

Research on the Undergraduate Talent Cultivation Model Based on the Integration of "Competition-Innovation Project-Graduation Thesis"

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Abstract: This paper explores the role of the "competition-innovation project-graduation thesis" integrated training model in undergraduate talent cultivation, as well as the methods and significance of constructing this training model. Currently, higher education generally lacks practicality, hindering students' development of practical skills and comprehensive qualities. Innovative teaching methods are needed to enhance students' practical abilities and overall competencies. Competitions, innovation projects, and graduation theses, as three important components, can promote comprehensive improvement in students' academic research, innovative practice, and overall abilities. This paper proposes methods such as establishing the concept of integrated talent cultivation, improving organizational management mechanisms, and strengthening process assessment and outcome evaluation to construct the "competition-innovation project-graduation thesis" integrated training model. The implementation of this model will not only improve the quality of talent cultivation but also drive educational reform and enhance the core competitiveness of talent development. By adopting this integrated training model, universities can better prepare students for real-world challenges and equip them with the necessary skills and knowledge to excel in their chosen fields. Additionally, this model helps cultivate students' innovative thinking, teamwork skills, and problem-solving abilities, making them excellent talents with comprehensive qualities. By organically combining competitions, innovation projects, and graduation theses, students can continuously improve themselves through practical experiences and develop important qualities such as independent thinking, innovative practice, and comprehensive abilities. Therefore, constructing the "competition-innovation project-graduation thesis" integrated training model is of great significance in improving the quality and effectiveness of undergraduate talent cultivation.

Keywords: competition, innovation project, graduation thesis, undergraduate talent cultivation, practicality

1. Introduction

With the rapid development of society and deepening of economic globalization, the role and responsibility of higher education are becoming increasingly prominent [1-3]. As an important stage in cultivating future elites and innovative talents, undergraduate education plays a crucial role in talent development. However, the traditional model of undergraduate talent cultivation is no longer able to meet the demands and challenges of today's society. Currently, a significant issue faced by higher education is the lack of a practical education system [4]. Traditional undergraduate education focuses on the imparting of theoretical knowledge and the cultivation of academic research skills, often neglecting the practical and innovative abilities needed by students in actual work. This results in graduates having insufficient competitiveness in the job market and struggling to adapt to the rapidly changing and complex work environment. Therefore, there is an urgent need for a new model of undergraduate talent cultivation to address the deficiency of practical education in higher education. A cultivation model based on the combination of student competitions, student innovation projects, and graduation theses is a new approach to address the lack of practical education in higher education.

Through student competitions, students can showcase their talents and innovative thinking in team collaboration. Competition projects can cover various disciplinary fields, such as technological innovation, business planning, and social services. By participating in competitions, students not only develop problem-solving skills but also cultivate teamwork spirit and leadership abilities. During the competition process, students compete with other teams, which stimulates their enthusiasm and creativity.

Student innovation projects provide an important avenue for students to apply theoretical knowledge to practical situations. Through innovation projects, students can integrate the knowledge learned in the classroom with real-world problems and propose innovative solutions. Such practical projects help cultivate students' practical skills and innovative thinking, enabling them to better adapt to future work challenges. Graduation theses are an essential component of undergraduate education and an opportunity for students to apply their acquired knowledge comprehensively [5]. Building on competitions and innovation projects, students can choose a topic related to their major for in-depth research and thesis writing. Through thesis writing, students can develop a solid theoretical foundation, rigorous thinking, and independent problem-solving abilities. The combination of student competitions, student innovation projects, and graduation theses provides students with comprehensive practical opportunities and real-world experiences. Additionally, through school-government-industry cooperation, schools, government agencies, and enterprises work together to provide resources and support to students, enabling them to continuously grow and progress through practical experiences. This cultivation model helps improve students' competitiveness in the job market and enables them to better adapt to the rapidly changing and complex work environment.

2. The Role of "Competition-Innovation Project-Graduation Thesis" in Undergraduate Talent Cultivation

2.1 The Role of Student Competitions in Undergraduate Talent Cultivation

Student competitions play an important role in undergraduate talent cultivation [6]. Firstly, participating in competitions enhances students' academic abilities. Through competition participation, students need to conduct in-depth research in a specific field and apply it to practical problems. This requires them to have a solid theoretical foundation and innovative thinking abilities. For example, in scientific competitions, students need to design experiments, analyze data, and interpret results, all of which require the application of their academic knowledge. Through this practice, students not only consolidate their theoretical knowledge but also cultivate problem-solving abilities. Secondly, student competitions have a positive impact on students' innovative abilities.

