

Improvement Path of Students' Innovation Literacy in Higher Vocational Colleges

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Abstract: Innovation is one of the necessary qualities of talents in the 21st century, and has become the core competitiveness of the sustainable development of countries, organizations and individuals. It has become the consensus of the whole society to attach importance to the cultivation of talents' innovation literacy. This paper firstly understands the relevant research and historical evolution of innovation literacy at home and abroad on the basis of consulting relevant literature, and then conducts a questionnaire survey on students of a higher vocational university in M province, and then conducts relevant research based on the results of the survey and research. Research, put forward the improvement path of students' innovation literacy in higher vocational universities, and finally use the experimental results to compare and test whether the proposed improvement path of innovation literacy in higher vocational universities is effective, so as to expect the improvement of students' innovation literacy in higher vocational universities. There is a certain reference for improvement.

1. Introduction

The rapid improvement of students' innovative and creative ability in school has also increased the demand for innovative talents. Not only universities need to cultivate innovative talents, but higher vocational universities also need talents with innovative thinking [1]. The ability of innovation and creativity should be one of the basic abilities of students. The cultivation and improvement of students' ability of innovation and creativity is an important mission of the innovation and improvement of vocational education, and it is also a necessary condition for adapting to the Internet + era.

Literacy can be obtained through education, and literacy is the comprehensive and complex nature and characteristics exhibited by a person. Asrizal tests science and skills as relevant questions in a science education program. Aims to determine the usefulness of synthetic materials and to examine the usefulness and utility of synthetic materials for use in a scientific manner. Such research is research and improvement. The integrated technology application improvement is divided into seven stages: advantage and problem identification, information collection, product design, product certification, product review, limited testing and product review. Data collection

tools include performance assessments, practice assessments, writing tests, and performance appraisals. Data were analyzed using descriptive statistics and comparative tests. In today's complex world, multiple perspectives are needed to better understand and address challenges [2]. For decades, companies and researchers around the world have looked to interdisciplinary as the way to programs. Curriculum research offers great opportunities to training, while the nature of exercises can play an important role in training activities. Examining future scenarios as part of the Global Design Curriculum can serve as an interdisciplinary framework for the Global Curriculum, contributing to a better understanding of complex issues, challenges and design skills. Nielsen L M believes that in today's complex world, multiple perspectives are needed to better understand and face challenges. For decades, companies and researchers around the world have looked to interdisciplinary as the way to programs. Curriculum research offers great opportunities and rewards for students involved in training, while the nature can play an important role in general training activities. Examining future scenarios as part of a global design curriculum can serve an interdisciplinary framework for a global curriculum that contributes to understanding of issues, challenges [3]. Hasanah U study aims to analyze the effectiveness of digital learning innovations in improving students' information literacy. The research methodology employed was that of a combination with a validation test, using the application and model of the control group. Use a probabilistic sampling process for selection. The results show that there is significant value in using a digital saw, and thus can be a good way to improve students' information skills. Digital training services require students to choose to analyze and compile generated information from a variety of sources. This research can serve as a resource for educators, especially educators, who also need students to be aware of current training improvements [4]. Literacy is not innate or innate, it is acquired through continuous learning in the process of acquired education.

This paper studies the meaning of innovation literacy, the connotation of innovation ability, the connotation of innovation literacy of higher vocational students, the current situation of domestic research, and the path to improve the entrepreneurial literacy of universities students. The experimental results of the quantitative table are analyzed, and the results show that the application of the proposed path can improve the innovation quality of students in higher vocational universities.

