

# *Exploration Self-direct Learning Methods Based on the Training of Medical Interns' Self-direct Learning Ability*

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**Abstract:** To study the self-direct learning methods in the development of self-direct learning ability of medical interns and analyze the influencing factors. This study included 150 medical interns were selected and divided into a control group and an experimental group. The interns in the traditional mode are the control group, and the interns in the practice group rotation system are the experimental group. There are 75 medical students in each group. And there is no significant difference in the general data of teachers' professional titles, education and teaching qualifications ( $P>0.05$ ). Before the experiment, there was no significant difference in the total scores of self-direct learning and thinking abilities of the two groups of medical interns. After the experiment, the total scores of self-direct learning and thinking abilities of the experimental group were higher than those of the control group, and the difference was statistically significant ( $p<0.05$ ). After the internship, the satisfaction and assessment scores of the interns in the experimental group were higher than those in the control group, and the difference was statistically significant ( $p<0.05$ ). Finally, during the clinical practice period, we should pay attention to cultivating ability of the independent learning and thinking of medical interns, and the application of the practice group rotation system can promote students' independent learning and thinking.

## 1. Introduction

Higher education development plan of China has positioned the goal of medical education at the cultivation of students' lifelong learning ability. Independent learning is the basis of lifelong learning. Medical students must cultivate their independent learning ability to adapt to the large amount of medical knowledge, high turnover rate, and precise service technology, high standard. Although self-direct learning has been valued in the current university education, the self-direct learning of medical students still cannot be carried out scientifically and effectively, which directly affects the learning effect and ability of students, thus affecting the quality of teaching [1]. Studies have shown that college students in our country generally have the problem of insufficient independent learning ability, lack of learning motivation, and inability to master efficient learning methods. To this end, this study investigates the current situation of medical students' self-direct learning ability during their internship in the affiliated hospital, and conducts an internship group

rotation system to promote students' self-directed learning and thinking. The internship group rotation system is proposed based on the job rotation system, which can expand knowledge in clinical practice, promote horizontal communication among interns in the same period, mutual learning, and constantly summarizing experience, which will have a positive impact on future development. It can enable interns to experience the work and style of different teachers, and cultivate overall awareness, collaborative spirit, and independent thinking ability through empathy [2].

## 2. Materials and Methods

### 2.1. General Information

This article aims to assess the autonomous competence of 150 medical interns who will intern in our department between January 2021 and January 2023. 150 medical students were selected as the research objects. Data analysis showed that there were 84 females and 66 males, with an average age of  $(21.22 \pm 2.75)$  years old. In addition, 20 have internship experience and 130 have no internship experience. In terms of household registration, 60 interns come from rural residents and 90 as urban residents. In order to measure the independent learning and thinking of interns during the internship, the "College Students' Independent Learning Scale", "Learning Engagement Questionnaire", and "Knowledge Management Scale" were issued, and they passed the assessment of skills and knowledge and filled in the "Student Satisfaction Survey Questionnaire" [3]. The response rate of the above questionnaires was 100% when collected. Through this study, it is hoped that medical interns can be encouraged to improve their independent learning and thinking abilities through various methods.

### 2.2. Method

150 medical interns were selected and divided into a control group and an experimental group. The interns in the traditional mode are the control group, and the interns in the practice group rotation system are the experimental group. There are 75 students in each group. There was no significant difference in the general data of teachers' professional titles, education and teaching qualifications ( $P > 0.05$ ). The specific implementation of the experimental group is as follows:

(1) Combining with departmental majors, setting corresponding learning goals for interns, deepening their understanding of the majors they have learned through drills, and deepening their professional identity will help stimulate their enthusiasm for professional skills learning. Supervising and urging to develop a good habit of taking notes during the practice, and recording the key content of the teacher-guided learning process. Taking notes can not only deepen memory and understanding, but also help to summarize and generalize professional knowledge, which is convenient for future review and reference [4].

(2) Making a reasonable plan for interns during their internship period. The teaching teacher sets the learning and work content for the interns on the day, supervises the interns to complete, and allows them to arrange their time reasonably, and put the important and necessary work content in front. Do it to form a good habit of learning [5]. Cultivate interns' self-monitoring ability, let them make an internship plan, and have a self-discipline management of their behavior, concepts and internship goals in the process. Combined with the objectives of the internship, the professional skills are constantly improved in the process of work practice to achieve self-defined goals [6].