Competitions often require students to present unique perspectives or solutions, which necessitates them to have innovative thinking and creative abilities. Participating in competitions can stimulate students' innovative potential and cultivate their innovative thinking methods and approaches. Through communication and competition with other participants, students can be exposed to different thoughts and perspectives, thereby broadening their thinking space. Additionally, competitions provide a platform for students to showcase their innovative achievements, encouraging them to dare to try and express their ideas. It not only enhances students' academic abilities and consolidates their acquired knowledge but also cultivates their innovative and problem-solving abilities. Therefore, schools should actively organize various competition activities, provide students with more opportunities for participation, and offer necessary support and guidance to promote their comprehensive development and growth. Thus, student competitions play an important role in undergraduate talent cultivation.

2.2 The Role of Student Innovation Projects in Undergraduate Talent Cultivation

Student innovation projects play a significant role in undergraduate talent cultivation [7]. Firstly, participating in innovation projects helps cultivate students' research abilities. In innovation projects, students need to choose a research topic and conduct in-depth investigation and practice. They need to learn relevant theoretical knowledge, master research methods and techniques, and carry out experimental design and data analysis. Through this process, students can enhance their research abilities and develop problem-solving and innovative thinking skills. Secondly, student innovation projects have a positive impact on improving students' practical skills. Innovation projects often require students to apply theoretical knowledge to real-world problems and propose innovative solutions. Students need to engage in practical activities such as hands-on experiments, prototype design, and testing validation. These practical activities help students transform abstract theories into concrete practices, cultivating their practical skills and teamwork spirit.

Moreover, innovation projects expose students to real societal issues, enhancing their sense of social responsibility and innovation awareness. Student innovation projects not only cultivate students' research abilities and practical skills but also improve their problem-solving and innovative thinking abilities. Schools should actively support and encourage student participation in innovation projects, providing

necessary resources and guidance to promote their comprehensive development and growth. Additionally, schools should establish partnerships with social enterprises and research institutions to provide students with more opportunities for innovation projects, enabling them to continuously enhance their abilities and levels through practical experiences.

2.3 The Role of Graduation Thesis in Undergraduate Talent Cultivation

The graduation thesis is an indispensable part of undergraduate talent cultivation and plays a crucial role^[8]. Firstly, the graduation thesis can enhance students' research abilities and academic literacy. In the process of writing the graduation thesis, students need to choose a research topic and conduct in-depth literature review and empirical research. They need to apply the theoretical knowledge and research methods they have learned to collect and analyze data and draw conclusions. Through this process, students not only improve their research abilities but also cultivate critical thinking and academic writing skills. Secondly, the graduation thesis has a positive impact on enhancing students' comprehensive abilities. Writing a graduation thesis requires students to have the ability to learn independently and think critically. They need to develop research plans, organize research materials, solve problems, and write the thesis. This requires them to have good time management, information retrieval, and analytical skills.

Additionally, the graduation thesis requires students to express themselves orally and in writing, cultivating their communication and presentation skills. By completing the graduation thesis, students can comprehensively enhance their overall quality and lay a solid foundation for future academic research or career development. The graduation thesis not only enhances students' research abilities and academic literacy but also improves their comprehensive abilities and independent learning capabilities in undergraduate talent cultivation. Schools should provide necessary guidance and support to help students successfully complete the writing of their graduation thesis. At the same time, schools should encourage students to choose research topics related to their majors and provide abundant resources and platforms to promote in-depth research and innovation in their graduation theses. Through the completion of the graduation thesis, students will be able to comprehensively demonstrate their academic level and research achievements, laying a solid foundation for their future academic or career development.

3. The construction of "Competition-Innovation Project-Graduation Thesis" trinity training model

3.1 Establishment of the Three-in-One Talent Development Concept

In order to build a three-in-one talent development model for competitions, innovation projects, and graduation theses, it is necessary to establish a comprehensive concept of three-in-one talent development. This concept should include the comprehensive development of students' knowledge, abilities, and qualities. Firstly, emphasis should be placed on the cultivation of students' knowledge. Knowledge serves as the foundation for students' growth and development, and it is the cornerstone for them to demonstrate their talents in competitions, innovation projects, and graduation theses. Therefore, students should be provided with extensive and in-depth disciplinary knowledge to help them establish a solid academic foundation. At the same time, interdisciplinary learning should also be encouraged to cultivate students' comprehensive knowledge and cross-disciplinary abilities. Secondly, attention should be paid to the cultivation of students' abilities. In competitions, innovation projects, and graduation theses, students need to possess certain research and innovation capabilities. Therefore, courses on research methods and innovative thinking should be offered to cultivate students' research abilities and innovation consciousness.

