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Exploring and Practicing the Effectiveness of Imitative Innovative Thinking of College Students in Innovation and Entrepreneurship under the Background of New Engineering Disciplines

Nanjing Wei

Guizhou Education University, Guiyang, Guizhou, 550018, China

ABSTRACT

This paper focuses on the in-depth exploration and practice of innovation programs for college students in the context of new engineering disciplines, combined with the current development trend of generative AI technology. Through nearly 2 years of practical exploration of college students' imitative innovative thinking, especially in the new undergraduate colleges and universities, college students' innovative thinking cultivation effectiveness has achieved better results. This paper focuses on analyzing the impact of AI technology on the innovation and entrepreneurship projects of college students in new undergraduate colleges under the background of new engineering and the importance of cross-border integration and innovation under the concept of new engineering education, and summarizes and puts forward an inter-disciplinary fusion of imitative innovation of college students' innovation and entrepreneurship teaching ideas in new undergraduate colleges, which focuses on innovation inspiration, project practice, competition-driven, and inter-disciplinary fusion, and aims to improve the students' comprehensive innovation ability and ability to cope with complex problems. ability and the ability to deal with complex problems. It has been proved that this borrowed innovative thinking has significant effect on the cultivation of innovative thinking of college students in new undergraduate colleges and meets the cultivation requirements of local talents in the era of new engineering science.

KEYWORDS

Innovation Inspiration; Innovation and Entrepreneurship; New Engineering; Artificial Intelligence.

1. INTRODUCTION

Imitative innovation thinking is based on the existing technology base, business model, marketing methods and so on for reference, derived from a new thinking ideas. For general undergraduate colleges and universities, in the early stage of college students' innovation and entrepreneurship, imitative innovation thinking is particularly important, imitative innovation has less investment, low risk, high success rate, time and effort saving features and advantages for the current general undergraduate colleges and universities college students' innovation method has an important role and significance, and therefore the timely use of imitative innovation dispersion of thinking is not lost as a pragmatic choice. Imitation of innovation and diffusion of thinking must first correct the understanding of imitation of innovation, followed by timely, legitimate and practical initiatives, and finally to realize the true meaning of innovation on the basis of imitation, the only way to enhance the independent innovation ability of college students, and enhance the ability of college students to innovate and entrepreneurship.

The research in this paper is based on the exploration of college students' innovation and entrepreneurship path mechanism in the context of new engineering, combining with the new generation of new engineering talent demand, exploring the organizational mechanism of imitative innovation, and analyzing the effectiveness of imitative innovation thinking on innovation and entrepreneurship education in colleges and universities on this basis. The research in this paper is carried out based on Guizhou Normal College, focusing on the positioning of Guizhou Normal College, combining with the school's engineering teaching to carry out research on the subject, and analyzing the characteristics of innovation and entrepreneurship education for college students in Guizhou Normal College on the basis of doing research. After 2 years of practical exploration, imitative innovation thinking in the effectiveness of college students in innovation and entrepreneurship has a better effect, through this research practice, I hope to a certain extent, can enrich the theoretical system of China's innovation and entrepreneurship education, innovation and entrepreneurship education in China's colleges and universities on how to meet the needs of the innovation drive to provide valuable theoretical support.

