Journal of Education and Educational Research
ISSN: 2957-9465 | Vol. 1, No. 2, 2022

High Quality Cultivation Mechanism of Graduate Research and Innovation Ability in Post-epidemic Era

Jian Liu [1, *], Jiachen Ke [1], Jiaqi Guo [1], Yufeng Liu [1], Bing Hu [2], Fan Yang [1]

[1] College of Information Engineering, Nanjing University of Finance and Economics, Nanjing 210023, China
[2] College of Modern Posts, Nanjing University of Posts and Telecommunications, Nanjing 210003, China
[*] **Corresponding author**: Jian Liu (Email: liujian@nufe.edu.cn)

Abstract: In the post-epidemic era, it is of great significance to strengthen the training of clinical academic postgraduate students to enhance China's overall national strength. However, in the new situation of epidemic prevention and control, the current training model for academic master's in China cannot fully adapt to the needs of talent training in the post-epidemic era. Based on the research of relevant documents and literature, combined with the current situation of academic postgraduate training, this study summarizes the main problems existing in postgraduate training, and puts forward the following countermeasures and suggestions. We study the innovation training mechanism of graduate students from three aspects: teaching mode, tutor guidance and evaluation index. Finally, we combine the elements of scientific innovation with the characteristics of our professional background. In addition, we introduce academic innovation into the graduate training system to construct a high-quality academic graduate training mechanism in the post-epidemic era.

Keywords: High quality cultivation; Post-epidemic era; Academic postgraduate training.

1. Introduction

With the global spread of the novel coronavirus pneumonia (COVID-19), a large part of the global economy has entered a state of shutdown. At the same time, it has brought huge challenges and new opportunities for reform to all walks of life [1-3]. The fight against the novel coronavirus is a test for the country's governance system and capacity, and it also puts forward new requirements for the modernization of higher education governance. Regular epidemic prevention and control has become a habit, people will fight a protracted war against the epidemic, and the world has entered a post-epidemic era. Therefore, all countries are actively promoting the development of science and technology in the post-COVID-19 era, striving for the development of opportunities, encouraging society to actively promote science and technology empowerment, and giving full play to the optimization and integration effect of high-tech talents in the allocation of social resources [4-7].

The National Conference on Postgraduate Education was held in July 29, 2020. The Chairman Xi made an important instruction to the work of postgraduate education in China: postgraduate training should meet the needs of the development of the cause of the Party and the country, and cultivate a large number of high-level talents with both virtue and ability. The novel coronavirus pandemic has brought challenges to the training of graduate students. According to the spirit of the epidemic prevention and control documents, university departments have taken various measures at the same time and implemented the work of graduate students during the epidemic period through online platforms, including online course teaching, online scientific research guidance, online dissertation defense, etc [8]. Cloud guidance, while solving the problems brought by the epidemic, also makes our postgraduate guidance much more convenient. We pay more attention to thinking about how online postgraduate training can play a greater role in the improvement of talent training mode and quality, especially in the current "post-epidemic" situation, combined with the spirit of the National postgraduate education Conference, which mode and system should be explored for postgraduate training [9-11].

Due to the dense population of colleges and universities and the high mobility of returning students, epidemic prevention and control in colleges and universities in the post-epidemic era is more difficult than in other places. At present, the campus management mode of colleges and universities has the characteristics of semi-closed, the combination of online and offline teaching methods, the lack or reduction of practice links, and the increasingly prominent trend of network scientific research methods. These changes and the influence of domestic and foreign public opinions have led to profound changes in the ideological and psychological characteristics and behavioral characteristics of college graduate students. The ideological and behavioral characteristics of postgraduates are the basis for the study of educational countermeasures. Only by clarifying the ideological and behavioral characteristics of postgraduates in the post-epidemic era can we further strengthen the research on educational countermeasures of postgraduates in combination with the law of talent training in colleges and universities and the law of ideological and political education, and cultivate high-quality scientific and technologically innovative talents suitable for the needs of China economic and social develop.

In this context, China is attaching more and more importance to innovation in all walks of life, which is reflected in the field of education, especially in the field of postgraduate education. It has become an important part of the improvement of national comprehensive strength to implement scientific research innovation education for academic postgraduate students and actively guide, guide and tutor them to complete specific scientific research projects. Especially in the post-epidemic era, in order to realize the uninterrupted development of academic research in graduate education and to have new breakthroughs and development, it is also necessary to adjust and explore the methods of

graduate education path.

