

Rethinking of graduate education mode from the perspective of innovative talent cultivation

Lifen Gan

Graduate School, China West Normal University, Nanchong, Sichuan, China

ABSTRACT

With the rapid development of science and technology and the deepening of globalization, the training of innovative talents is an important strategic task to build a modern socialist country in the new era. From this perspective, the current graduate education model is facing with the contradiction between the scale and the allocation of educational resources, the mismatch between the existing education model and the innovative talent training target; the restriction of the institutional framework, the backward training of innovative talents, and the training of graduate education practice ability is difficult to meet the demand. Therefore, we should reform the framework of graduate enrollment system, optimize the setting of graduate education, strengthen the practice of graduate education, so as to build the paradigm of innovative graduate education in the new era and improve the innovation ability of graduate students.

KEYWORDS

innovative talent training; graduate student; education model; challenge; optimization

Postgraduate education is a high-level stage of higher education, and its quality is directly related to the national innovation ability and the level of scientific and technological development. Therefore, the study of graduate education model is particularly important. Especially in the process of cultivating innovative talents, the perfect graduate education mode is helpful to improve the innovative consciousness and scientific research ability of graduate students, and contribute to the construction of socialist modernization in the new period. However, the current graduate education model is obviously not enough to meet the needs of innovative talent training, and the reform of graduate education mode is imperative. In this context, through the combination of literature research and work experience, this paper focuses on the shortcomings of the current graduate education model in cultivating innovative talents, analyzes the challenges faced by the graduate education model, excavates the problems existing in the graduate education model, and puts forward the optimization strategy of the graduate education model. The research aims to provide theoretical basis and practical guidance for the reform of graduate education mode from the perspective of innovative talent training.

1 The challenges faced by the graduate education model from the perspective of innovative talent training

1.1 The contradiction between the scale of graduate training and the allocation of educational resources

With the rapid development of economy and the increase of the demand for high-level talents, the scale of graduate education in China has expanded rapidly. By 2023, the number of graduate students in China exceeds 3.8 million, the total number of graduates exceeds 11 million, building the world's largest graduate education system^[1]. However, compared with the expanding scale of graduate students, there is some lag in the allocation of educational resources, especially academic educational resources. On the one hand, high-quality education resources, such as famous teachers and scientific research platforms, are limited, which is difficult to meet the growing demand for graduate education. On the other hand, there is an imbalance in the regional distribution of educational resources, and there is a large gap between the developed eastern coastal areas and the central and western regions. This imbalance in distribution leads to the uneven quality of graduate education in China, which affects the cultivation of innovative talents.

1.2 The existing education mode does not match with the training goal of innovative talents

The development of graduate education in China has gone through three stages: apprenticeship training mode, professional training mode and diversified training mode^[2]. the first stage is the traditional education model dominated by the knowledge transmission, focusing on the cultivation of practical ability; the second stage is the early stage of the scientific research ability, but it still lacks the systematic cultivation of innovation consciousness and innovation ability; and the third stage is to integrate the innovative elements, but the education system with the goal is not formed. This mismatch is mainly due to the existing education model by copying the training model of the West (especially the former Soviet Union) but not reflecting Chinese characteristics. As a result, the existing education model does not meet the

needs of the socialist construction and development in the new period. At the same time, the existing education mode often requires to follow a fixed curriculum system and research direction, and lack of interdisciplinary and cross-field learning opportunities, which also limits the expansion of graduate innovative thinking and the improvement of practical ability.