2. ANALYSIS OF THE CURRENT STATE OF RESEARCH AND TRENDS

Since the new century, the country vigorously implement the innovation-driven development strategy, and strive to build an innovative country, put forward new requirements for higher education, vigorously implement innovation and entrepreneurship education, promote the deep integration of innovation and entrepreneurship education and professional education, improve students' innovation and practice ability, and cultivate innovation and entrepreneurship talents become an important breakthrough in the comprehensive reform of university education[1] . At present, the state promotes innovation-driven development, the implementation of "One Belt and One Road", "Made in China 205", "Internet +" and other major strategies, with new technologies, new forms, new modes and new industries as the representative of the new economy booming. The new economy represented by new technologies, new business forms, new modes and new industries is developing vigorously, which puts forward higher requirements for engineering and technology talents and urgently needs to accelerate the reform and innovation of engineering education. In order to deepen the reform of engineering education, to build a strong engineering education country, to serve and support China's economic transformation and upgrading. The national "dual innovation strategy", "innovation and entrepreneurship education" and "new engineering" are the reform tasks and directions that higher education is facing at the same time, how to rationalize the relationship between innovation and entrepreneurship education and the construction of new engineering? How to rationalize the relationship between innovation and entrepreneurship education and the construction of new engineering disciplines, and how to strengthen the innovation and entrepreneurship ability of college students under the background of new engineering disciplines are the realistic problems faced by institutions of higher education.

Cultivating innovative and entrepreneurial talents is the foundation for the rise of a nation, the need for a strong country, and a strategic choice for the rise and fall of a nation. Colleges and universities in the context of the new engineering, for the construction of innovative and entrepreneurial teaching mode with characteristics, the times put forward higher requirements. At present, the innovation and entrepreneurship education model for college students still has certain weaknesses. For "school-enterprise cooperation" is not deep enough, "collaborative education" mechanism is difficult to follow up, part of the "University-Industry Cooperation" base is famous but not real, resulting in serious mismatch between talent cultivation and market supply and demand. Misalignment, innovation and entrepreneurship education model needs to be improved and perfected. From the perspective of innovative thinking, this project focuses on the impact and effectiveness of imitative innovation on the innovative and entrepreneurial thinking of college students under the background of new engineering disciplines.

In recent years, Tsinghua University, Zhejiang University and other representatives of a number of high-level universities and local characteristics of universities around the innovation and entrepreneurship education have more in-depth research, and formed a unique innovation and entrepreneurship education model. While the exploration of the cultivation path of innovative thinking method and entrepreneurial ability of college students under the background of new engineering discipline, and the exploration and practice of the organic combination of imitative innovative thinking and new engineering discipline are relatively few, this project will focus on this research and put forward a scientific and reasonable implementation program to provide a model reference for the in-depth implementation of the new construction in colleges and universities.

In the domestic local colleges and universities generally have the problems of weak practical teaching link of new engineering and insufficient practical ability of students, how to combine with innovation and entrepreneurship education to cultivate new engineering talents, in order to cultivate a large number of new engineering professionals with strong practical ability, which is precisely one of the main contents of the local colleges and universities practicing the new engineering. And practice teaching is exactly to improve the practical ability and innovation ability of college students[2] . This project takes Guizhou Normal College as the initial object to carry out research and practice, through in-depth analysis of the connotation and extension of imitative innovative thinking, collecting the successful experience of implementing imitative innovation in related colleges and universities at home and abroad, combining with the characteristics of the school and the actual situation, to form an overall program of innovation and entrepreneurship education for the implementation of imitative innovation of college students under the background of the new engineering disciplines in the school. The research results of the project will first be practically applied in Guizhou Normal College to summarize the experience and provide reference for promoting teaching reform in Guizhou Province and colleges and universities nationwide.

3. BASIC QUALITIES OF INNOVATIVE TALENTS IN THE CONTEXT OF THE NEW ENGINEERING SCIENCE

3.1. Solid Academic Foundation and Integration of Interdisciplinary Knowledge

In the context of the new engineering, the learning of basic knowledge can no longer meet the needs of talent training in the new era, especially in recent years, the development of artificial intelligence technology, whether it is a science and technology major or a liberal arts major, college students' innovation and entrepreneurship projects need to be combined with a multi-domain and multi-professional cross-border innovation, not in the independent innovation mode of a single discipline, but to require that students be able to have a cross-disciplinary knowledge structure. It is necessary to have a thick foundation of professional knowledge, but also to understand the application of AI artificial intelligence big model, but also need to master the basic application of arts and sciences, such as big data mining, cultural innovation, and secondly, it is also necessary to understand the forefront of science and technology, interdisciplinary fields of multidisciplinary knowledge integration and innovation. Such interdisciplinary integration provides a new perspective and approach to solving complex engineering problems.

