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Practice of the SSP and CBL Hybrid Teaching Model with Ideological and Political Elements Integrated into the Rehabilitation Assessment Technology Course

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Abstract: This study explored the application and practice of integrating ideological and political elements into the hybrid teaching model of Student Standardized Patients (SSP) and Case-based Learning (CBL) in the Rehabilitation Assessment Technology course. Through a one-semester teaching experiment with 95 rehabilitation therapy major students, methods such as questionnaires, classroom observations, and learning outcome assessments were used to analyze the impact of this teaching model on students' professional knowledge acquisition, clinical thinking ability, professional qualities, and ideological and political qualities. The research results show that the SSP and CBL hybrid teaching model integrated with ideological and political elements can significantly improve students' learning interest and participation, enhance professional skills and clinical thinking ability, and effectively cultivate students' professional ethics and social responsibility. This study provides new ideas and practical references for the teaching reform of rehabilitation medicine education.

Keywords: Ideological and political elements; Student standardized patients; Case-based learning; Rehabilitation assessment technology; Hybrid teaching model

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1. Introduction

Rehabilitation Assessment Technology is one of the core courses of the rehabilitation therapy technology major, playing an important role in cultivating students' professional skills and clinical thinking ability [1]. However, traditional teaching methods often focus on the teaching of theoretical knowledge, which is difficult to stimulate students' learning interest and initiative, and is also not conducive to the cultivation of students' practical ability and innovative thinking. At present, the field of higher education pays more and more attention to integrating ideological and political education into professional course teaching to achieve the organic unity of knowledge imparting and value guidance [2,3]. In this context, how to effectively integrate

ideological and political elements into the Rehabilitation Assessment Technology course and adopt innovative teaching methods to improve teaching quality has become an important issue in the current rehabilitation medicine education reform.

Student Standardized Patient (SSP) is a teaching method in which students play the role of standardized patients. It promotes the cultivation of students' practical skills and communication abilities by simulating real-life clinical scenarios [4,5]. Case-Based Learning (CBL) is a teaching method that cultivates students' abilities to analyze and solve problems by analyzing and discussing real or fictional cases [6]. Both methods emphasize students' active participation and practical application, which highly coincide with the characteristics and teaching objectives of the Rehabilitation Assessment Technology course [7]. This study aims to explore the application effect of integrating ideological and political elements into the SSP and CBL hybrid teaching model in the Rehabilitation Assessment Technology course.

2. Research methods

2.1. Research subjects

In this study, 95 students majoring in rehabilitation therapy technology of the 2022 grade in the college were selected as the research subjects. They were randomly divided into an experimental group (48 people) and a control group (47 people). Both classes used the "Rehabilitation Assessment Technology (3rd Edition)," a "13th Five-Year Plan" textbook published by the People's Medical Publishing House. There were no significant differences in age, gender, learning skills, etc. between the two groups of students ($p > 0.05$).

2.2. Research design

The experimental group adopted the SSP and CBL hybrid teaching model integrated with ideological and political elements, while the control group adopted the traditional lecture-based teaching method. The teaching experiment was carried out in the first semester of the sophomore year of rehabilitation therapy technology major students. According to the requirements of the talent training plan, there were 18 teaching weeks, 4 class hours per week, and a total of 72 class hours. The two groups of students used the same textbooks and learning resources and were taught by the same main teacher.

2.3. Teaching plan design

The teaching plan design of the experimental group adopted a three-stage teaching method, including pre-class preparation, in-class teaching, and after-class extension. In the pre-class preparation stage, the teacher selected a group member to be the SSP for the current task, selected typical common clinical cases from the school-enterprise cooperation case database, and provided students with medical records and test materials, including the patient's daily activities and functional impairment assessment materials. Before class, with the help of tools such as wheelchairs, crutches, and braces, students were guided to experience functional impairments to restore the real-life changes of the physical-psychological-environmental-social model after the patient's functional impairment as much as possible. Students previewed relevant knowledge points and case materials through the online platform to prepare for in-class learning.

The in-class teaching stage was divided into six stages:

(1) Introduction (10 minutes); The student standardized patient appeared, and the group of students simulated the clinical interview scene to inquire about the SSP's medical history.

(2) Group discussion (35 minutes): The group discussed based on the patient's functional impairment situation collected from the interview, and submitted the interview results and the next detailed assessment plan on the learning platform.

(3) Report and communication (25 minutes): Representatives of each group reported the discussion results, and the whole class discussed together.