(3) Grouping seminars are held regularly to establish a communication platform to help group interns solve problems encountered in work and study. The teachers need to understand the intern's knowledge of the profession and exchange clinical experience with them. If you have any questions, please contact us to guide them to independently consult relevant literature, and regularly review

the relevant professional knowledge learned during school [7].

(4) Focusing on cultivating interns' interest. Interest is a good teacher and friend of study. Medical interns will actively explore interesting problems encountered during clinical practice. The teaching teacher can enhance the interest of medical interns by combining clinical problems and real life. It can also promote their interest in professional knowledge by strengthening the professional thinking of medical interns, and when medical interns learn something. Timely encouragement makes them feel satisfied with what they have learned, and strengthens their confidence in learning to promote their interest in learning [8]. Strengthening the professional identity and professional self-confidence of medical interns can improve their self-directed learning ability.

(5) Paying attention to intern learning strategy training. Clinical work is more complicated, and interns should be good at using fragmented time to study. Without the correct guidance of teachers and lack of interest in learning, it is very likely that time will be wasted [9]. For example, when the interns are unable to answer during ward rounds, they can be urged to follow the law of forgetting and ask questions in a timely manner, so that important content is not easy to forget. To this end, educators should pay attention to students' learning strategy training, learning skills training and learning time monitoring, regulation and guidance, and strive to improve their self-directed learning ability.

(6) Internship for a period of time (can be two weeks or four weeks) with two-way choices for both teachers and students. In this process, the students choose the tutor, and the tutor chooses the students, so as to optimize the cooperation between the two parties [5]. Bring a teacher to guide them on how to manage their time, ask questions and give professional advice. In addition, teachers support students during the writing of their dissertation, first helping them to form an idea that can be further developed through in-depth research. Throughout the process, teachers communicate with them regularly to ensure a constant exchange of feedback, ultimately developing independent thinking and problem-solving skills.

### **2.3. Observation Indicators**

The self-directed learning scale for college students was used to assess the learning and thinking abilities of newcomers and end-of-internship interns. At the end of the internship, the "Student Satisfaction Survey Form" and the "Learning Engagement Questionnaire" are used to evaluate the final internship effect and the problems existing in the learning input to guide the correction. Preliminary statistics show that the two processes of self-directed learning and thinking skills have an equal impact on the final score, with a maximum of 50 points awarded for each section and a total of 100 points awarded. Higher scores on the scale indicate that students have stronger independent learning and critical thinking skills.

### **2.4. Statistical Methods**

In this study, we performed statistical analysis using SPSS21.0 software to explore the data differences between the two groups. Data are presented in both counts (n) and measurements (s). Statistical tests revealed various differences between the two datasets, the results showing significant differences when examining values below 0.05.

### 3. Results

#### 3.1 Comparison of Self-Direct Learning and Thinking Ability between the Two Groups

Table 1: Comparison of self-direct learning and thinking ability between the two groups

Group	Self-direct learning	Thinking ability
Control Group	37.98±3.23	40.21±2.09
Experimental group	47.24±1.76	46.29±2.17
X <sup>2</sup>	8.121	6.885
P	P<0.05	P<0.05

#### 3.2 Comparison of Satisfaction between Two Groups

Table 2: Comparison of Satisfaction between Two Groups

Group	Super satisfaction	General satisfaction	Rarely satisfaction	Degree of satisfaction
Control Group	40	22	13	78.6%
Experimental group	51	22	2	97.3%
X <sup>2</sup>				10.271
P				P<0.05

