

Transforming Students' Training Methods to Enhance Innovation Capabilities

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Abstract

The development of graduate education is rapid, and the enrollment scale is constantly expanding. How to steadily promote graduate education reform, build a reasonable training system, strengthen the cultivation of graduate innovation ability, and improve the quality of graduate education is an important research field. This article explores some problems in the current graduate training process and proposes measures such as promoting learning through competition, deeply integrating teaching and research, constructing a case teaching model, establishing an international joint training platform, and fully utilizing experimental platforms. It is of great significance to improve the innovation and practical ability of graduate students and the quality of talent cultivation.

Keywords: Graduate Education, Creative Ability, Integration of Science and Education.

1. Introduction

1.1. The Urgency of Enhancing Innovation Capability

The cultivation of innovative talents is an important cornerstone for the implementation of the national innovation development strategy. Cultivating high-level innovative talents is an important mission of graduate education, which will directly affect the speed and quality of China's scientific and technological, economic and other development [1-5]. Graduate education shoulders the important mission of cultivating high-level talents and innovative creation, is an important cornerstone of national development and social progress, and is the basic layout for responding to talent competition [6-8].

Innovation ability is not only a core indicator to measure the academic level of graduate students, but also the core of their human capital. The cultivation of innovative graduate talents directly determines the supply capacity of social talents in higher education institutions, and is closely related to national development strategies. It is related to whether the country can meet the demand for innovative talents in development [9-13]. The cultivation of graduate innovation ability is a complex, long-term, and systematic issue. Therefore, in the context of the increasing enrollment scale and changes in social demand, it is necessary to conduct in-depth research on graduate innovation ability [14-15].

1.2. The New Requirements for Graduate Education

The cultivation of graduate students majoring in materials

should highlight practicality and applicability. They should not only be able to solve practical engineering problems related to materials, but also be competent in technical guidance and management. They should establish a reasonable curriculum system that combines theory and practice, organically integrate knowledge, abilities, and qualities, and cultivate students' comprehensive ability and advanced thinking to solve complex problems.

1.3. Demand Oriented Graduate Training Objectives

Graduate education should adhere to the principle of putting people first, cultivating moral character, cultivating correct values, guiding students to develop comprehensively in morality, intelligence, physical fitness, aesthetics, and labor, and focusing on improving graduate students' innovation ability as the main goal.

The cultivation of graduate students should be biased towards the demand side, focus on the strategic overall situation, focus on the forefront of technology, grasp the main artery of economic development, comprehensively strengthen the innovation ability and scientific research literacy of graduate students, comprehensively enhance their knowledge and practical innovation ability, and promote the improvement of graduate education's ability to serve national and regional development.

The thinking and quality of life of graduate students are more important, and it is necessary to cultivate them into high-

quality scientific researchers who are hardworking and have a certain ability to withstand pressure. Cultivate graduate students as role models who abide by laws and regulations, promote traditional Chinese virtues, and lead by example among young people.

1.4. Emphasize the Cultivation of Students' Work Abilities

To cultivate a group of graduate students with strong work abilities. Scientific research ability and work ability complement each other, and strong work ability can help graduate students solve trivial matters in life. There can be a lot of time spent on scientific research.

Emphasizing the cultivation of work ability can make communication and exchange between mentors and graduate students smoother; upload and issue more effectively, and work smoothly. Scientific research can also be carried out smoothly, which can drive students to think. Proactive thinking can have better research highlights and improve the overall innovation ability of graduate students.

Regularly invite graduate enterprise mentors, senior technical engineers in relevant fields, and field specialists to jointly develop training programs, course plans, and courses that integrate with industry development around the trend of technological development.

1.5. Diversified Cultivation to Enhance Graduate Students' Innovation Ability

Graduate education is an important foundation for high-level talent cultivation and innovative creation, and an important cornerstone for national development and social progress. Graduate education should not only meet the comprehensive development of morality, intelligence, physical fitness, aesthetics, and labor, but also meet the major needs of the country.

Continuously deepening the reform of graduate education and teaching, with improving the quality of graduate training as the core, and emphasizing the cultivation of innovation and practical abilities.

Effectively integrating the education and teaching, technology achievement transformation, talent gathering and other links and elements, organically combining innovative education with solving practical problems in the industry, building a bridge between the education and industry ends, and shaping an ecological system for the coordinated and integrated development of education, technology and talent.

1.6. Promoting Learning and Teaching through Competitions

The characteristic teaching philosophy of combining teaching and learning is to promote learning through competitions and teaching through competitions. By promoting learning through competitions, students can be effectively motivated to participate in subject competitions, enabling them to engage in specific practical activities during the competition process. On the one hand, the competition system and

students' expectations for grades should be utilized to stimulate their enthusiasm for learning. On the other hand, students can continuously improve their exploration, application, and cooperation abilities while participating in competitions, and enhance their overall quality.

By guiding students to participate in competitions to promote teaching, teachers can reflect on their own shortcomings in theoretical and practical teaching, and discover the insufficient knowledge and quality of students in the process of guiding competitions. This can lead to targeted improvements in teaching methods and strategies in future teaching processes. During the process of guiding students to participate in competitions, teachers can also continuously improve their knowledge reserves, thereby improving their teaching level and quality. Promoting learning and teaching through competitions not only have a positive promoting effect on the development of students' abilities, but also greatly improve the level of teachers.