2. Existing Disadvantages

Although great progress has been made in quantity from the perspective of the current situation of Chinese academic research achievements of postgraduate students, there are still deficiencies in innovation capabilities, which still lead to quality improvement, and mainly exist the following disadvantages:

2.1. The teaching mode of the course is unitary and the result display is lacking

The teaching model of academic postgraduate courses is still being explored. In the current post-epidemic era, the classroom teaching model of our school mostly adopts the combination of "online and offline", and the classroom teaching process adopts the form of teachers' teaching of textbook knowledge and presentation of literature PPT. However, this teaching mode has some drawbacks. The lecture-oriented cramming teaching still follows the undergraduate teaching mode, and the subject-oriented graduate course is a prominent problem in the current graduate education. The lack of interaction between online teaching and students leads to low classroom efficiency. Curriculum teaching focuses on traditional theoretical knowledge and related skills, ignores the dissemination of the latest research and academic achievements, and lacks frontier, which is extremely unfavorable to the cultivation of students' scientific research and innovation ability.

2.2. The guidance method of the supervisor is slightly outdated, and the connection between teachers and students is not close enough

As the first person in charge of graduate training, the supervisor's effective guidance to the whole training process is conducive to the improvement of graduate innovation ability. Therefore, the level of supervisor's guidance is directly related to the cultivation of academic graduate students' innovative ability. At present, most academic graduate students in our school are guided by the "one-to-many" guidance mode, and the more academic graduate students supervised by the tutor, the more will distract the tutor's energy. In addition, the COVID-19 epidemic has caused a short-term suspension of academic discussion between the scientific research group and teachers. Forcing the intensity and frequency of academic guidance to decrease, resulting in the lack of continuity of postgraduate learning, enthusiasm gradually faded and other problems, which is obviously not conducive to the cultivation of academic postgraduate research ability.

2.3. The link between academic evaluation standards and scientific research innovation level is insufficient

The evaluation of innovation ability of professional talent cultivation is an important link in the training of academic graduate students. The existing evaluation system of graduate student innovation ability has some problems, such as single evaluation subject and method, fuzzy evaluation object and unreasonable evaluation index system, especially it is independent of the subject and professional background. At the same time, due to resource limitations, there is a lack of effective university-enterprise horizontal cooperation education in professional construction, and the cultivation and evaluation of graduate students' innovation ability is generally over-dependent on SCI or EI oriented "thesis only" phenomenon. Therefore, it is necessary to strengthen the research of evaluation subjects, evaluation methods and methods, evaluation indicators and standards, build a scientific and reasonable high-quality graduate academic innovation evaluation system, and give full play to its feedback and incentive role in the cultivation of graduate innovation ability.

3. Research content, objectives and problems to be solved

3.1. Research contents

The main research content of this topic includes the following parts, of which the construction idea is roughly shown in Figure 1:

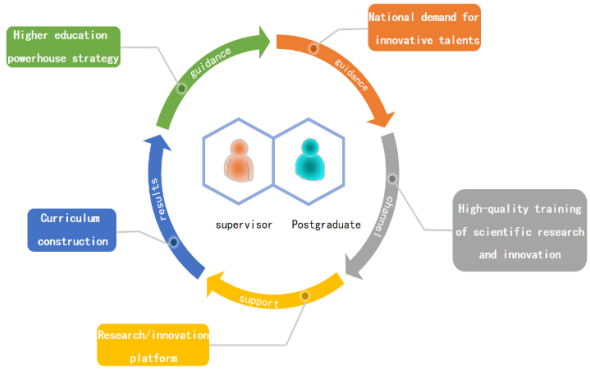


Figure 1. An idea map for the construction of high-quality research innovation training for academic graduate students

3.1.1. Research on teaching model design

Under the post-epidemic situation, the postgraduate teachers and teaching teams should specify specific work requirements in course preparation, teaching methods, teaching models and other links. According to the requirements of epidemic prevention and control in various regions, the postgraduates who can and cannot return to school are classified, and the "online + offline" collaborative teaching mode is adopted, in which the online teaching cannot be "one-size-fits-all", and the teaching system with professional characteristics such as the method and process of curriculum design for academic postgraduates is summarized. In the establishment of the teaching mode mechanism, "Internet +" education means are gradually introduced, and excellent network teaching resources such as CNKI, MOOCs and NetEase Cloud Class are used to improve the teaching design ability, so as to transform the hard indoctrination cramming teaching mode into the soft construction interactive learning and discussion mode, so as to enhance students' participation enthusiasm and learning efficiency in class.

