

Reform Thinking and Practice of Innovative Ability Training of Clinical Medicine Professional Master under the Background of Substantial Expansion of Postgraduate Enrollment

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Abstract

Through the reform of the current postgraduate training mode and the way of mentoring and teaching, such as increasing the proportion of scientific research-related courses, raising the threshold for graduation, establishing a team of tutors to provide effective guidance to students, etc. The idea of forming a postgraduate scientific research team is proposed, and students of different majors and degree types are encouraged to participate in scientific research activities as a team, so as to improve the scientific research atmosphere and scientific research enthusiasm of professional master of clinical medicine (hereinafter referred to as “professional master”), in order to achieve the goal of improving the scientific research and innovation ability of “professional master”, put forward solutions for the problems encountered in the context of the “Double Tracks in One” policy and the large-scale expansion of postgraduate enrollment, and provide theoretical and theoretical ideas for the cultivation of innovation ability of “professional master”. Practical basis.

Keywords

Professional Master of Clinical Medicine, Creativity, Expansion of Postgraduate Enrollment, Graduate Research Team, Education Reform

1. Background

In the past ten years, our country has issued four postgraduate enrollment expansion policies, in 2003, 2009, 2017 and 2020. The introduction of these policies may be closely related to the SARS epidemic in 2003, the international financial crisis in 2008, the asset bubble in 2017, and the COVID-19 pandemic in 2020 (Wang & Ye, 2020). The latest enrollment expansion was in 2020. On March 4, 2020, the Ministry of Education issued the “Notice on Responding to the COVID-19 Epidemic and Doing a Good Job in the Employment and Entrepreneurship of the 2020 National College Graduates” (Ministry of Education the People’s Republic China, 2020). The expansion of postgraduate enrollment in 2020 has been clearly stated, and there are two main measures: 1) Mainly focus on related disciplines and professional degree categories (including clinical medicine) that are urgently needed in the national strategy and people’s livelihood field; 2) To the Midwest and Northeast China Regional colleges are skewed (Figure 1).

From the data in the table, it can be seen that in recent years, the number of postgraduate enrollments in our country has increased year by year, and the enrollments scale will be further expanded in 2020 due to the epidemic (Qi & Chen, 2020). Taking Youjiang Medical University for Nationalities for example, the school is located in Baise, Guangxi, in the western region of my country. It is one of the few universities in Guangxi that can train postgraduates in clinical medicine. The school’s graduate enrollment scale has increased from 164 in 2019 to 440 in 2021, is the result of the inclination of postgraduate enrollment to the Midwest.

2. The Impact of the Substantial Expansion of Postgraduate Enrollment

In early 2014, seven ministries and commissions of the State Council jointly

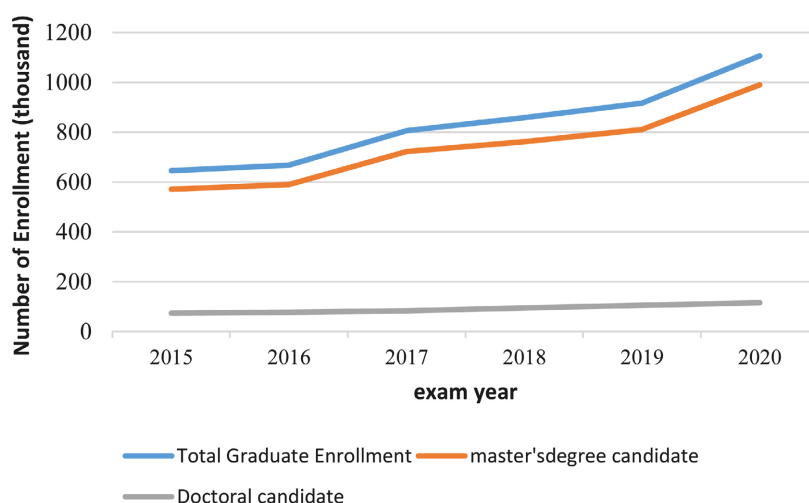


Figure 1. 2015-2020 national postgraduate enrollment statistics (Data from the education statistics of the Ministry of Education of the People’s Republic of China).

issued the “Guiding Opinions on Establishing a Standardized Training System for Resident Physicians” (Ministry of Education the People’s Republic China, 2016), requiring all provinces (autonomous regions and municipalities) to fully start the standardized training of resident physicians in 2015, and to basically establish a nationwide resident physician training system by 2020. Physician training system, all clinicians with bachelor’s degree or above who have entered medical positions will receive standardized resident training (for a period of 33 months). Professional master of clinical medicine (hereinafter referred to as “professional master”) are based on the “Double Tracks in One” training model (Zhou, Xu, & Wang, 2019), which means that professional master has dual identities of “postgraduates” and “training students”. Therefore, for professional master education, there will be more difficulties in the situation of expanding enrollment, mainly in the following aspects:

2.1. Insufficient Resources for Graduate Education

In recent years, our country’s investment in higher education has continued to increase, but related policies are still insufficient and unbalanced (Li, 2021). With the increasing proportion of postgraduate enrollment, the increase in educational resources cannot keep up with the speed of postgraduate enrollment expansion, and the situation of insufficient educational resources is unavoidable, especially in the central and western regions of the country, whether it is teachers, teaching and research facilities, scientific research funds, etc. will appear In the situation of “more monks and less porridge”, the lack of educational resources will inevitably affect the quality of postgraduate education.