### 4. Discussion

From this study, we have obtained results that the scores self-direct learning and thinking ability of experimental groups is higher than control group (Table 1). Furthermore, the satisfaction and assessment scores of the interns in the experimental group were higher than those in the control group, and the difference was statistically significant ( $p < 0.05$ ) (Table 2). This indicates that via training medical students can improve their self-directed learning and thinking abilities. Today's medical knowledge is developing rapidly, and it is a general trend for multi-disciplines to intersect, integrate and develop together. Students will find that most of the knowledge taught by teachers in school will be outdated after two years of leaving school. So, the ability to learn independently will become a fundamental ability for survival in the 21st century [10]. Medicine is a special major, and students need to master a lot of basic knowledge. During the four years of school study, the teacher mainly imparts and explains the knowledge. So that students' self-direct learning ability is affected and suppressed by nature to some extent [11]. At present, although the interns are very busy every day, many interns still gain little after leaving the department. The knowledge they have acquired is disorderly and unsystematic. The reasons lies in the passive input of its means of acquiring knowledge [12]. Therefore, it is extremely important to strengthen the cultivation of medical students' self-direct learning ability during the internship stage. This study obtained the status quo through independent learning investigation and learning engagement investigation, and proposed the practice group rotation system to experience the work and style of different teaching teachers, and cultivate overall awareness, collaborative spirit, and independent thinking ability through empathy. "Confucius teaches different people according to their aptitude", stimulate students' learning interest and enhance their independent learning awareness through different teaching teachers [13]. Graduation thesis as a starting point to cultivate students' ability to use learning strategies in independent learning. It has the characteristics of basic scientific research training and professional conferences, and cultivates the ability of independent learning and innovation. The

practice group rotation system teaching mode changes the teaching methods of "indoctrination" and "teaching and teaching" under the traditional teaching mode. The students' learning initiative and enthusiasm have mobilized, so as to cultivate students' ability to discover and solve problems [14,15]. At the same time, in the guidance process, the teaching teacher should pay attention to communicating with the students. A good teacher-student relationship is the guarantee to improve the quality of clinical practice education. A teaching teacher directly teaches 2-3 students, and organizes groups from time to time. The seminar is conducive to effective communication and in-depth communication between teachers and students. In this kind of learning, students become the dominant party in learning, and the teacher's guidance greatly enhances students' independent learning ability.

This study shows that factors affecting self-direct learning include family, peers, teachers, educational environment and students' personal characteristics, while teachers' personal charm and educational methods play an important role in students' self-direct learning. The qualitative research results of Maaiké Dorine Endedijk [16] show that by setting initial learning goals, teachers' self-regulation can affect students' self-discipline, and the use of effective teaching methods can also improve students' self-regulation. In the process of two-way selection, it can also improve teachers' self-regulation ability. The sense of identification with students has stimulated both parties' enthusiasm and initiative in learning, as well as their enthusiasm for participation. The teacher carefully designs the teaching objectives according to the interests of the students to achieve twice the result with half the effort. In addition, there are many ways to increase the self-learning ability of interns, such as using cycle learning mode, on-site simulation, PBL and so on. Clinical practice teaching teachers can guide medical interns to make full use of network resources for learning and time management, and promote the improvement of self-direct learning ability. The role of intrinsic learning motivation, computer self-efficacy and learning engagement in facilitating higher learning effectiveness in a web-based learning environment [17]. And findings Learning motivation and computer self-efficacy positively influenced students' learning engagement, with computer self-efficacy having a more substantial impact. Compared with the traditional teaching mode, the practice group rotation mode allows teachers to understand students more deeply, encourage and guide interested students to participate in their scientific research activities, develop their scientific thinking ability and teach them basic scientific research methods. In addition, the knowledge, expertise, moral cultivation and personality charm of different teachers will also have a positive effect on students, so that their comprehensive quality will be improved unconsciously. The cultivation of independent learning ability involves many aspects. During the clinical practice period, we should pay attention to cultivating of independent learning and thinking ability of medical interns. The application of the practice group rotation system can promote students' independent learning and thinking.

There are still some deficiencies in this study. Although the researchers tried their best to ensure the maximum change of the participants, and consider the sampling and characteristics of the participants, the results may still be incomplete.

## 5. Conclusion

It is recommended that teachers be aware of students' need for special guidance before implementing self-learning ability methods. Concurrently, the students should monitor their own learning progress, identify the areas where they are lacking, and make efforts towards self-improvement. The joint efforts by the facilitators and students themselves may be helpful to make students independent and lifelong learners.

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