Give full play to the driving role of competitions, utilize new engineering disciplines, take the construction of new disciplines as the guide, promote the construction of basic disciplines, emerging disciplines, and interdisciplinary fields, continuously improve the collaborative training mechanism for innovative talents in higher education, increase the integration of teaching and practical resources both on and off campus, and cultivate top-notch innovative talents.

The motivation for innovation comes from the pursuit of higher values, pursuing truth, changing the world, challenging oneself, and making people happier.

1.7. Deeply Integrate Teaching and Research to Build a Case Teaching Model.

Establish a graduate education innovation team to achieve deep integration of teaching and research. Optimize the graduate training plan, integrate science and education with industry and education, and highlight the practicality of curriculum design. The curriculum should be guided by industry and enterprise needs, and the curriculum should reflect professional principles. The latest achievements of the theory must be closely linked to the forefront of scientific research and industrial practice.

In course settings highlight the latest needs on the website. During teaching, case teaching is the main focus, and continuous innovation is made to achieve the teaching goal of emphasizing both basic theory and practicality. With the aim of activating teachers, students, and courses, create a teaching model that is concise, engaging, and innovative. Teachers organically combine personal research achievements, industry cutting-edge development, and course content, actively build a course case library, so that students can intuitively grasp the teaching content during the learning process, and gradually form a scientific way of thinking.

Starting from scientific research content with promising application prospects, stimulate students' interest and

enable them to understand basic theoretical knowledge, achieving a positive interaction between education and scientific research.

1.8. Establish an International Joint Training Platform

In the fierce international competition, positioning a global perspective and utilizing global high-quality educational resources to cultivate high-level composite talents. Regularly organize graduate students to participate in cross international academic exchange activities, including inviting foreign experts or renowned scholars to hold academic lectures, and participating in international academic conferences in the field of disciplines.

Strengthen the cooperation with foreign famous schools and world famous schools, learn the research methods and scientific research experience of the research group of famous schools, encourage graduate students to go abroad for further study during summer vacation, enhance the sharing of experience and learning exchanges between students, and establish an international collaborative training mode.

Building a platform for educational cooperation and exchange through mutual experience learning, resource sharing, and collaborative progress, we aim to elevate educational cooperation for innovative development in the digital age to new heights, and make greater contributions to building a community with a shared future for mankind through education and youth.

The material research in which the author is located belongs to a multidisciplinary interdisciplinary field with high practical ability requirements. Relying solely on online and offline theoretical learning is not enough to meet the needs of high-level graduate talent cultivation, and high-level academic landmark achievements require a certain period of time to be obtained. For example, graduate students publishing high-level articles or supervisors obtaining approval for international major key projects must go through a large amount of preliminary research work from both domestic and international parties, master a good foundation of cooperation, and carefully condense in order to achieve landmark achievements.

1.9. Improving Graduate Enrollment through Experimental Platforms

Experimental platforms are important scientific research resources and the main venue for graduate practical operations and scientific innovation work. Therefore, experimental platforms are the main way to enhance graduate practical abilities, and explore the integration of graduate scientific research and practical abilities into the operation of experimental platforms. Graduate students have active thinking, which is an important intellectual resource and innovation subject.

At the same time, the development of graduate research work is closely related to experimental platforms. However, due to the standardized and specialized requirements for the operation and management of the experimental platform,

there is a lack of close connection between the cultivation of graduate practical abilities and the high-quality and efficient operation of the platform, which limits the improvement of graduate practical abilities and scientific research quality.

The excessive detachment between graduate practice and the management of research and experimental platforms not only results in serious resource waste, but also consumes additional experimental platform resources, leading to a decrease in operational efficiency.

The system that combines the improvement of practical abilities of engineering graduate students with the efficient operation of experimental platforms is an important guarantee to ensure and balance the two. It not only promotes the improvement of practical abilities, sense of responsibility, and the cultivation of good scientific research qualities and abilities of engineering graduate students, but also has important significance for the efficient operation of experimental platforms. It also provides an effective way for the country to cultivate high-level composite technical talents and build high-quality and efficient scientific research and innovation platforms.

2. Conclusion

The new type of graduate training should be based on scientific research background and change traditional training methods. The experimental platform is an important research resource and the main venue for graduate practical operations and scientific and technological innovation work. It integrates graduate research and practical abilities into the operation of the experimental platform.

Establish an international joint training platform, utilize global high-quality educational resources, and cultivate high-level composite talents. Regularly organize graduate students to participate in cross international academic exchange activities, strengthen cooperation with renowned foreign and world-renowned universities, learn from the research methods and experiences of research groups of renowned universities, and establish an international collaborative training model

By promoting learning through competitions, students can be effectively motivated to participate in subject competitions, enabling them to participate in specific practical activities during the competition process. Enhance the personal abilities of contemporary graduate students and enhance their comprehensive abilities through diversified cultivation. To cultivate a new generation of graduate students with high quality, ability, and innovative thinking for society.

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played a good promoting role in improving the innovation ability of graduate students.

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