Moreover, practical opportunities should be provided to students so that they can apply the theoretical knowledge they have learned to practical problems, cultivating their practical skills and problem-solving abilities. The establishment of a three-in-one talent development concept serves as the foundation for building a three-in-one talent development model for competitions, innovation projects, and graduation theses. This concept should focus on the cultivation of students' knowledge and abilities, facilitating their comprehensive development. Additionally, attention should also be paid to the cultivation of students' qualities, such as their sense of social responsibility, innovative spirit, and teamwork abilities. By establishing such a development concept, a comprehensive platform can be provided for students, enabling them to become highly skilled talents with innovative capabilities and comprehensive qualities.

3.2 Improving the trinity organization management mechanism

The core of the trinity talent cultivation concept is to organically combine competitions, university student innovation and entrepreneurship training projects and graduation theses, to achieve effective connection of knowledge learning, ability training and innovation practice. Under the guidance of this concept, schools should start from various aspects such as training program design and process management, and form matching mechanisms in terms of project selection, content setting, process management, etc., so that the three cultivation activities can be closely integrated and promote each other. For example, students can be organized to carry out innovation and entrepreneurship training based on competition projects, and write graduation theses using training experience as materials, so that the three activities form a virtuous cycle and complementary training system. This is helpful for students to train practical abilities on the basis of knowledge learning, and eventually accomplish knowledge accumulation, ability improvement and innovation achievement output.

To implement the trinity cultivation concept requires creating a supportive environment and atmosphere. First, strengthen top-level design and promote the trinity reform from the training program level, and establish supporting mechanisms such as project establishment, process management, and achievement evaluation. Second, improve teaching resource conditions, such as strengthening teacher team building, providing innovation and entrepreneurship venues, financial support, etc. Third, create a strong atmosphere of innovation and entrepreneurship, such as holding project roadshows, achievement exhibitions, entrepreneurship salons and other activities. Fourth, establish incentive mechanisms to commend and reward students participating in the trinity cultivation. Fifth, strengthen process management and guidance, and assign specific instructors for project guidance. The above measures will help the effective implementation of the trinity cultivation concept.

3.3 Strengthening process assessment and result evaluation of the trinity

To implement the trinity talent cultivation, process assessment and result evaluation are crucial. First, establish a full-process tracking mechanism to examine and assess students' participation in trinity activities. Nodes such as project initiation, mid-term inspection, and final assessment can be set to evaluate project progress and effectiveness. Assessment should focus on evaluating students' soft skills such as learning attitude, teamwork, and problem-solving abilities. Second, build a comprehensive evaluation system that not only values the final results, but also pays attention to the knowledge accumulation and ability improvement that students gain during participation. The evaluation should comprehensively consider students' performance in aspects like knowledge, abilities and qualities. Third, focus on the quality of output results and require students to submit written reports or results demonstration during project conclusion for professional and formal evaluation, to ensure project completion quality. Fourth, establish a peer review mechanism for students, instructors and professional evaluators to jointly participate in the evaluation and form a concerted result evaluation.

To further improve the evaluation mechanism for the trinity cultivation, the following aspects can be considered: First, set detailed evaluation criteria, clarify evaluation standards, procedures, methods, precautions, etc. to ensure standardization of evaluation. Second, build an electronic information platform to realize informationization and standardization of the evaluation process using information technologies. Third, strengthen process diagnosis and provide students with timely feedback and guidance on their performance at different stages. Fourth, pay attention to the application of evaluation results, and link the results with rewards, support, follow-up cultivation, etc. to give full play to the guiding role of evaluation. Fifth, extensively collect opinion feedback, constantly optimize and improve the evaluation mechanism, and promote continuous improvement of the trinity cultivation model. Scientific and standardized process assessment and result evaluation will promote the effectiveness of the trinity cultivation.

4. The significance of the "Competition-Innovation Project-Graduation Thesis" trinity cultivation model

4.1 The significance of improving the quality of talent cultivation

Implementing the "competition-innovation and entrepreneurship-graduation thesis" trinity cultivation model can comprehensively improve the quality of talent cultivation. First, it integrates various cultivation resources to form a combined force. Organically combining each cultivation link makes them

an interconnected cultivation system, which is more efficient than fragmented cultivation methods. Second, it builds a complete quality training chain. Knowledge learning, innovation practice, and ability improvement are interlocked to enable comprehensive cultivation of students. Third, it strengthens problem-oriented learning methods. Inquiry-based learning guided by practical problems makes talent cultivation more demand-oriented. Fourth, it creates a close school-enterprise collaborative mechanism. Enterprises participate in aspects like project establishment, process guidance, and result evaluation, aligning talent cultivation with demands.