2 Problems existing in the graduate education mode under the perspective of innovative talent training

2.1 The framework of graduate enrollment system restricts the training of innovative talents

On the one hand, the current characteristics of graduate education in China are the country's keen expectation for innovative talents, on the other hand, it is also sought in the backward enrollment system framework, which makes the graduate education in some universities limit students innovative thinking and personalized development, and lacks enough freedom in academic exploration and practical innovation. It is manifested in several aspects: First, the administrative rights of colleges and universities excessively interfere in the graduate enrollment mode. The current graduate enrollment is based on management personnel, supplemented by academic personnel and administrative guidance. As a result, the academic orientation of graduate students in the process of graduate enrollment is not obvious, and it is difficult to select students with real academic ability and innovation potential. Secondly, the form of enrollment and examination is not conducive to the cultivation of innovative talents. The current graduate admission examination mainly implements the form of "written test + interview" or "preliminary examination + second examination", among which, the written examination aims to investigate the degree of students theoretical knowledge, the interview focuses on the students strain ability; the preliminary examination selects students comprehensive quality, and the second examination focuses more on the depth of professional knowledge. In order to cultivate innovative talents, the postgraduate entrance examination should focus on the interview and the second examination, in order to investigate the students innovative thinking and practical operation ability. However, the current examination form "heavy written test, light interview" "heavy preliminary examination, light second examination", makes the graduate entrance examination in the role of identifying innovative talents is limited. Finally, it is difficult to assess students innovation ability and practical skills. In the current postgraduate entrance examination, foreign language and political theory occupy a large part, which increases the burden of candidates, and occupies the time of professional learning.

2.2 Postgraduate education link design backward innovative talent training

The cultivation and training of innovative thinking is an important part to improve the effectiveness of graduate education and the quality of talent training^[3]. Postgraduate education covers many parts, such as educational objectives, curriculum setting, teaching methods and evaluation system, which is the key place directly related to the effectiveness of innovative talent training. However, subject to the restriction of the existing education mode, the current design of graduate education generally lags behind the training of innovative talents. There are many problems. First, in terms of educational goals, the graduate training goal in the past is to cultivate academic talents, paying attention to the output of theoretical research and academic achievements. However, from the perspective of innovative talent training, this educational goal is a little single, which is not enough to reflect the diversified needs of innovative talent training. Secondly, in terms of curriculum setting, the past graduate courses mainly focused on theoretical knowledge, and the lack of course content combined with practical application led to the lack of cutting-edge achievements in some graduate teaching materials, and the slow update of course content, which made it difficult to keep pace with the pace of scientific and technological development. Again, the teaching method, by the limitation of objective education teaching infrastructure and graduate tutor subjective education concept, in terms of teaching methods, the traditional teaching is still dominant, lack of interactivity and practicality, lack of close ties with industry and the field of practical application, is not conducive to stimulate students innovation consciousness and critical thinking. last, In terms of evaluation system, the graduation standards of most colleges and universities are mainly based on the number of papers published, while ignoring the cultivation of students practical ability and the transformation of innovative achievements. This evaluation system is too single, fails to reflect the comprehensive quality of graduate students, and is not conducive to the cultivation of innovation ability of graduate students.

2.3 The cultivation of graduate education practical ability is difficult to meet the needs

Practical education is an important part of cultivating innovative graduate students. Although theory provides a foundation for understanding, combined with practical experience, students can apply knowledge and develop their

critical thinking skills. With the help of knowledge-based practical education activities, academic theory can be combined with practical application to improve students practical ability and the ability to solve practical problems. However, in the current graduate education work, although the importance of practical education activities has been realized, but it is not reflected in the actual educational activities, and the subject status of practical education activities is not really established. Specific performance is in several aspects: above all, graduate student practice education activities are superficial. Graduate practical education activities in some universities are often not systematic and coherent, and are more regarded as a form or an additional burden, rather than a necessary part of the educational process. Secondly, the resource input of postgraduate practical education is insufficient. Many universities have limited investment in laboratory equipment, practice bases construction and cooperation with enterprises, which makes it difficult for graduate students to obtain high-quality practice opportunities. Thirdly, the guiding force of graduate practice education is weak. In some colleges and universities, due to the lack of experienced practice instructors, graduate students are often less than effective guidance and feedback in practical activities Sound of the effect of practical education. Finally, practical education is disconnected from industrial needs. At present, there is often a gap with the actual needs of the industry, and it is difficult for students to meet the practical application needs of the industry after graduation.