2. Research on the Improvement Path of Innovation Literacy and Students' in Higher Vocational Colleges

2.1. Innovation Literacy

Combined with the concept and connotation of "literacy", innovation literacy is the condition to put forward one's own unique ideas and insights to create a new thing for engaging in a certain activity. In the last century, the term "literacy" has not been widely used, and researchers use the term "creativity" to express innovation literacy [5]. In order to have a comprehensive and comprehensive understanding of the concept of innovation literacy, it is necessary to explain and analyze the relationship between it and the closely related concepts of creativity and core literacy. The relationship between creativity and innovation literacy was found in the process of document retrieval. The word creativity often appeared in the literature of the last century and was used to represent the characteristics of innovative talents. Therefore, to distinguish the relationship between creativity and innovation literacy, we can To understand innovation literacy vertically from the time dimension. By sorting out the relevant connotations of creativity, it is found that the core literacy reflects the relatively basic character and ability, and the innovation literacy highlights the practical innovation part of the core literacy, which is the performance after the synthesis and improvement of the core literacy.

2.2. The Connotation of Innovation Ability

In different historical periods and fields, innovation has different meanings. From a cultural point of view, innovation is a concept of consciousness, a kind of ideological spirit relative to tradition; from a social point of view, innovation and improvement are equivalent, and it is a social and historical movement in which new things replace old things process; from the field of science and technology, innovation is the invention of technology; from the spiritual point of view, it includes various innovative ideologies and emotions [6]. To sum up, innovation is the recombination of old products, and it is a unique social interaction of human beings that makes breakthroughs in things, thinking and spirit under the action of subjective initiative. The ultimate goal of innovation is improvement, with questioning and exploration as its basic form.

The ability to innovate is the application of existing knowledge by individuals. This ability includes innovative consciousness, thinking and skills, the core of which is innovative thinking [7]. Innovation ability is formed by the combined effect of many different factors. Including intelligence and non-intelligence, thinking, personality characteristics and other factors, but also includes knowledge and skills factors that have been marginalized by previous research. These factors are not independent of each other but interact and influence each other. In general, creativity is the starting point, innovation is staged, and creation is the result [8]. Creative ability refers to the ability of creative personnel to exert their own subjective initiative and actively use various factors to carry out creative thinking through existing knowledge, experience and thinking mode. Creative ability is a comprehensive ability, not just creative thinking ability.

2.3. The Connotation of Innovation Literacy of Students

Innovative and creative ability is an important indicator to measure innovative and creative talents. Therefore, on the issue of innovation and creativity ability, we must establish a scientific view of improvement, and we must realize that the improvement of innovation and creativity ability is a process from low-level to high-level, and the cultivation and improvement of innovative and creative ability in the stage of higher vocational education is a student's learning and life. and the foundation of work improvement. The connotation of innovation and creativity ability of secondary vocational students can be defined as the spirit of exploration reflected by the educated in their study and life, being good at discovering new things, having the courage to master new methods, and using the existing knowledge system to creatively solve problems [9]. Students' innovative and creative ability consists of four aspects: innovative thinking ability; innovative and creative intellectualization ability; knowledge structure; practical innovative and creative skills. What is more important is whether higher vocational students have the ability to communicate with others and demonstrate and express practical results. Innovation literacy includes three aspects: innovative personality, innovative thinking, and innovative methods, as shown in Figure 1:

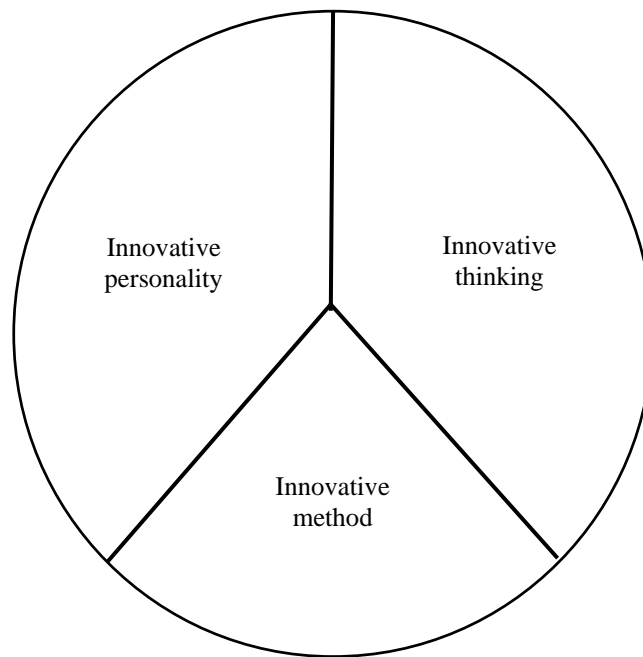


Figure 1: Structural structure of innovation literacy

2.4. Domestic Research Status

In recent years, innovation has been of great significance to the improvement of nations and individuals. In teaching, the school pays attention to the transfer of knowledge. In order to complete the teaching process and improve the teaching effect, teacher training is dominant, and students have little space for independent thinking. To cultivate students' innovative literacy, students' participation should be increased [10]. Teachers should communicate with students more, learn to listen, increase training experience, and improve students' literacy. Student potential is limitless. Through hard work and effective incentives, through intentional cultivation and effective incentives, etc., the potential of innovation will eventually become an externally significant ability. The party and the country attach great importance to it. The education informatization plan proposed by the Ministry of Education pointed out that building a country with strong human resources and cultivating innovative talents is the direction of continuous efforts, and clearly requires cultivating students' innovative spirit and ability. The teaching stage should focus on stimulating students' learning awareness and interest, the mastery of scientific methods and the improvement of thinking. The Ministry of Education proposed to implement the outline of comprehensive practice activities, cultivate students' innovative ability, and improve their comprehensive problem-solving ability. Due to the influence of multiple factors, it is difficult to promote quality education at present, students' innovative awareness is weak, and innovative talents are in short supply. In order to improve the current reality, the education stage should follow systematic guidance and take multiple measures. Follow the country's footsteps and respond to national policies and guidelines. In order to clarify and deepen the understanding of the connotation of innovation literacy, provide direction for talent training, and fully implement the training of innovation literacy.

2.5. Paths to Improve the Entrepreneurial Quality of Students

2.5.1. Improve Innovation Literacy Education

It is necessary for universities to speed up the construction of supporting facilities, including holding high-quality innovation and entrepreneurship competitions, applying for university students' innovation and entrepreneurship projects, and establishing innovation experimental areas. In addition, strengthen the construction of service platform to facilitate students to keep abreast of cutting-edge information and improve students' innovative thinking. Theory and practice are two aspects that complement each other. Students have high expectations for the practical link, but the perceived score is not particularly ideal. It is necessary to add more practical activities in the curriculum link and the practical dimension, which is conducive to innovation and entrepreneurship education improvement of.

2.5.2. Establish a Platform for Teachers and Students to Exchange Innovative Literacy

The key to improving the quality of innovation and entrepreneurship education is to take students as the center [11]. Building a platform for teachers and students to communicate is conducive to capturing students' feedback in a timely manner, strengthening the information exchange between teachers and students, and thus promoting the improvement of innovation and entrepreneurship education in universities. A comprehensive, balanced and innovative team of teachers is the key and important force for learning to improve innovative literacy. If teachers do not have innovative spirit and innovative thinking, it is difficult to cultivate students with corresponding qualities. The main sources of teachers for innovation and entrepreneurship education in most universities are still faculty counselors and counselors from the Admissions and Employment Office. Teachers have relatively simple experience and their teaching ability needs to be improved. Improving the overall quality of the teacher team can better guide students' learning and practice, ultimately improve students' satisfaction with innovation and entrepreneurship education services, and promote the healthy and sustainable improvement of innovation and entrepreneurship education in schools [12].

3. Investigation and Research on the Improvement Path of Students' Innovation Literacy in Higher Vocational Colleges

3.1. Research Objects

This research selects the students of education major in a higher vocational university in M province as the investigation and test object, and takes the students of two parallel classes of education major in the school as the practice object. Questionnaires were distributed in the form of questionnaires, with a total of 110 respondents.