3.2. Capacity for Active Exploration and Lifelong Learning

In the face of the accelerated rate of knowledge updating and the rapid iteration of technology, new engineering talents must possess the spirit of active exploration and the ability of lifelong learning. This not only means the constant pursuit of new knowledge during school, but also the ability to continuously adapt to the changing social and technological environment after graduation. With the help of the Internet platform, students can access the latest academic resources and industry news

anytime and anywhere without the limitation of time and space, and have the ability of self-learning and active exploration, so as to realize self-driven learning and growth.

3.3. Cultivation of National Sentiment and Social Responsibility

New engineering education emphasizes the philosophy of running a school rooted in the land of China, which requires the talents trained to be able to have a deep love for their own country and people. While learning specialized knowledge, students are guided to establish correct values. In the practice of students' innovation and entrepreneurship projects, they should not only pursue technological innovations and breakthroughs, but also pay attention to the impact and responsibility of technology on society.

3.4. Combination of Innovative Thinking and Practical Skills

In the context of new engineering, the core of innovation and entrepreneurship education lies in cultivating students' innovative thinking and practical ability. This does not only mean the ability to solve known problems, but more importantly, the ability to come up with original insights and innovative solutions when facing unknown and complex problems. Therefore, new undergraduate colleges and universities should encourage students to participate in research projects, engineering practice and innovation competitions to exercise their problem finding and problem solving abilities through practical operation. At the same time, the university should also provide a platform for innovation and entrepreneurship, so that students have the opportunity to transform their ideas into actual products or services, thus cultivating truly innovative talents.

4. IMPLICATIONS OF IMITATIVE CREATIVE THINKING IN THE INSPIRATION OF INNOVATION AND ENTREPRENEURSHIP PROGRAMS

In this era of rapid change, innovation is a key driver of social progress and economic development. However, truly original innovations often require a lot of time, resources and research, and it is especially difficult for student projects in new undergraduate institutions to realize disruptive innovations. In such a context, imitative innovation thinking has become a practical and effective strategy for student project innovation in new undergraduate colleges and universities, which not only accelerates the innovation process, but also brings profound inspiration for project innovation thinking[3] .

Imitative innovation is not simply copying or plagiarizing, but a learning process standing on the shoulders of giants. It involves an in-depth analysis of an existing product, service or business model, extracting the best from it and identifying potential room for improvement. This way of thinking can help entrepreneurs avoid reinventing the wheel and instead focus on enhancements and refinements to get to market faster and meet consumer demand. At the same time, imitative innovation thinking is not without its challenges, requiring innovators to have keen market insights and be able to sift through a multitude of information to find valuable elements to capitalize on[4] . At the same time, it also requires entrepreneurs to be creative enough to be able to make the necessary innovations based on imitation in order to avoid falling into pure imitation, but rather in the pre-innovation period of the students, they can quickly understand the industry needs through imitative innovation, and quickly understand the innovation concepts, so as to realize from imitation-inspired to disruptive innovation.

Imitative innovative thinking is an important inspiration in innovative entrepreneurial programs, which can provide entrepreneurs with a process to learn and build on the successes of others. The following are the main roles of imitative innovative thinking:

(1) Reducing innovation risk: By imitating existing successful models, entrepreneurs can effectively reduce trial-and-error costs and market risks. Imitation of innovation allows entrepreneurs to stand on the shoulders of giants, avoid starting from scratch, and accelerate the process of product or service development.

(2) Rapid learning and growth: imitation is not only copying, but also a learning process. Through the imitation of industry-leading enterprises, entrepreneurs can quickly master the industry's core technology and business management skills, and promote their own rapid growth.

