

# Thoughts and Practice on Teaching Reform of Clinical Medical Undergraduate Interns under the Background of “Double Tracks in One”

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## Abstract

By reforming the traditional teaching mode, and giving the inspection way, put forward the diversified and “classification guidance” mode of teaching, fully arouse the enthusiasm of students, help trainees to establish scientific research thinking, to achieve the goal of improving the effect of practice and increasing the success rate of postgraduate entrance examination, for the problems existing in the unity of “Double Tracks in One” policy solutions, for further training of high quality medical personnel to improve the basis.

## Keywords

The Traditional Teaching, Education Reform, Double Tracks in One, The Internship, Classification Guidance

## 1. Background

Clinical practice is the main course of practical teaching for undergraduate students majoring in clinical medicine. It is closely connected with many basic subjects, such as physiology, internal medicine, surgery, infectious disease, immunology, etc. It is a bridge between basic theory and practice. This learning stage plays an important role in the cultivation of clinical thinking and clinical skills of clinical students. In recent years, in order to meet the needs of the situation, China’s medical education departments have carried out the standardized training for residents and the “dual-track” training mode for clinical medical graduate students, which has brought a great impact on the clinical practice of undergraduates (Zhang, Huang, & Gong, 2019; Yan, 2017). In addition, due to the

outbreak of novel Coronavirus, the overall requirements for medical students are increasingly high, which may make our original training scheme unable to meet the medical and health needs in the future (Wei, Zhou, & Luo, 2021). The main problems are as follows: 1) The traditional teaching method can not arouse the enthusiasm of interns to learn; 2) Lack of scientific research experience, low success rate of postgraduate entrance examination. In view of the problems faced by clinical medical undergraduates in the internship stage mentioned above, we put forward a reform plan to provide theoretical basis for the training of medical talents in the future.

## 2. The Impact Brought by “Double Tracks in One” Cultivation Mode

Clinical practice is the stage of transition from campus to society for medical students, the effect of practice affects their future choice of direction. According to our previous analysis, more and more vocational graduate (hereinafter referred to as “professional master”) and raw resident standardization training (hereinafter referred to as “Pearson”) into the hospital, with the teacher will be more clinical operation for professional master’s and gauge Pearson, undergraduate students at the time of clinical practice operation opportunity is less, As a result, they are unfamiliar with clinical operation techniques, lack of doctor-patient communication skills and poor quality of writing medical records. Previously, we also proposed relevant reform measures (Wei, Zhou, & Luo, 2021), and found that the clinical practice effect of medical students can be improved through practice. However, through further research, we found that the current intern training and management mode still has deficiencies, mainly in the following aspects:

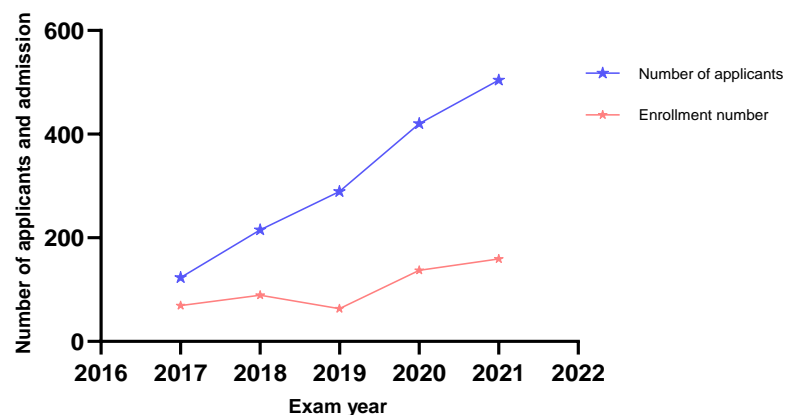
### 2.1. Traditional Teaching Mode Is Single

As early as the 20th century, the Residency system was proposed in the United States, that is, in the final year of medical school, interns are assigned to study with clinicians in various hospitals (Hong & Ying, 2021). During the one-year internship, there were many small lectures, case discussions and other courses for students in residential training, and interns were required to attend as “observers”, with few opportunities to express their own opinions. Moreover, these courses are lecture-based learning (LBL), which focuses on the indoctrination of theoretical knowledge and has unique advantages in the mastery of basic knowledge. Although LBL uses multimedia technology to carry out clinical case teaching, which can quickly understand the mechanism of disease occurrence with pictures and pictures, such teaching method is teacher-oriented, which is not conducive to arousing students’ learning interest and enthusiasm (Wang, Xu, & Ding, 2020). Lee thought (Li, Wang, & Wang, 2021), such as people live on 57 cultivates students teaching, classification of traditional teaching mode, teaching traditional teaching model using concentrated form small lectures, case discussions, and classified teaching according to different grade students take the hierarchical teaching, and presided over by cultivating students to prepare, and ex-