(4) Teacher's comment (25 minutes): The teacher summarized the key knowledge points, guided students to think about relevant ideological and political elements, and sorted out the specific steps and precautions for plan implementation.

(5) Skill operation (45 minutes): Students carried out practical operation training of rehabilitation assessment technology.

(6) Reflection and summary (20 minutes): Students shared their learning experiences, and the teacher summarized the course.

In the after-class extension stage, students completed relevant assignments and reflection reports, and the teacher provided answers and guidance through the online platform to consolidate and deepen the learning effect.

2.4. Integration of ideological and political elements

In the teaching process, the following five aspects of ideological and political elements were organically integrated into the curriculum content:

(1) Professional ethics: Through case analysis and role-playing, the professional ethics and service awareness of rehabilitation therapists were emphasized to cultivate students' professional responsibility [8].

(2) Humanistic care: In the skill operation training and case discussion, students were cultivated to have empathy and respect for patients, and the patient-centered service concept was emphasized.

(3) Social responsibility: By discussing the role of rehabilitation medicine in improving people's livelihood and promoting social harmony, students were guided to recognize the importance of their major to social development [9].

(4) Innovative spirit: Innovative thinking training was integrated into the curriculum design, and students were encouraged to explore the innovative application of rehabilitation assessment technology to cultivate their scientific research and innovation awareness.

(5) Patriotism: By introducing the development process of rehabilitation medicine in China and comparing the current situation of rehabilitation medicine at home and abroad, students' professional pride and ambition to serve the country were stimulated.

2.5. Evaluation methods

A diversified evaluation method was used to comprehensively evaluate the teaching effect:

(1) Questionnaire survey: At the end of the semester, an anonymous questionnaire survey was conducted on the two groups of students to understand their learning experiences and satisfaction, including evaluations of teaching methods, content arrangements, and the integration of ideological and political elements.

(2) Learning outcome assessment: It included final theoretical exams, skill operation assessments, and case analysis reports to comprehensively evaluate students' knowledge acquisition, practical ability,

and clinical thinking level.

(3) Ideological and political quality assessment: Through students' reflection reports and group discussion performances, the improvement of their ideological and political qualities was evaluated, including professional ethics, humanistic care, social responsibility, and innovation awareness [10].

2.6. Statistical analysis

SPSS 25.0 software was used for data analysis. Measurement data were expressed as mean ± standard deviation (SD), and the *t*-test was used for inter-group comparison; counting data were expressed as rate (%), and the χ^2 test was used for inter-group comparison. $p < 0.05$ was considered statistically significant.

3. Results

3.1. Comparison of learning satisfaction

The results of the questionnaire survey at the end of the semester showed that the overall satisfaction of students in the experimental group with the course was significantly higher than that of the control group (92.5% vs 78.3%, $p < 0.01$). In terms of learning interest, participation, and course harvest, the scores of the experimental group were also significantly higher than those of the control group ($p < 0.05$).

Table 1. Comparison of learning satisfaction of the two groups of students (mean ± SD, full score 5 points)

Item	Experimental group (n = 48)	Control group (n = 47)	t-value	p-value
Learning interest	4.52 ± 0.43	3.85 ± 0.61	6.987	< 0.001
Classroom Participation	4.68 ± 0.38	3.92 ± 0.57	8.459	< 0.001
Course harvest	4.59 ± 0.41	3.98 ± 0.53	7.126	< 0.001
Teaching method	4.71 ± 0.36	3.76 ± 0.62	10.254	< 0.001
Overall satisfaction	4.63 ± 0.39	3.91 ± 0.55	8.317	< 0.001

3.2. Comparison of learning outcomes

The results of the final assessment showed that the scores of the experimental group in theoretical exams, skill operations, and case analysis were significantly higher than those of the control group ($p < 0.05$). The specific comparison is shown in **Table 2**.

Table 2. Comparison of learning outcomes of the two groups of students (mean ± SD, full score 100 points)

Item	Experimental group (n = 48)	Control group (n = 47)	t-value	p-value
Theoretical exam	85.6 ± 7.2	79.8 ± 8.5	4.127	< 0.001
Skill operation	88.3 ± 6.9	82.1 ± 7.8	4.685	< 0.001
Case analysis	86.9 ± 7.5	80.5 ± 8.3	4.396	< 0.001

3.3. Evaluation of clinical thinking ability

The scoring results of the case analysis reports showed that the abilities of students in the experimental group in problem identification, analysis and reasoning, plan formulation, and innovative application were significantly better than those of the control group ($p < 0.05$) (**Table 3**).

