Application of the "Closed Loop" Online to Offline Blending Teaching Method in Binocular Vision

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Abstract: Objective To explore a new"closed loop"online to offline blending teaching method and evaluate its effect in the course of binocular vision. Methods The class one of Optometry 2014 was chosen as experimental group and used the new"closed loop"online to offline blending teaching method; the class two was chosen as control group and used traditional teaching method, both class had 42 students. Final examination scores, experimental examination scores and the evaluation scores of the teachers of the two groups were compared by t-test respectively, students self-assessment results of the two groups were compared by chi-square test. So that the teaching effect of "closed loop"online to offline blending teaching method was evaluated. Results The final examination and experimental examination scores of the experimental group were both higher than the control group significantly (t=5. 767, P<0. 05; t=3. 862, P<0. 05), the experimental group students had a better self-assessment than the control group significantly about learning interest (X2=7. 358, P<0. 05), understanding (X2=7. 041, P<0. 05), self-learning ability (X2=21. 711, P<0. 05), summary ability (X2=13. 733, P<0. 05), analytical ability (X2=12. 587, P<0. 05) and innovation ability(X2=17. 856, P<0. 05). The clinical teachers' evaluations of the experimental group were better than the control group significantly (standardization of practices: t=5. 336, P<0. 05; application ability: t=7. 751, P<0. 05; Case analytical ability: t =6. 438, P<0. 05; Case management ability: t=6. 510, P<0. 05;) Conclusion The "closed loop" online to offline blending teaching method can help to cultivate students' autonomous learning ability and comprehensive analysis capability and so on, which reaching a good teaching effect and ensuring the teaching quality.

1. Introduction

In the context of higher education informatization, information technology carries the mission of educational reform and has become an advantageous tool for the development and transformation of higher education [1]. In recent years, the rapid development of MOOC (Massive Open Online Courses) as one of the forms of online education has made people see the clue of deep integration of information technology and higher education. Since 2013, Chinese universities have actively joined the MOOC platform [2]. However, practice has proved that the shortcomings of the online learning form cannot completely obliterate the unique value of traditional face-to-face courses [3]. Therefore, only by combining online education with offline classroom teaching can innovative teaching models play the unique role of higher medical education. charm.

2. Objects and Methods

2.1 Research Object

Selected class 1 of 2014 clinical medicine (direction of ophthalmology and optics) (undergraduate medicine) as the experimental class, 42 students, using closed-loop O2O mixed teaching method to teach it; class of 2014 clinical medicine (direction of ophthalmology and optics) 2 The class serves as a control class, with 42 students using traditional classroom teaching methods. The results of the two classes of students in the college entrance examination (t=0. 555, P=0. 581),

the basic course of ophthalmology (optical foundation: t=1. 294, P=0. 199), basic ophthalmology: t=1. 121, P=0. 266) The differences in basic conditions are not statistically significant and are taught by the same teacher according to the same syllabus.

2.2 Research Methods

2.2.1 Teaching Method of Experimental Class

The closed-loop O2O hybrid teaching method is based on the core concept of promoting students' deep learning, and is oriented by the theme (problem/project), borrowing the structure of the flipped classroom, restructuring the teaching process, and enabling students to conduct online thinking and discussion through offline knowledge. The combination of systematic and in-depth exploration promotes its thinking, application and eventually internalization into its own cognition. The teaching process is divided into four stages: autonomous learning stage, collaborative learning stage, inquiry learning stage, and expansion and extension stage. The four stages are not carried out independently, and sometimes intersect and penetrate each other.

2.2.2 Teaching Method of Control Class

The control class is taught according to traditional teaching methods, that is, classroom teaching and laboratory teaching. Classroom teaching refers to the book "Binocular Vision" published by the People's Medical Publishing House, focusing on interaction with students; the experimental class carefully guides students to perform various operations and watch videos and conduct case analysis. At the same time, it will also open an online learning platform for students, and provide the same online learning resources and learning guidance as the experimental class. However, online learning is not included in the regular teaching, and is not restricted or evaluated.

2.3 Observation Indicators

Final exam scores: the two groups use the same set of exam questions and strictly implement the separation of teaching and examination; exam question types include 45 single choice questions (1 point x45), multiple choice questions 15 questions (1 point x15), simple Answering 2 questions (8 points x2), dissertation 1 question (12 points), application questions 1 question (12 points), objective questions account for 60%, subjective questions account for 40%, the content involves the concept and principle of normal binocular vision, binocular The significance and inspection of various parameters of visual function, analysis and treatment of abnormal binocular visual function, etc.

