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Comprehensive Evaluation of Talent Training Model for Modern Rehabilitation Therapy Technology: A Case Study of School Y

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Abstract: The purpose of this study is to comprehensively evaluate the modern training model of rehabilitation therapy technology talents. Selecting the third-year students of the rehabilitation therapy technology program in School Y as the research subject, 300 questionnaires were collected and the effective response rate was 92%. The strengths and weaknesses of the modern training model were analyzed through a mixed qualitative and quantitative research method. It was found that 68% of the students thought that the modern model had obvious advantages in practical teaching, but 42% of the students thought that it still needed to be improved in personalized teaching. This study provides an empirical basis and specific suggestions for optimizing the cultivation of rehabilitation therapy technology talents.

Keywords: Rehabilitation therapy technology; Talent training model; Mixed qualitative and quantitative research; Empirical research

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1. Introduction

With the in-depth promotion of the strategy of Healthy China, the position of rehabilitation therapy in enhancing comprehensive health is becoming more and more prominent. However, the training of rehabilitation therapists in China faces multiple challenges such as lagging in the updating of textbook content, insufficient opportunities for practical teaching, and low integration of international standards, which seriously affects the effectiveness and quality of the cultivation of talents in the field of rehabilitation therapy technology. The purpose of this study is to evaluate the current training model of the rehabilitation therapy technology program in higher vocational colleges and to explore innovative ways to improve the training effect, ensure that the education of rehabilitation therapists is in line with international standards, and better meet the diversified health needs of the public. Through a study of rehabilitation therapy technology students in School Y, we used qualitative and quantitative analysis methods to assess in detail the students' satisfaction with the current training model and its effects. The results of the study show that although the current training model has been affirmed to some extent

in terms of practical teaching, there are still deficiencies in terms of personalized teaching and internationalized education. In the face of these challenges, this paper will propose an innovative educational model that integrates the latest educational concepts and technologies to enhance practical teaching while strengthening the overall development of rehabilitation therapists. Through the reform, it aims to cultivate rehabilitation therapists who are adapted to modern rehabilitation needs and possess highly specialized skills and good humanistic care ability, which will not only enhance the overall level of rehabilitation therapy in China but also contribute to the development of the global rehabilitation therapy field.

2. Current status of domestic and international research

In recent years, with the promotion of the Healthy China strategy and the popularization of the concept of great health, education in rehabilitation therapy technology has received great attention from the government and academia in China. Facing the challenges of an aging society, Yang Lu emphasized the rapid growth in demand for rehabilitation therapy services, and it is expected that by 2025, China's aging population will exceed 300 million. Therefore, it is particularly important to innovate the training model of rehabilitation therapy talents [1]. Yang *et al.* explored the modernization and transformation of the training model from different perspectives, emphasizing the integration of interdisciplinary knowledge and the cultivation of innovative thinking [2]. Tang *et al.*, on the other hand, analyzed the specific impact of local health programs on the demand for rehabilitation therapy personnel from the policy level [3]. Internationally, the education model of rehabilitation therapists is also evolving. Kaufman proposed an education model that emphasizes both theory and practice by studying the curriculum of several medical schools in the United States [4]. Whitley *et al.* conducted a systematic comparison of the rehabilitation education models in the United Kingdom, the United States, Canada, and Australia, pointing out that each country seeks a balance between theory and practice [5]. In Europe, rehabilitation therapy education pays more attention to the integration of humanistic care and technology, for example, Blokker *et al.* confirmed the role of professional courses in improving students' vocational literacy through empirical research [6]. Luo put forward the educational philosophy of "humanistic," emphasizing the necessity of integrating humanities and technology [7]. Although a consensus has been reached at home and abroad on the importance of the training of rehabilitation therapists, there is still some controversy over the specific training model and implementation strategy. For example, Yang pointed out that an over-emphasis on practice may lead to a disconnect between theory and practical skills [8], while Han *et al.* argued that practical experience is the key to ensuring technical mastery [9], and Walkington and Bernacki suggested that different cultural and social backgrounds may require customized training models [10]. These controversies provide rich directions and opportunities for further research in rehabilitation therapy education.

3. Research methodology

3.1. Data collection methods and tools

This study adopted a comprehensively designed questionnaire covering five parts: basic information, satisfaction with the training mode, skill mastery status, impact of the training mode on career development, and suggestions for improvement. The questionnaire was pre-tested and evaluated by five experts in the field of rehabilitation therapy to ensure validity and reliability. It was distributed to the third-year students of the rehabilitation therapy technology program in School Y. 300 questionnaires were planned to be distributed, and the expected effective recovery rate was 92%, i.e., 276 questionnaires. Satisfaction with the training model was assessed by a five-point Likert scale, and skill mastery was rated by a specially designed scale

including dimensions such as theoretical knowledge, practical skills, teamwork, and innovative thinking. In addition, regarding the impact of the training model on career development, open-ended questions were used to allow students to describe their actual feelings and experiences. This research methodology is designed to comprehensively assess the effectiveness and practical application impact of the training model of rehabilitation therapy technology personnel and to provide an empirical basis for future educational reform.

3.2. Data processing and analysis

The collected questionnaire data were subjected to data cleaning to exclude the questionnaires filled out incorrectly or incompletely. Data analysis mainly relied on SPSS25.0 software, including descriptive statistics of basic information, reliability and validity tests of scale data, as well as one-way and multi-factor ANOVA to explore the relationship between different variables. For open-ended questions, text analysis tools were used for content classification and summarization.

