As shown in Table 1 below:

Table 1. Index system synthesis table

First-level index	Second-level index
Innovative learning ability	Daily learning ability
	Attitude towards college students' innovation and entrepreneurship
	Research information retrieval ability
	Comprehensive knowledge updating ability
	Knowledge application ability
	Innovation and entrepreneurship activities that students are more willing to participate in
Innovative practical ability	Number of academic papers published
	Number of scientific research projects presided over
	Number of scientific research projects seriously participated
	Number of awards in discipline competitions at provincial level and above
	The proportion of innovation ability in college students' comprehensive ability
	Proportion of innovation ability in personal ability
	The share of GPA - based learning in college students' learning
Innovative thinking ability	Creative emotion and consciousness
	Creative imagination ability
	Logical thinking ability
	Critical thinking ability

3.2. Data and Methods

The paper takes the economics major of Anhui University of Finance and Economics as the research object and conducts a questionnaire survey among undergraduates. In this survey, 290 online questionnaires were sent out and 290 were actually collected, with a recovery rate of 100%. This survey follows the principle of random sampling, so the results of this survey have a certain representation. The innovation ability of undergraduates is composed of many factors, and the evaluation of innovation ability is based on the analysis of the quality level of these factors to reflect the innovation level of undergraduates comprehensively. There are many kinds of comprehensive evaluation methods including qualitative analysis, analytic hierarchy process and factor analysis. Factor analysis method is adopted in this paper, which is a multivariate statistical method. Based on the idea of dimension reduction, many variables with complex relationships are simplified into a few unrelated factor variables, so that these variables can explain the original information as much as possible.

3.3. Analysis of Evaluation Results

In order to understand the current situation of undergraduate innovation ability and the cultivation of innovative talents in colleges and universities, the school of economics of Anhui University of Finance and Economics conducted a questionnaire survey on undergraduate students majoring in economics and constructed an evaluation index system of undergraduate innovation ability. According to the construction of the above index system, through the questionnaire survey data of undergraduates in the school of economics of Anhui University of Finance and Economics, this paper uses statistical software spss17.0, firstly conducts KMO test and Bartlett's spherical test, and the KMO value obtained is 0.809, which is suitable for factor analysis. The factor analysis results are shown in Table 2:

ISSN: 2710-0170

Table 2. Total variance of interpretation

		Initial eigenvalues			Extract the sum of squares and load	
Composition	Sum	Variance	Accumulation	Sum	Variance	Accumulation
1	4.704	27.668%	27.668%	4.704	27.668%	27.668%
2	2.142	12.6%	40.268%	2.142	12.6%	40.268%
3	1.829	10.761%	51.029%	1.829	10.761%	51.029%
4	1.178	6.927%	57.956%	1.178	6.927%	57.956%
5	0.99	5.825%	63.781%			
Extraction method: principal component analysis.						

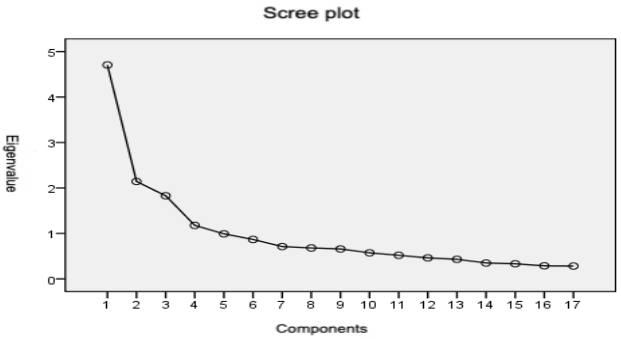

Figure 1. Scree plot

The initial characteristic values in Table 2 show that the first four characteristic values are greater than 1, and the cumulative contribution rate of Table 1 is 57.956, which can explain most of the information. Figure 1 also shows that the first four characteristic values are greater than 1. Therefore, the first four principal components are selected as the principal components, covering most of the information of the original variables.

Table 3. Common factor variance

	Beginning	Extract
Daily learning ability	1	0.476
Attitude towards college students' innovation and entrepreneurship	1	0.462
Research information retrieval ability	1	0.519
Comprehensive knowledge updating ability	1	0.63
Knowledge application ability	1	0.578
Innovation and entrepreneurship activities that students are more willing to participate in	1	0.129
Number of academic papers published	1	0.709
Number of scientific research projects presided over	1	0.725
Number of scientific research projects seriously participated	1	0.658
Number of awards in discipline competitions at provincial level and above	1	0.621
The proportion of innovation ability in college students' comprehensive ability	1	0.644
Proportion of innovation ability in personal ability	1	0.683
The share of GPA - based learning in college students' learning	1	0.588
Creative emotion and consciousness	1	0.515
Creative imagination ability	1	0.651
Logical thinking ability	1	0.662
Critical thinking ability	1	0.603
Extraction method: principal component analysis.		

ISSN: 2710-0170

The four principal components extracted here can be divided into the first principal component, the second principal component, the third principal component and the fourth principal component.