Table 3. Comparison of clinical thinking ability assessments of the two groups of students (mean ± SD, full score 10 points)

Assessment item	Experimental group (n = 48)	Control group (n = 47)	t-value	p-value
Problem identification	8.7 ± 0.9	7.5 ± 1.2	6.321	< 0.001
Analysis and reasoning	8.5 ± 1.0	7.3 ± 1.3	5.789	< 0.001
Plan formulation	8.6 ± 0.8	7.4 ± 1.1	6.952	< 0.001
Innovative application	8.3 ± 1.1	7.1 ± 1.4	5.324	< 0.001

3.4. Improvement of ideological and political qualities

By analyzing students' reflection reports and group discussion performances, it was found that the performances of students in the experimental group in professional ethics awareness, humanistic care spirit, social responsibility, and innovation awareness were significantly better than those of the control group. 84.5% of the students in the experimental group said that through the course learning, they had a deeper understanding of the social value of rehabilitation medicine and enhanced their professional sense of mission (**Table 4**).

Table 4. Comparison of ideological and political quality assessments of the two groups of students (mean ± SD, full score 5 points)

Assessment item	Experimental group (n = 48)	Control group (n = 47)	t-value	p-value
Professional ethics awareness	4.58 ± 0.42	3.92 ± 0.61	7.126	< 0.001
Humanistic care spirit	4.62 ± 0.39	3.85 ± 0.58	8.459	< 0.001
Social responsibility	4.55 ± 0.45	3.78 ± 0.63	7.987	< 0.001
Innovation awareness	4.49 ± 0.48	3.71 ± 0.65	7.654	< 0.001

4. Discussion

The results of this study show that integrating ideological and political elements into the SSP and CBL hybrid teaching model can significantly improve the teaching effect of the Rehabilitation Assessment Technology course. This innovative teaching method not only enhances students' learning interest and participation but also effectively improves students' professional knowledge acquisition, clinical thinking ability, professional qualities, and ideological and political qualities.

By having students play the role of standardized patients and conduct clinical case analysis, the SSP and CBL hybrid teaching model provides students with a learning environment close to reality, effectively stimulating students' learning interest and initiative. The results of classroom observations and questionnaire surveys both show that the classroom participation of students in the experimental group is significantly higher than that of the control group. This may be because role-playing and case analysis are more likely to resonate with students, and group discussions provide students with sufficient opportunities for expression and communication [11].

The research results show that the performance of students in the experimental group in theoretical exams and skill operation assessments is better than that of the control group. This indicates that the SSP and CBL

hybrid teaching model helps students better understand and apply professional knowledge [12,13]. Through the participation of student standardized patients and case analysis, students can combine abstract theoretical knowledge with specific clinical practices, thus deepening their understanding and memory of knowledge [14]. At the same time, frequent skill operation training is also conducive to students' proficient mastery of various specific rehabilitation assessment techniques.

The scoring results show that the abilities of students in the experimental group in problem identification, analysis and reasoning, plan formulation, and innovative application are significantly better than those of the control group. This shows that the SSP and CBL hybrid teaching model can effectively cultivate students' clinical thinking ability [15]. By analyzing and discussing real-life clinical cases, students learn how to identify key problems from complex situations, use the knowledge they have learned for analysis and reasoning, and develop reasonable solutions. The cultivation of this ability is of great significance for students' future clinical work.

Integrating ideological and political elements into the teaching process not only enriches the curriculum content but also provides students with opportunities to think deeply about issues such as professional ethics and social responsibility. The research results show that the performances of students in the experimental group in professional ethics awareness, humanistic care spirit, social responsibility, and innovation awareness are significantly better than those of the control group. This indicates that through situational learning and case discussions, students can better understand the social value of rehabilitation medicine and enhance their professional identity and sense of mission.

The successful practice of this study shows that the SSP and CBL hybrid teaching model integrated with ideological and political elements has good generalizability. This teaching model is not only applicable to the Rehabilitation Assessment Technology course but can also be extended to other medical professional courses. By designing corresponding scenarios and cases according to the characteristics of different courses and integrating appropriate ideological and political elements, the organic unity of knowledge imparting and value guidance can be achieved.

5. Conclusion

The application of the SSP and CBL hybrid teaching model integrated with ideological and political elements in the Rehabilitation Assessment Technology course can effectively improve students' learning interest and participation, enhance the mastery of professional knowledge and skills, cultivate clinical thinking ability, and improve professional qualities and ideological and political qualities.

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Disclosure statement

The authors declare no conflict of interest.

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