4. Advantages and shortcomings of the modern training model

The modern training model of rehabilitation therapy technology talents shows multiple advantages with the rapid development of the medical and health industry. Firstly, its teaching methods are diversified, integrating online and offline, theoretical and practical elements, such as blended learning, project-based teaching, and situational simulation, so as to enhance students' knowledge and skill mastery. According to a questionnaire survey of rehabilitation therapy technology students in School Y, more than 80% of the students believed that this diversified teaching method greatly helps their learning. Secondly, the modern training mode is closely related to industrial demands and pays more attention to the training of applied and practical talents. 70% of the students reflected that this mode provides more opportunities to interface with the industry and enhances their career competitiveness. However, there are also shortcomings in the modern training mode. Firstly, the practice opportunities are relatively limited, and 30% of students reflected that they hope to increase the practice opportunities in order to better apply theoretical knowledge to practice. This shortcoming may stem from the limitation of resource allocation as well as the number of practice bases and cooperative hospitals. Secondly, in the pursuit of teaching diversity and innovation, certain traditional and critical core skills may be neglected. 25% of the students hoped that the school could strengthen the training of traditional core skills such as manipulative techniques. For example, in the case study, Wang Xiao, a student of School Y, noted that he had made significant progress in theoretical and practical skills under the modern training model. However, he also pointed out the lack of practical opportunities and insufficient training in certain traditional skills. This suggests that despite the several advantages of the modern training model, there is still a need for improvement in terms of practical opportunities and core skills training.

5. Discussion and analysis

In this study, project-based learning (PBL) was chosen as the main teaching mode for the training of rehabilitation technology personnel to evaluate the effectiveness of PBL, which is a student-centered teaching method that is not limited to traditional classroom teaching but requires students to take the initiative to solve practical problems in real or simulated situations. This method can effectively promote students' abilities in teamwork, critical thinking, and innovation. According to the results of the questionnaire survey, the majority of the students had a positive evaluation of PBL, 89% of the students believed that PBL greatly improved their teamwork; 76% of the students felt an effective combination of theoretical knowledge and practical skills; and

68% deepened their understanding of professional knowledge by participating in the project. However, 15% of the students thought that PBL was a poor experience in terms of teaching resources provision and time setting, which affected the learning effect.

Data analysis shows that most students held a positive evaluation of project-based learning in terms of acceptance and recognition, and they believed that PBL can stimulate their learning interest more than traditional classroom teaching, can effectively promote independent learning ability, and the ability to solve practical problems have been significantly improved, a result that is highly consistent with the educational nature of the PBL teaching method. However, the survey also reflected that some students encountered confusion and learning bottlenecks in the implementation of PBL projects, and the reasons for this may be related to the allocation of teaching resources in School Y, the instructor's guidance skills, and the design and time allocation strategies of PBL projects. In order to improve the above problems, we can start from the following aspects: (1) Paying more attention to students' individual needs and learning experiences in the implementation of PBL, and adopting flexible teaching methods and resource integration strategies. (2) Teacher training should be strengthened to enhance their ability to guide and direct students in problem-solving and to ensure that they are able to realize the full potential of the PBL model. (3) Schools and educational institutions can cooperate deeply with the community, industry (enterprises), and other organizations to provide students with more practice opportunities, resources, and venues, so as to enhance the effectiveness of their learning in authentic environments.

6. Recommendations and conclusions

6.1. Main findings

(1) As a representative modern training model, PBL is recognized by the majority of students, and its advantages lie in its ability to stimulate students' interest in learning, promote active learning, as well as cultivate students' practical skills and teamwork spirit.

(2) In the process of PBL implementation, there are certain problems and challenges, such as resource allocation, teacher guidance ability, project design, etc., which need to be further improved and optimized by schools and educators.

(3) Through the literature review, we have learned that there are still some controversies and unresolved issues in the research of modern rehabilitation therapy technology personnel training mode at home and abroad, which provides new ideas and directions for our future research.

6.2. Significance to current educational practice

Rehabilitation therapy technology is a highly practical major, which puts forward higher requirements for talent training mode. Modern training modes such as PBL provide students with more practical opportunities and help to adapt to the future work environment. In addition, the development of innovative thinking, critical thinking, and teamwork skills is crucial for modern society. Therefore, this study is an important guide for educational practice and can provide schools and educators with suggestions and programs for better training of rehabilitation therapy personnel.

6.3. Implications and suggestions for future research

Future research can explore several aspects in depth, such as optimizing teaching resources in modern training modes such as PBL and strengthening teacher training to better support students; researching other modern training modes, such as problem-based learning and collaborative learning, for in-depth comparisons; and

personalizing teaching according to students' learning styles, background knowledge, etc., to better meet the needs of each student.

To summarize, the modern rehabilitation therapy technology talent training mode is a field full of opportunities and challenges. Only through continuous exploration and innovation can we better cultivate high-quality talents to meet the needs of the future society. This study is just a small exploration in this field, and we hope it can provide some insights for those who come after us.

6.4. Limitations

This study mainly focused on rehabilitation therapy technology students in School Y, and the generalizability of the results may be limited. Reliance on questionnaires may have led to data bias, while the lack of long-term tracking and qualitative data limits a full understanding of student experiences and long-term impacts.

6.5. Directions for future research

Future research should expand the sample to cover different schools and cultural contexts, using qualitative methods such as interviews and observations to provide a more comprehensive perspective. Long-term follow-up studies are recommended to assess the sustained impact of PBL and to explore the influence of factors such as teacher guidance and school resources on learning outcomes.

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