3 Optimization strategy of graduate education mode under the perspective of innovative talent training

3.1 Reform the framework of the graduate enrollment system

The formation of the current graduate enrollment system is not overnight, but the accumulation and precipitation of long-term graduate education work. Therefore, to reform the graduate admissions system framework, to adapt to the innovative talent training, achieve the purpose of optimizing graduate education mode, need to systemic adjustment from multiple dimensions: first, need to adjust the relationship between administrative rights and academic rights, to ensure that the academic personnel in the process of graduate admissions, reduce administrative intervention, improve the significance of academic orientation. Specifically, increase the proportion of tutor opinions in the graduate enrollment, reduce the intervention of administrative personnel, and make the graduate enrollment process pay more attention to the academic potential of students. Secondly, reform the form of enrollment examination, increase the proportion of interview and second examination, in order to investigate the students innovative thinking and practical operation ability. Specifically, gradually reduce the reliance on the written test, avoid excessive emphasis on standardized test scores, so as to provide more space for the selection of innovative talents. At the same time, to reform the form of the second interview, we can consider setting up special innovation projects or research plans to encourage students to show their innovative thinking and research ability. Finally, optimize the content of the postgraduate entrance examination, reduce the proportion of foreign language and political theory in the entrance examination, and increase the proportion of open questions to promote learning Students show their ability to innovate. Specifically, colleges and universities should design the examination questions with the characteristics of the college according to their own characteristics and disciplinary advantages, and encourage students to conduct interdisciplinary thinking and innovative practice. Through these measures, students with innovative potential can be better identified.

3.2 Optimize the setting up of graduate education links

In order to meet the needs of cultivating innovative talents and highlight the characteristics of graduate education in the new period, the optimization of graduate education should focus on the following aspects: First, in terms of education objectives, the training objectives of innovative talents should be defined, diversified talent training directions should be established, and the cultivation of graduate innovative spirit should be emphasized. Specifically, the current graduate training goals should be differentiated from the single academic talent training goal to the training goals of including applied and compound talents, so as to meet the needs of the society for different types of innovative talents. Secondly, in terms of curriculum setting, in addition to retaining the basic theoretical courses, we should strengthen the cooperation with the industry and add more practical courses, such as project-oriented learning, case analysis, experimental design, etc., so as to improve students practical operation ability. Specifically, the graduate course from the perspective of innovative talent training needs not only basic theoretical knowledge and the latest progress, but also rich and diverse of experimental contents, and the concept of cultivating graduate innovation ability runs through it. Finally, in terms of evaluation system, the promulgation of the new Degree Law in 2024 has brought new changes to the management of degree authorization in universities, and prompted universities to pay more attention to the quality of graduate education rather than just pursue quantity. According to the content of the new degree Law, universities should pay more attention to the comprehensive ability and innovative achievements of graduate students. In addition to the

traditional academic paper evaluation, it should also include multidimensional evaluation such as student project practice, innovative design and team cooperation. universities should strengthen and improve the evaluation system of thesis, comprehensively evaluate the process, finality and influence, and return to the knowledge evaluation itself, so as to promote the improvement of graduate training quality^[4].

3.3 Strengthen graduate education and practice activities

Postgraduate teaching practice activities are an important part of graduate education, aiming to help students understand the cutting-edge knowledge and practical operation skills. In view of the problems of superficial graduate practical education activities, insufficient resource input, weak guidance force and disconnection from the industrial demand, it is suggested that universities should enrich the practical education activities of graduate students and strengthen the effectiveness of practical education. the cooperation mode of "production and research" and generative artificial intelligence should be the focus of the reform of graduate teaching methods. On the one hand, through close cooperation with the industry, the actual needs and the latest technology dynamics into classroom teaching; on the other hand, the generative artificial intelligence technology is used to provide students with personalized learning paths and practical opportunities, and enhance the interactivity and pertinacity of learning. Through practical opportunities, graduate students can not only apply theoretical knowledge to practical work, but also have a deep understanding of the latest development of the discipline and industry needs. universities should actively adjust the internal management mechanism, enhance the connection with the industry, and provide more learning opportunities combined with practical work; the industry should provide more practice and practice platforms to contact the frontier technology and industry needs, so as to better transform theoretical knowledge into practical ability; the government should introduce corresponding policies to encourage and support the cooperation between universities and industry to create a favorable external environment for the cultivation of innovative talents. In short, graduate students should be helped to cross the traditional discipline boundaries and conduct more extensive and in-depth study.

4 Epilogue

To sum up, In order to achieve the goal of cultivating innovative talents, graduate education should clarify its strategic position, continuously increase the reform of graduate education, deepen the reform of investment mechanism of graduate education, the reform of graduate enrollment examination system, the reform of graduate training mode, the reform of degree authorization review system, and the construction of quality assurance and supervision system^[5], so as to promote the high-quality development of graduate education.

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