plain, while teaching the teacher is responsible for the review. The results of this study showed that the students were better than the traditional teaching mode group in terms of their imaging skills and diagnosis scores, 360 evaluation scores and satisfaction survey results. This study shows that the single traditional teaching mode cannot meet the needs of different types of residential training students, which is similar to the conclusion of Hou, Liu and Wang (2021). However, both the traditional teaching mode and the classified teaching reform mode are mostly aimed at residential trainees, and interns do not participate more in small lectures and case discussions. As a result, many interns think that small lectures and case discussions are aimed at residential trainees and have nothing to do with interns.

## 2.2. Lack of Scientific Research Experience, Low Success Rate of Postgraduate Entrance Examination

Clinical medicine than other professional has certain particularity, the current hospital for clinical medical students demand is higher, should not only have solid clinical theory foundation, must have certain scientific research ability, and many medical colleges and universities undergraduate stage of learning are not scientific research experience, even the most basic materials refer to all have no master, This is very adverse to the future employment or postgraduate entrance examination. Some of the undergraduate students choose employment, and some of them choose postgraduate entrance examination for further study in order to improve their abilities and find better medical positions. In recent years, with the rapid development of education undertakings, poured out more and more talents, especially after policy introduced resident standardization training, professional master has the advantage of “the unity of” four certificate, a lot of training medical students into the hospital, the school admission requirements for students is becoming more and more high, in Youjiang ethnic medicine clinical medical school, for example, From 2017 to 2021, the number of applicants increased by 381 each year, and the enrollment rate increased from 18.69 percent to 80.25 percent. (Figure 1)



**Figure 1.** The number of graduate students and enrollment in Youjiang Medical University for Nationality in each year.

One's deceased father grind includes first and second interview two phase, enter graduate second-round exam conditions requires that students in the first phase of the score is high enough, to enter the second interview doesn't mean must be admitted, the second interview stage for students' professional English, professional knowledge and scientific research ability, during the period of undergraduate students without scientific research experience is not competitive in the second interview stage, This may be one of the reasons for the low success rate of postgraduate entrance examination in medical schools; In addition, interns have to follow clinical teachers for ward rounds and surgeries during the internship stage, so the time schedule is tight and there is not enough time for postgraduate entrance examination study. In addition, due to the simultaneous consideration of clinical work and scientific research, the teacher did not have time to explain clinical cases to interns in detail, and the theory and skill examination of the subject was also perfunctory, which could not achieve the purpose of the internship. Of course, it is also related to the lack of students' subjective learning initiative and ability to independently think about clinical problems (Wang, Min, & Wei, 2021). Therefore, how to improve students' scientific research ability and improve the success rate of postgraduate entrance examination without affecting the practice is a challenge to the administrators of schools and hospitals.

### 3. Intern Education Reform Strategy

#### 3.1. Adopt Diversified Teaching Mode

In the traditional teacher-centered teaching mode, the teaching mode is fixed and single, and students' learning enthusiasm is not high, which requires the adoption of diversified teaching methods. There are many modern teaching and training modes, among which problem based Learning (PBL), bedside teaching and case based learning (CBL) are commonly used in medical teaching. PBL is based on a clinical problem, with rotary/intern doctors as the main body, form of group discussion, under the participation of clinical teachers, around a question to be discussed in the learning process, including the layout cases discussion task before class, after class to give students some time to consult books and literature, students stay problem to search for information, and arrange the discussion between group, Differences can be pointed out to teachers during case report, which can solve students' confusion well. Bedside teaching is under the leadership of clinical teachers with rich clinical experience, doctors contact patients in rotation, and participate in practical operation through visual touch, tapping, listening, analysis, inspection and other forms. The most important feature of bedside teaching is the training of clinical practice ability of rotating physicians (Zhang, Zhang, & Peng, 2021). This is due to the fact that bedside teaching is a part of clinical work. Due to the heavy clinical work, discussions are often hurried and not in-depth enough, or even ignored by clinical practice (Qin, Lin, & Wu, 2021). CBL is a teaching model based on "cases", advocating teach-