2.2. Decreased Quality of Postgraduate Students

In 1998, the admission ratio of postgraduate students in our country was 21.17%. In 2020, the admission ratio was 32.43%. The admission ratio is increasing year by year. It is also a recognized fact that the quality of undergraduate education in our country is currently declining. This shows that in recent years, the enrollment standards and quality of graduate students have been declining (Ma, 2021). At this stage, the impact of the COVID-19 epidemic on the global economy is huge, bringing about a severe economic crisis and employment crisis. The practical problem of difficulty in finding employment has led to more undergraduates who can only choose to continue their studies to solve the employment problem. These students lack interest and enthusiasm for scientific research, and generally lack the spirit of innovation, hard study and research. Graduate study is only to improve the future. Even in order to escape the reality of employment difficulties, the only goal after admission is to graduate successfully. Therefore, the academic atmosphere in the postgraduate group has deteriorated, and the students’ scientific research ability and thinking ability are also reduced. These situations have seriously affected the postgraduate student’s overall quality.

2.3. The Student-Teacher Ratio of Postgraduate Education Has Improved

In the context of the substantial expansion of postgraduate enrollment, the growth rate of postgraduate mentors is far from keeping up with the speed of student enrollment expansion, which directly leads to the improvement of the student-teacher ratio in postgraduate education. The student-teacher ratio is the ratio of the number of enrolled students calculated according to a certain statistical method to the number of enrolled teachers in various types of education at all levels, or the number of enrolled students calculated by a certain statistical method that is borne by each of the enrolled teachers in various types of education (Yuan, Tang, & Dong, 2014). The student-teacher ratio reflects the ratio of mentors to students. A mentor has too many graduate students, and it is often difficult to give them detailed guidance. Some graduate students cannot even get the guidance of their mentors and are in a state of stocking at the master's level. The improvement of the student-teacher ratio will also lead to problems such as too little communication between teachers and students, indifferent relationships, and lack of personalized guidance for students, making it difficult to guarantee the quality of education.

3. A Preliminary Analysis on Influencing Factors of Professional Master's Innovation Ability

3.1. There Is Too Little Communication between Teachers and Students, and Scientific Research Resources Are Inclined to Academic Master

In the growth process of postgraduates, the "inheritance effect" of mentors is very important, and they play an important leading role in their "study, life, and scientific research" (Li & Zhang, 2014). The relationship between mentors and students is first of all the relationship between teaching and learning, and then a cooperative relationship. It is advocated that mentors and students develop collaboratively in daily scientific research. Medical postgraduate mentors themselves often hold positions in hospitals. Some mentors hold high positions and are busy with their daily work, and have little communication with the students they bring. In addition, a mentor usually leads professional master and academic master at the same time. Professional master is busy with clinical rotations and have less time for scientific research. Therefore, mentor often give priority to academic master to participate in research. In addition, the graduation requirements of the academic master are higher than that of the professional master, so the supervisor pays more attention to the training of the graduate students of the academic master and the scientific research.

3.2. The Construction of Scientific Research Platform Is Not Perfect

A sound scientific research platform is needed to conduct scientific research. The scientific research platform and the production-university-research system

play a key role in the cultivation of graduate students' innovative ability (Zheng, 2014). The support of the scientific research platform in terms of equipment, funding, technology and opportunities for communication with the outside world is very important for the cultivation of graduate students' scientific research innovation.

3.3. The Daily Rotation of Professional Master Is Busy, and the Academic Atmosphere Is Poor

According to the relevant training requirements, professional master should undergo 33-month clinical transfer training within the scope of secondary disciplines as regular trainees during the three-year training period (Chen, Zhang, & Xu, 2018). The daily work of professional master is busy, and some departments even require third-year students to arrange independent shifts. Under the background of enrollment expansion, more and more professional master has poured into various departments of the hospital, and some clinical teachers have gradually become hands-off, leaving most of the clinical work to students to complete. Therefore, professional master's work is heavy, there is no extra time for research and study. Faced with the exhausting clinical rotation, the vast majority of professional master said that it is enough to graduate smoothly, and they do not have too many expectations for scientific research. In such an environment, it is difficult to form a good academic atmosphere between professional masters.