In general, the trinity cultivation systematizes the organizational forms of project learning, innovation practice, and ability improvement in the talent cultivation process, providing continuous, serial, and in-depth cultivation programs to ensure linkages and clear mechanisms. It strengthens process management with a focus on developing students' knowledge, abilities and qualities. It also strengthens effect evaluation by paying attention to cultivation quality and practical outputs. This cultivation model enriches the learning content, makes the cultivation methods more scientific and standardized, and ultimately delivers more outstanding and reliable results. Therefore, implementing the trinity cultivation is of great significance for improving the quality of talent cultivation.

4.2 The significance of promoting teaching reform

Implementing the trinity cultivation model is of great significance for promoting teaching reform. First, it implements the fundamental task of moral education. With a focus on cultivating students' social responsibility, innovative spirit, and practical abilities, it brings teaching back to the original purpose of moral education. Second, it strengthens reforms in problem-oriented and project-driven teaching models, transforming from instilling teaching to ability cultivation driven by project participation under the guidance of problems. Third, it promotes reforms in diversified cultivation approaches, organically combining classroom learning, social practice, science and technology competitions, entrepreneurship training and other means to achieve three-dimensional cultivation. Fourth, it promotes the mechanism construction of collaborative education. With close school-enterprise cooperation and joint participation of teachers and students, a collaborative education mechanism is formed.

The implementation of the trinity cultivation model makes the teaching content closer to social needs, the teaching methods more flexible and diverse, and shifts the teaching subject to the student-centered approach, promoting innovations in educational concepts, cultivation models, management mechanisms, etc. This is conducive to developing an integrated talent cultivation model of combining industry and academia, and unifying knowledge and practice, enabling talent cultivation to better meet the needs of economic and social development. Therefore, the trinity cultivation has important leading significance for promoting teaching reform in the new era.

4.3 The significance of enhancing the core competitiveness of talent cultivation

Implementing the trinity cultivation model can enhance the core competitiveness of talent cultivation. First, it broadens the connotation of talent cultivation. It not only focuses on students' mastery of professional knowledge, but also attaches importance to cultivating comprehensive qualities such as innovative awareness, teamwork, and practical abilities, making talent cultivation more comprehensive. At the same time, it improves the pertinence of talent cultivation. By closely integrating the needs of regional economic development, the talent cultivation objectives become more explicit and directly market-oriented. Third, it also strengthens the effectiveness of talent cultivation. Project-based learning makes talent cultivation closer to reality, and the ability to apply knowledge is cultivated. Fourth, it enhances the characteristics of talent cultivation. Schools can develop characteristic cultivation directions based on their own advantages in majors and resource endowments.

5. Conclusion

Through research on the undergraduate talent cultivation model of "competition-innovation and entrepreneurship-graduation thesis" trinity, it is found that this model plays an important role in the comprehensive ability improvement and innovative spirit cultivation of undergraduates. In competitions, students can stimulate their potential and improve their professional skills and teamwork abilities through competition with others. In innovation and entrepreneurship projects, students can cultivate their innovative thinking and practical abilities through independent design and practical exploration. Graduation thesis is an opportunity for students to comprehensively apply their learned knowledge and

methods to conduct in-depth research on a topic and propose innovative perspectives. Based on the above research results, it can be concluded that: the trinity cultivation model of competition, innovation and entrepreneurship, and graduation thesis is of great significance for undergraduate talent cultivation. This model can enable students to make comprehensive progress in academic research, innovation practice, and comprehensive capabilities. By participating in competitions, students can be exposed to more academic knowledge and professional skills, and continuously improve their abilities through competition with others. Innovation and entrepreneurship projects provide students with a platform for innovation practice to develop their innovative thinking and practical abilities. Graduation thesis is an opportunity for students to comprehensively apply their learned knowledge and methods to conduct in-depth research on a topic and propose innovative perspectives.

However, there are still some problems and challenges in implementing this trinity undergraduate talent cultivation model. First, schools need to provide more support and resources to ensure that students can smoothly participate in competition, innovation and entrepreneurship, and graduation thesis activities. Second, schools also need to strengthen student guidance and training to help them better understand and master relevant knowledge and skills. In addition, schools should also establish closer cooperation with all sectors of society, providing students with more innovation project opportunities for them to continuously improve their abilities and levels through practice. Looking ahead, we can further improve and optimize the "competition-innovation and entrepreneurship-graduation thesis" trinity undergraduate talent cultivation model. By formulating more specific cultivation goals and indicators, educational institutions can assess student performance and outcomes in competitions, innovation, and entrepreneurship, as well as graduation theses. This approach strengthens students' interdisciplinary learning by encouraging them to engage in cross-learning and research across different disciplines, fostering the development of interdisciplinary thinking and problem-solving skills.

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