er-led, student-centered, problem-based and case-based teaching. Yang, Yang and Chen (2021) found that PBL teaching mode combined with bedside teaching mode can fully stimulate the interest of rotating physicians and mobilize the initiative of learning, and is better than PBL teaching mode alone and bedside teaching mode in terms of theoretical knowledge, clinical diagnosis and diagnosis plan. Zhang, Li and Su (2021) adopted PBL + CBL mode and clinical cases as the pilot to enable Guipei doctors to study with questions and find answers, so as to help Guipei doctors to establish a good clinical scientific thinking logic, and found that it can improve the scores of students' comprehensive clinical skills examination. Ai, Zhang and Du (2021) used PBL combined with CBL teaching mode to train interns in urology teaching, and found that PBL+ CBL teaching mode can improve the theoretical content and practical operation content of interns, indicating that this teaching mode has a definite effect. Therefore, we suggest PBL + CBL + bedside teaching mode for interns to teach. Clinical cases are given in advance for interns to find answers after class, and discussion is conducted in groups. Finally, the instructor will talk about the characteristics of the case by bedside, which can greatly deepen students' impression and improve the effect of practice.

### **3.2. Adopt the Training Mode of "Grading Guidance" and Reform the Examination Way of Leaving the Subject**

Due to the overall planning of clinical and scientific research tasks, many clinical teachers do not have time to teach interns carefully, and the theory and skills of interns are arranged and solved by students after class, which cannot achieve the purpose of "examination". Internship of clinical medical students' time is 1 year, generally from may start practice, and every year in December, the last week of the weekend is the test time graduate students of clinical medicine theory, in order not to waste students review time, from May to December period, we suggest that each department is given to each month for unified exam, The content of the examination is related to the postgraduate theory examination. January to May is the preparation period for the reexamination of graduate students, during which the examination can be changed to the reexamination of relevant content and the skill examination of practicing physicians can be arranged. Targeted education reform can not only help interns prepare for postgraduate exams, but also help students strengthen their confidence in postgraduate reexamination, and to a certain extent, improve the admission rate of students and the passing rate of medical practitioners. Because at the time of graduate second-round exam many schools will be scientific research ability as an important evaluation indexes, many undergraduate clinical medical students are not exposed to the scientific research, don't even refer to literature, therefore, intern is given assessment should increase the literature reading, and report in the form of PPT, can develop the students' ability of literature reading, Modern medical training policy in line with clinical and scientific research practice.

In addition, in the actual clinical work, the department has not only live

Pearson, also have professional master's, we suggest using "classification guidance" teaching mode, the intern in the department by senior living Pearson guiding learning, including case writing and doctor-patient communication, clinical skills, etc., if encounter unexplained pathological mechanism, consult with the teacher, This can not only relieve the pressure of guiding teachers, but also enable them to devote more time and energy to medical and educational undertakings, and also enable Pearson to accumulate experience more quickly in the process of guiding. Of course, not all interns are supervised by Pearson, professional master students also need such experience, professional master students can be responsible for leading interns into the laboratory on weekends and other times, so that interns can understand some basic work of the laboratory. At the same time, the intern is given PPT report done by professional master's guide, set the content of the given PPT to rotary department common disease of + the latest literature research, not only can understand related disease pathogenesis, diagnosis and treatment plan, and can also by looking at the literature, the latest research progress of cultivating students' ability of reading literature, instill scientific research, It helps to improve the clinical and scientific research level of interns (Li, Meng, & Wei, 2021).

#### 4. Conclusion

Under the background of "dual track integration", with the continuous development of the medical profession, the graduation and academic requirements for students of clinical medicine will continue to rise. One-year internship just happens to be the bridge between graduation and postgraduate entrance examination, which is related to the future development of interns. The purpose of our educational reform is: 1) To motivate interns to take the initiative to learn, so that they can remember the mechanism, diagnosis and treatment of related diseases with the most profound impression; 2) Through the reform of the way of exit examination, the use of past postgraduate entrance examination real questions instead of perfunctory self-designed exit examination, to help students review the relevant knowledge points; 3) Using "graded guidance" to teach students, on the one hand, can help students and professional master students to have a deeper understanding of clinical cases, but also exercise their ability of literature reading and analysis; On the other hand, interns also benefit from this process, which helps interns accumulate relevant scientific research ideas, helps interns stand out in the second round of postgraduate examination, and greatly alleviates the conflicts brought by the background of "dual-track" reform. In this paper, through the reform of the traditional teaching and assessment methods, fully mobilize the enthusiasm of students, help students to contact scientific research earlier, in order to enhance the effect of practice, improve the success rate of postgraduate entrance examination, alleviate the conflict caused by the background of "dual track integration", provide basis for improving the effect of clinical medicine undergraduate practice.

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## Conflicts of Interest

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

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