3.4. Insufficient Scientific Research Teaching for Professional Master

During the three-year study of the professional master's degree, the theoretical courses have only part of the medical foundation, and a small amount of scientific research basic courses, such as scientific research writing, medical statistics, etc., and the content of the study is not deep enough. Training is not very helpful, and has no practical significance for professional master (Yue, Zhang, & Yan, 2021). In terms of scientific research design, experimental methods, and basic experimental operations, there are very few opportunities for professional master to learn. Most of the experimental data of professional master are completed under the leadership of laboratory teachers or academic master and only a few people can complete basic experimental operations independently.

4. Reform Strategies for the Cultivation of Innovative Ability of Professional Master

4.1. Improve the Overall Quality of Mentor and Reform the Way Mentors Teach

1) Improve the overall quality of postgraduate mentor. Excellent mentors are the basis for cultivating excellent graduate students. First, we must improve the selection system for graduate mentors and improve the overall quality of the graduate mentor team. We cannot lower the selection criteria for mentors in or-

der to meet the needs of expanding enrollment. Secondly, it is necessary to strengthen the communication and training between mentors to ensure that the mentor team always stands at the forefront of academics and better complete the training tasks of postgraduates; 2) strengthen the communication between mentors and students, establish a perfect mentor evaluation and assessment mechanism, It is stipulated that there should be regular and effective communication between mentors and students to ensure that postgraduates can receive effective guidance from the mentors; 3) Establish a joint training team of mentors, combined with the current situation of clinical medical mentors, the mentors have heavy daily clinical tasks, and a mentor team can be established. Professional graduate students carry out unified management (Li, Qu, & Su, 2021). In addition, young doctors with high academic qualifications and high scientific research level in the department can join the joint training team of mentors to assist mentors in guiding postgraduates.

4.2. Change the Course Structure and Enrich the Course Content

The daily clinical work of professional master is heavy, and they can only complete theoretical courses by starting the school in advance and concentrating on evenings and weekends (Xu, Tang, & Huang, 2021). In the limited study time, through the reform of the theoretical course content, some courses that have been learned in the undergraduate period, such as pathology, pharmacy and ideological and political education, can be appropriately cancelled or changed to elective courses or online learning content, no longer unified offline learning; For ideological and political education, it can be integrated into the daily learning and communication of the department, and it is stipulated that the department must conduct ideological and political theme education every week. The time saved is used to strengthen the study of literature retrieval, statistics, basic experimental operation, scientific research writing and other courses, and enhance the literature retrieval ability, reading ability and writing ability of professional master.

4.3. Strengthen the Management of Clinical Teachers

Improve the quality and sense of responsibility of clinical teachers, do not allow all clinical work to be completed by professional master, improve relevant management regulations, and establish an effective monitoring and feedback mechanism. For example, questionnaires are regularly distributed to investigate professional master' satisfaction with clinical teachers and whether they have played a good teaching role.

4.4. Raising the Graduation Threshold for Professional Master

As mentioned above, under the current situation of expanding enrollment, the number of postgraduates is increasing, but the quality of students is decreasing. In addition, the graduation threshold for professional master has also been lowered. Most schools only require the publication of a review related to the re-

search direction to graduate. The lowering of the graduation threshold makes some students further lose interest in scientific research and spend three years in vain. Therefore, the approach of lenient entry and strict exit can be adopted to raise the graduation threshold of professional master and guide them to contact and study scientific research.

4.5. Improve the Research Atmosphere of Professional Master

To create a good scientific research atmosphere among professional master, hospitals and schools must first work together to reduce the clinical workload of students. At the same time, scientific research training is carried out on a regular basis, so that professional master interested in scientific research can receive effective scientific research guidance. Secondly, postgraduates can be encouraged to form scientific research teams in different majors. There are professional master and academic master in the team. Academic master is generally better than professional master in scientific research, which can play a good leading role and encourage students to conduct multidisciplinary exchanges. Third, improve the innovation incentive mechanism (He, 2019), and encourage graduate research teams to apply for innovative projects. For the projects approved, certain incentives and supporting funds will be given, which will reduce the burden of mentors' funds and at the same time strengthen the participation of postgraduates and postgraduates, and create a positive atmosphere for scientific research and innovation.

5. Conclusion

Under the background of the "Double Tracks in One" policy and the large-scale expansion of postgraduate enrollment, the scientific research innovation ability of professional master has been further weakened, and difficulties have been encountered in cultivating innovation ability. In this paper, through reforming and improving the current curriculum structure of professional master, hospitals and schools cooperate to relieve the clinical pressure of students, reform related training systems, and guide students to scientific research, Master certain scientific research methods, and on this basis, achieve the purpose of further improving the ability of scientific research and innovation, It provides direction and basis for the cultivation of professional master's innovation ability in medical colleges and universities in my country, especially in the western region, and helps to further explore and optimize the professional master's training plan of the "Double Tracks in One" model, Make efforts for the country to cultivate innovative medical talents that meet the requirements of the times.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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