3.1.2. Research in the field of supervisor

According to the academic tasks stipulated by the existing academic postgraduates, it will gradually explore and improve the graduate tutor guidance system, and clarify the characteristics and means of professional training for academic postgraduates in the "post-epidemic era". The traditional "free range" training mode has been criticized for a lot. In the special period of epidemic prevention and control, the non-contact communication between tutors and students

on the Internet also provides new ideas for exploring the "wireless free range" form of graduate training. Moreover, there are more "one-to-one" fixed guidance between tutors and students, which increases the sense of participation and gain between teachers and students. At the same time, foreign academic research groups will be attracted to participate in the exchange and guidance of the group, to promote the independent study of graduate research innovation and the enhancement of the connotation of academic cooperation.

3.1.3. Research on academic evaluation design

Take the graduate innovation ability as the core, the academic evaluation mechanism and supervision mechanism should be established and improved, and the thesis evaluation training program should be eliminated to explore the means of diversified academic graduate research innovation training ability. Encourage graduate students to actively participate in academic conferences at home and abroad, participate in graduate mathematical modeling, china graduates electronic design competition and other large domestic competitions, increase the opportunities for university-enterprise cooperation and horizontal communication, expand graduate students' cognition of cutting-edge problems and advanced methods, and cultivate their creative thinking and independent research ability. At the same time, new requirements are also put forward for the instructors to make better use of the online guidance mode and regularly discuss the progress of study and work by video. The academic evaluation design mainly studies the evaluation mechanism of high-quality academic achievements, and also involves the evaluation and assessment content of the instructors. However, the key point is how to integrate the high-quality education evaluation mechanism of academic postgraduates and cultivate high-level talents with the spirit of scientific research innovation.

3.2. Research objectives

Starting from the analysis of the characteristics of graduate innovative training in the post-epidemic era, this paper explores the construction of academic graduate training system from three aspects: teaching mode design, tutor guidance design and academic evaluation design. Finally, the following goals can be achieved:

3.2.1. Arouse students' enthusiasm for learning in and out of class

Postgraduate course teaching model design and extracurricular auxiliary learning links, and from both online and offline levels to cultivate students' scientific research and innovation learning skills, through the rich Internet learning resources, the academic frontier issues into the topic practice learning, further realize the research innovation ability training and sublimation. The connection between the design of course teaching and student demonstration enables teachers and students to truly participate in the reform of the course teaching mode, fully mobilize students' enthusiasm to participate in the course learning, and timely feedback the actual effect.

3.2.2. To design a high-quality training program for graduate students' scientific research and innovation ability in the post-epidemic era

In the training of academic postgraduates, the impact of the epidemic should be considered, and the "Internet +" educational resources should be re-integrated and designed. In addition, the integration of professional learning links and academic evaluation links should be explored in combination with professional and disciplinary characteristics. Explore various forms such as tutor joint training system and project consultation seminar, introduce relevant professional teachers to guide academic salon activities, combine scientific research innovation elements with the characteristics of professional background by adjusting the guidance mode and re-designing the evaluation index, and introduce academic innovation ideas into the graduate training system. Construct the training mechanism of high-quality academic postgraduates in the post-epidemic era.

4. Research features

The key issue of this research is to study how to implement it in the specific training process of graduate students, so as to achieve the goal of the cutting-edge innovation of scientific research and the collaborative drive of the cultivation of academic graduate students for the major needs of the country. Under the post-epidemic era, to make a positive exploration on the construction of professional scientific research innovation high-quality talent system. It has certain theoretical guidance and practical application value. How to integrate into online education and professional guidance more effectively is still a process of continuous optimization and improvement. Accelerate the establishment of innovation platform and industry-university-research cooperation, establish scientific, reasonable and diversified graduate achievement evaluation and assessment methods, and realize the post-epidemic era graduate research and innovation ability high-quality training mechanism with the organic integration of teachers and students, and realize the whole-process education and all-round education.