3.2. Design Description of the Questionnaire Survey

The purpose of the investigation is to find out the real situation of students' innovative literacy in colleges, find out the reasons, and find a way to improve students' innovative literacy through these reasons and the actual situation of the school. The t-test formula used in this paper is as follows:

$$t = \frac{\bar{X} - \mu}{\frac{\sigma X}{\sqrt{n}}} \quad (1)$$

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}} \quad (2)$$

Among them, formula (1) is the single population test, which is the sample mean, s is the sample standard deviation, and n is the number of samples. Equation (2) is a double population test.

4. Analysis and Research the Improvement Path of Students' Innovation Literacy

4.1. Test and Analysis on the Improvement Path of Innovation Literacy of Students

Using a five-point Likert scale, they are very unsatisfactory, unsatisfactory, average, agreeable, very agreeable, and the scores correspond to 1, 2, 3, 4, and 5, for a total of 5 questions. In this experiment, students from the first and second classes of education major in a higher vocational college in M province were used as the experimental class and the control class respectively. Test Results and Analysis This study carried out data analysis on the implementation scale, and averaged each option. The test results are shown in Table 1 and Figure 2:

Table 1: Scale mean scatter table of the two classes

Question	1	2	3	4	5
Class 1	3.98	3.95	4.04	3.94	3.96
Class 2	3.41	3.51	3.55	3.58	3.39

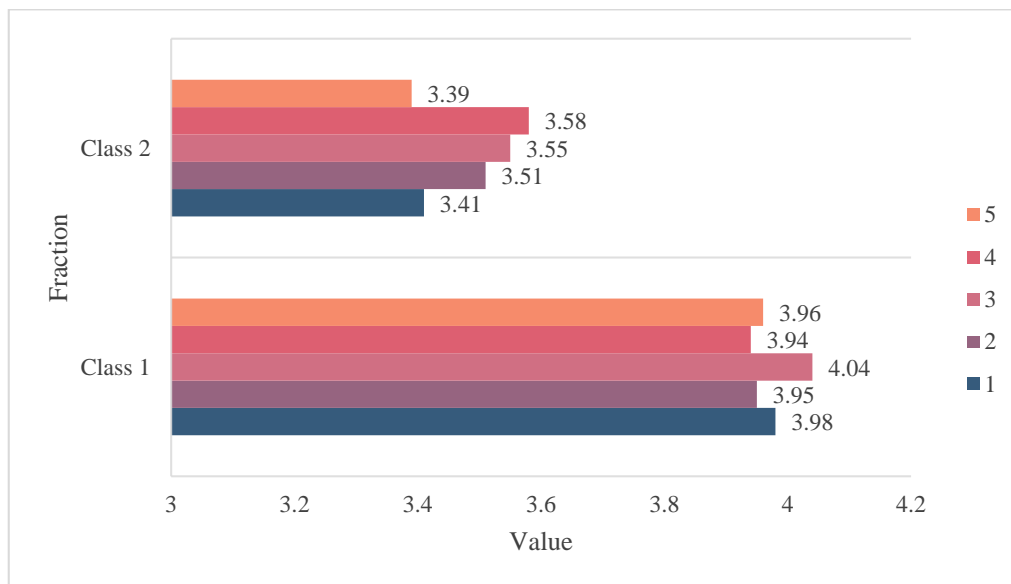


Figure 2: Comparison of the average scatter plot of the scores in Class 1 and Class 2

It can be seen from the results that the average score of each question in the first class is between 3.94-4.04, indicating that the path implemented by the experimental class is effective, and the average score of the second class is between 3.39-3.58, indicating that the control class did not use the experimental class path, so the proposed path is valid. Through the analysis of the scale, two conclusions are drawn in the results: (1) the application of the proposed path can improve the innovative literacy of students; (2) the application of the proposed path can improve the innovative

learning interest of students.

5. Conclusions

This study proposes a research path for improving students' innovative literacy in school, and verifies it. In view of the limitations of the research, it is hoped that the follow-up research can be carried out from the following two aspects: First, to further improve the way to improve students' innovative and creative ability, and to extend this research to other fields of education, so that all students' innovative and creative ability can be effectively improved, to promote comprehensive improvement. The second is to expand the application of information technology to the improvement of students' innovative and creative ability.

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