As can be seen from Table 3, the four main components are successively: the number of scientific research projects presided over, the number of academic papers published, the proportion of innovation ability in personal ability, and logical thinking ability. The first principal component, the second principal component and the third principal component all belong to the innovative practice part, and the fourth principal component belongs to the innovative thinking part. The number of scientific research projects presided over and the number of academic papers published can indirectly tell the size of students' innovation ability, which is the performance of students' innovation ability in scientific research projects and papers, and the application of theoretical knowledge learned by students to practice. It is suitable to be used as a factor to judge students' innovation ability. The proportion of innovation ability in individual ability can directly tell the size of students' innovation ability. Logical thinking ability is the concentrated embodiment of innovative thinking and the main evaluation factor of innovative ability. The evaluation results are analyzed from three dimensions as follows:

The result of innovation ability evaluation shows that innovation practice ability is the core part of innovation ability evaluation. Based on the analysis of the above index system construction, it is concluded that under the first-level index of innovation practice ability, three second-level indexes, the number of scientific research projects presided over, the number of academic papers published and the proportion of innovation ability in individual ability, are the main factors in the evaluation of innovation ability. The three main indicators reflect the innovative practical ability, which is mainly reflected in the scientific research papers. Any scientific research project needs innovation, and students need to read a large number of literature extensively, have a full understanding of the research project and the research done by domestic and foreign scholars, so as to arouse the enthusiasm of students and give play to their innovative ability. Thinking about the development trend of research projects and the latest research results, using existing knowledge and learning new knowledge to analyze and solve problems, which also lays a good foundation for innovation ability. The number of scientific research papers presided over, published and participated in all shows that students make active efforts in scientific research papers, create a good atmosphere for scientific research and study, and reflect what they have learned in scientific research papers. The proportion of innovation ability in personal ability is also a core indicator, and innovation is the first driving force for development. The proportion of innovation ability in personal ability indicates that innovation ability occupies an important position in personal ability, and the high proportion of innovation ability also indicates that innovation plays an important supporting role in a person's development and even the whole society.

The evaluation results of innovation ability show that logical thinking ability is the key factor affecting innovation thinking ability. The innovative thinking in this paper is reflected by four indicators: innovative emotion and consciousness, innovative imagination ability, logical thinking ability and critical thinking ability. Through factor analysis, it is concluded that logical thinking ability is also the main component, and as the fourth principal component, it is extremely important among the many indicators. Logical thinking ability refers to the ability to observe, compare, analyze, synthesize, abstract, summarize, judge and reason things, the ability to use scientific logical methods, accurately and methodically express their thinking process, and the ability to react indirectly from sensibility to rationality. Although other indicators do not account for the main factors, they exist in the whole innovative activities of students. Creative imagination ability has rich imagination, good at abstract knowledge through charts, audio and video, symbols and other concrete performance, so that abstract knowledge more

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vivid, easy to understand, faster solution to problems. Critical thinking ability requires students to dare to question and deny authority, and to think and solve problems with a critical attitude. The evaluation results show that the innovative learning ability has little impact on the innovation ability of undergraduates, but it is still an indispensable factor in the innovation ability of students. From daily learning, it can be seen whether students are self-learning, have the learning consciousness, the ability to dig new information and discover new problems. Scientific research information retrieval ability can judge students' ability to remove the rough and the essence of information, accurately and quickly collect information, which is preparation for innovative activities. Knowledge application ability can be seen how strong students' grasp of the knowledge they have learned. Whether the existing knowledge can be used to analyze problems, and whether the students can update their knowledge base in time based on the knowledge updating ability, so that they can constantly absorb new things. College students' innovative and entrepreneurial attitude and willingness to participate in innovative and entrepreneurial activities are the embodiment of college students' enthusiasm for innovative activities.

4. Analysis of Influencing Factors

In the construction of the index system of undergraduate innovation ability, this paper evaluates and analyzes the innovation ability of undergraduate students majoring in economics from three aspects: innovative learning ability, innovative practice ability and innovative thinking ability. Then, do the comprehensive quality ranking X1, grade X2 and major X3 have an impact on the innovation ability of undergraduates? In this paper, multiple linear regression analysis is conducted on the three factors of comprehensive quality ranking and major through spss17.0. Firstly, under the construction of the above indicators, the comprehensive score results obtained through factor analysis of 17 secondary indicators are taken as dependent variables, and comprehensive quality ranking, grade and major are taken as independent variables for regression analysis. The analysis results are shown in the following table 4:

Table 4. Regression analysis results

Variable	Regression coefficient	T-value	Sig
C	0.098	0.988	0.014
X1	-0.081	-2.272	0.024
X2	-0.011	-0.522	0.602
X3	0.046	2.781	0.006

From Table 4, the value of sig corresponding to F is less than 0.005 and less than 0.05, indicating that the whole regression equation is valuable and the regression effect is useful. Also, the value of sig corresponding to the factor ranking of comprehensive quality in Table 5 is less than 0.006 and t value is more than 2. It shows that the ranking of comprehensive quality has a significant impact on the innovation ability of economics undergraduates. The sig value corresponding to grade is 0.024 less than 0.05, and the t value is less than 2, indicating that grade has a great impact on the innovation ability of economics undergraduates, and the sig value of major is greater than 0.05. It shows that the major has no significant influence on the innovation ability of economics undergraduates. It can be seen that the achievement of comprehensive quality is crucial to the innovation ability. The achievement of comprehensive quality is the comprehensive performance of students' daily study, participation in various competitions, scientific research projects, community activities and innovation and entrepreneurship projects, and is one of the criteria to judge whether students are excellent or not. The higher

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the grade, the more solid the theoretical knowledge, the more professional knowledge accumulated, the more problems encountered in the learning process, enough experience accumulated, more thorough analysis of problems, so the grade plays an important role in the innovation ability.