Through the construction of high-quality training mechanism for post-epidemic graduate students, it can effectively guide students' active learning and mobilize their enthusiasm to participate in learning, which not only conforms to the objective law of graduate study, but also further highlights the characteristics of "Internet +" enabling graduate education. At the same time, through the effective integration of teachers and students and the reform of the evaluation system, the new training mechanism has not only refined and expanded the academic graduate education in the theoretical content, but also promoted the improvement of the self-connotative and self-management ability of the graduate students. It has important practical significance for the cultivation of the academic innovation ability of the graduate students, and cultivated and delivered high-quality innovative talents for the country.

5. Conclusion

We are now in a post-pandemic era that has been honed by the pandemic. On the basis of reflecting on and absorbing the experience and lessons of the normal situation before the epidemic and the abnormal situation during the epidemic, postgraduate education should enjoy the advantages of online methods. Emphasis should be placed on institutionalization and individuation at the management level, knowledge imparting from hard indoctrination to soft construction, and the teaching assessment method should also transition from single form to diversified assessment. It is necessary to explore the use of online information and other forms to better control the quality of dissertation. In the era of "Internet +", the new normal of graduate education should be reconstructed

to promote the improvement of self-conformation and the cultivation of self-management ability of graduate students. We need to cultivate the innovation consciousness of graduate students and set up guidance courses on innovation and entrepreneurship for graduate students. At the same time, strengthen the combination of theory and practice, integrate practice resources. Through university-enterprise cooperation, we build a platform for postgraduate innovation and open up ways for postgraduate innovation.

Acknowledgment

This work was supported in part by a grant from the Degree and Postgraduate Education Project of Nanjing University of Finance and Economics in 2022 (No. Y21033) and a grant from the Higher Education, Reform and Development Project of Nanjing University of Finance and Economics in 2021 (No. GJGF202133).

References

[1] Yang K, Wen G, Wang J, et al. Complication and Sequelae of COVID-19: What Should We Pay Attention to in the Post-Epidemic Era[J]. Frontiers in Immunology, 2021, 12: 711741.

[2] Yuan J, Zou H, Xie K, et al. An assessment of social distancing obedience behavior during the COVID-19 post-epidemic period in China: a cross-sectional survey[J]. Sustainability, 2021, 13(14): 8091.

[3] Srivastava P R, Sengupta K, Kumar A, et al. Post-epidemic factors influencing customer's booking intent for a hotel or leisure spot: an empirical study[J]. Journal of Enterprise Information Management, 2021.

[4] Jones D. Postgraduate Education in A Postcurriculum Context[M]//Online Postgraduate Education in a Postdigital World. Springer, Cham, 2021: 179-195.

[5] Porter M A. The modification of method in researching postgraduate education[M]//The research process in educational settings. Routledge, 2012: 139-161.

[6] McInerney P, Green-Thompson L P. Theories of learning and teaching methods used in postgraduate education in the health sciences: a scoping review[J]. JBI Evidence Synthesis, 2020, 18(1): 1-29.

[7] Olivier B, Verdonck M, Caseleijn D. Digital technologies in undergraduate and postgraduate education in occupational therapy and physiotherapy: a scoping review[J]. JBI Evidence Synthesis, 2020, 18(5): 863-892.

[8] Mateos-González J L, Wakeling P. Student loans and participation in postgraduate education: the case of English master's loans[J]. Oxford Review of Education, 2020, 46(6): 698-716.

[9] Doughty L, Sinnema C, McKillop A, et al. The impact of postgraduate education in transition to practice programmes on new graduate nurses' knowledge and skills: A pre-post survey design[J]. Nurse Education Today, 2021, 102: 104888.

[10] Padró F F, Erwee R, Harmes M A, et al. Postgraduate Education in Higher Education. University Development and Administration Series[M]. Springer. 233 Spring Street, New York, NY 10013, 2018.

[11] S. Chen, B. Mulgrew, and P. M. Grant, "A clustering technique for digital communications channel equalization using radial basis function networks," IEEE Trans. Neural Networks, vol. 4, pp. 570–578, Jul. 1993.