(3) Leap from imitative inspiration to disruptive innovation: Imitative innovation is an important stage towards original innovation. Through imitative innovation, technical experience can be accumulated and gradually transitioned to more independent original research and development, ultimately realizing the leap from imitation to innovation.

5. CULTIVATION OF INNOVATIVE THINKING ABILITY OF COLLEGE STUDENTS UNDER THE SYNERGISTIC MODE OF "CREATION-COMPETITION-RESEARCH"

The cultivation concepts of college students' innovation training program projects, innovation and entrepreneurship competitions, and college students' scientific research fit the talent cultivation requirements in the context of new engineering. In order to fully stimulate the practical innovation ability of students, combined with the actual situation of innovation and entrepreneurship in the school, we put forward the "Creation - Race - Research" innovation and entrepreneurship training system for college students, the intention of the project is the foundation of innovation and entrepreneurship projects, how to choose a good project is more critical to the competition and continue to research and excavate the project, disciplinary competitions are the feasibility of the project and connect the link between teaching and scientific research. Subject competition is the link between teaching and scientific research, through the "Creation, Competition and Research" innovation and entrepreneurship teaching and training mode, students of new undergraduate colleges and universities can quickly start the project and find inspiration for the innovation project from existing projects, thus stimulating and cultivating the students' innovative power.

Innovation and Entrepreneurship Competition is an important platform for experiencing college students' innovative projects. Through the innovation and entrepreneurship competition, it stimulates students' innovative thinking and exploratory spirit, and cultivates their interest in new things, new processes, new technologies, new methods and other aspects, as well as their practical ability. At the same time, the competition also builds a good cooperation and communication bridge between the school and the society[5] .

To promote research by competition, to promote the integration of innovation and entrepreneurship and professional education and teaching, through the innovation and entrepreneurship competition, to test the feasibility of students' projects, so as to promote the discipline can be the project research. In order to stimulate students' enthusiasm for innovation, and students feel that their theories and practices are recognized in the society, through the heuristic cultivation of imitative innovation, students can quickly find a research field of interest. At the same time, by strengthening students' ability to learn and progress on their own, and then expand their knowledge horizons. The results of scientific research will have a useful complementary effect on the content of practical education, which in turn will promote the development of scientific research activities and the cultivation of scientific research talents.

6. CONCLUSION

This paper focuses on the economic development strategy of Guizhou Province, cultivates innovation and entrepreneurship teaching characteristics according to local conditions, focuses on the requirements of the construction of new engineering disciplines, realizes the organic combination of professional talent training and innovation and entrepreneurship talent training, better solves the structural imbalance between talent training and the demand for innovation and entrepreneurship talent in colleges and universities in central and western regions, and cultivates a batch of innovative and entrepreneurial talents with intruding strength, entrepreneurship and good management for the Guizhou socio-economics, and development. In the academic year 2019-2023, through the cultivation of this model, we guided 12 provincial projects and 4 national projects of college students' innovation and entrepreneurship training program, including 1 project supported by the national key areas; in addition to this, the students' projects won the "Challenge Cup" national college students' extracurricular academic and scientific and technological works competition. In addition, the student projects have won 6 provincial third prizes in the "Challenge Cup" National Extracurricular Academic Science and Technology Competition, 1 national first prize in the "Innovation, Creativity and Entrepreneurship" Challenge Competition of National College Students, and 1 national gold prize in the China International College Students Innovation Competition. Meanwhile, in the disciplinary competitions, he won one first prize, one second prize and three third prizes in the National Virtual Simulation Application Innovation Competition. From innovation to entrepreneurship, guiding the incubation of student entrepreneurship to set up three enterprises, enterprise employees are from the innovation project team. It has been proved through practice that imitative innovation has better results in innovation and entrepreneurship training of college students, and it is hoped that through the research on the path of innovation ability enhancement, college students will be guided from borrowing to subversive innovation, and realize innovation in the true sense of the word, which is the only way to enhance the independent innovation ability of college students, and strengthen the ability of college students to innovate and start up businesses.

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