5. Conclusion and Recommendations

Innovation is the first step to lead development, and building an innovation-oriented country is a major measure to increase independent innovation and promote economic development. College students are the future supporting force of the country. How to improve the innovation ability of undergraduates and how to cultivate the innovation ability of undergraduates in colleges and universities are the key issues of scholars at home and abroad. From three perspectives of innovative learning ability, innovative practice ability and innovative thinking ability, this paper constructs an evaluation index system of undergraduate innovation ability, analyzes the innovation ability of undergraduate students majoring in economics through the method of factor analysis, and uses the comprehensive score results of factor analysis to analyze the influencing factors of innovation ability by multiple regression. The main research conclusions and policy recommendations are as follows:

5.1. Conclusion

The evaluation results of innovation ability of undergraduate students majoring in economics are as follows: (1) Innovation practice ability is the core element of innovation ability, among which the main influencing factors are the number of scientific research projects presided over, the number of academic papers published and the proportion of innovation ability in personal ability. The number of published papers and the number of scientific research projects presided over can be seen the performance of innovation ability in papers and research projects. The ratio of innovation ability has a certain positive effect on a person and even the whole society. (2) Creative thinking ability also plays an important role in creative ability, and logical thinking is the most critical. Logical thinking plays an important role in innovation ability. Logical thinking is a person's ability to analyze things in a more organized way by using logical methods when analyzing problems. (3) Innovative learning ability has little impact on undergraduates' innovative ability, but it is still an indispensable element of students' innovative ability.

Among the influencing factors of innovation ability, students' comprehensive quality and grade have significant positive influence on students' innovation ability. The empirical research of this paper finds that the comprehensive quality ranking is a better way to judge the comprehensive performance of students, and it is a comprehensive ranking of students' daily learning, knowledge application and practical ability, which has a significant impact on the innovation ability. Compared with students in lower grades, senior students have received more education in professional knowledge and research papers, which has a certain impact on their innovation ability.

5.2. Recommendations

(1) Curriculum system optimization, teaching methods reform. Curriculum content is the basis to inspire students' innovation ability, promote the optimization of the curriculum system, strengthen the content of basic courses, expand the proportion of electives, meet the diversified needs of students, to improve the innovation ability to do a good job in the first step, from the improvement of students' knowledge structure, improve students' innovation ability, determine reasonable teaching content. In terms of teaching methods, teachers can adopt the sharing and practical teaching methods. The sharing teaching method is to create an interactive and relaxed learning atmosphere, encourage students to sort out the content related to the course by themselves, make PPT speeches in class, and teachers to make a final summary, so as

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to promote students' independent learning ability and knowledge expansion. Practical teaching means that teachers put their own scientific research projects into the classroom, encourage students to do research, promote students to sort out and collect literature, and promote the cultivation of students' scientific research papers and innovation ability.

(2) Establish innovative education and build a platform for practical activities. Encourage innovative education and change the original traditional education, which ignores that students are independent subjects with their own personalities and ideas. In the aspect of cultivating talents, colleges and universities should stimulate students' consciousness of independent learning, tap students' innovation potential and cultivate students' innovation ability. Undergraduates can directly participate in research papers, projects and other projects, introduce direct guidance from tutors in graduate education, carry out discussion-style learning, stimulate students' interest and cultivate their exploratory learning. Colleges and universities should also provide practical platforms for students, equipped with good teaching hardware, provide practical activities for students, let them apply classroom knowledge to practical life, strengthen the cooperation between practice and universities and enterprises, and school-enterprise cooperation should break through the traditional form of lectures, arrange practical learning in different positions according to different majors, and apply theory to practice.

(3) Strengthen the teaching staff and improve the innovative quality of teachers. Teachers play an important role in the cultivation of innovative talents. Strengthening the construction of teachers is the premise of the cultivation of innovative talents. Colleges and universities should conduct systematic training for teachers, strengthen teachers' innovative education and improve their innovative education quality. To cultivate teachers' educational concept with innovation spirit as the main body, guide teachers to change the traditional education mode, pay attention to the cultivation of students' innovative quality, improve the knowledge structure of teachers, so that teachers have more opportunities to study in foreign schools, in-depth enterprise research, broaden their horizons, and improve the ability of scientific research and practice. Colleges and universities should enhance the personality quality of teachers, including their sense of responsibility, inclusiveness and tenacity.

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