Experimental assessment results: the standardization of the examination of the parameters of the binocular vision function of the students, the analysis of clinical cases of abnormal binocular vision, etc., the same assessment content and assessment standards are adopted for the two groups, and the separation of teaching and examination is strictly implemented;

Student questionnaire survey: After the course ends, investigate the self-evaluation of the two groups of students on the teaching effect. The content mainly includes whether the course can help improve learning interest, knowledge comprehension ability, self-study ability, inductive summarization ability, analytical problem solving ability, Innovative ability, etc., each question has 3 options, strong, average, weak;

Investigation feedback from the internship base: After six years of internship in the Department of Optometry of the hospital, the two groups of students collected the evaluation of the instructive performance of the teachers in the internship base to the students. , Practical application ability, case analysis ability and case processing ability (25 points for each item, a total of 100 points).

2.4 Statistical Analysis Methods

Statistical software SPSS20. 0 was used for statistical analysis of the experimental data. Measurement data was expressed as mean ± standard deviation (±s), using t test; count data was expressed as rate, using X2 test. P<0. 05 was considered statistically significant.

3. Results

3.1 Comparison of Final Exam Results and Experimental Assessment Results

The average value of the final exam results and experimental assessment results of the experimental class are higher than the control class, and the difference is statistically significant.

3.2 Comparison of Student Questionnaires

After the course, through a questionnaire survey on the two groups of students, the results showed that the experimental class students' self-evaluation in learning interest, self-learning ability, knowledge understanding, summarizing ability, analytical problem-solving ability, innovation ability and other aspects are higher than the control class , And the difference is statistically significant.

3.3 Comparison of Survey Feedback from Internship Bases

Collected the evaluation of the teaching teachers of the practice base on the two groups of students. The results show that the average value of the teaching teacher's examination operation standardization, practical application ability, case analysis ability and case processing ability are higher than the control class, and the difference All have statistical significance.

4. Discussion

4.1 The Meaning of Closed-Loop O2o Mixed Teaching Method

4.1.1 "Closed-Loop O2O" Teaching

Transform the existing MOOC/SPOC/micro-class-based flipped classroom teaching model of "starting online (pre-school guidance), and finally offline (classroom teaching), (ie Online to Offline)" one-way teaching mode, In the entire teaching and learning process, the online and offline "two-way" organic combination, make online education and offline education an extension of each other's structure, and ultimately constitute a complementary, cyclic O2O teaching model.

4.1.2.2 "Hybrid" Teaching

Organically combine aspects of learning methods, learning spaces and learning resources to provide students with comprehensive learning support. In terms of learning methods, it combines independent learning, collaborative learning and inquiry learning; in the learning space, it realizes the organic combination of online and offline, in-class and out-of-class; in learning resources, online quality resources (video resources and non-video resources)), internal resources (textbooks, teachers, laboratories) and external resources (industry experts, partners practice places, etc.) have been organically combined.

4.2 The Role of Closed-Loop O2o Mixed Teaching Method

Xi'an Medical College is a young medical college and ophthalmology is an emerging discipline. Currently, our school's ophthalmology department is still in the "imitation" stage of the ophthalmology education teaching model in developed countries and domestic famous schools. Can "look at the source and sigh". Information technology has crossed the barriers of time and space, which has enabled us to have a smoother dialogue with leading universities, industries, and enterprises at home and abroad. Information technology helps to share teaching resources to build "localized" high-quality resources, and helps teachers to share to build a "three-dimensional" expert network.

4.2.1 The Blending of Multiple Learning Methods Conducted in Stages Promotes Deep Learning for Students

The traditional teaching model makes it easier for students to complete the shallow learning of isolated memory and non-critical receiving of knowledge, and the training goal of "applied and

innovative" talents required by modern higher medical education requires educators to change the teaching model To promote students' deep learning [5]. Online education is difficult to implement the transfer and application of knowledge, and the collaborative exploration of overturning the classroom to the classroom, and the closed-loop O2O hybrid teaching method takes the intention to transfer, problem-oriented extracurricular inquiry learning, expansion and extension activities as important links into the teaching cycle Internally, through self-directed learning-collaborative learning-exploratory learning-extension and expansion of the step-by-step teaching process, we firmly grasped the five major characteristics of deep learning: "critical understanding, information integration, construction reflection, transfer application, and problem solving". .

4.3 Problems That Should Be Paid Attention to in the Teaching Process of the Closed-Loop O2o Mixed Teaching Method

4.3.1 "Localization" of High-Quality Educational Resources is a Prerequisite for the Development of Closed-Loop O2o Hybrid Teaching Methods

The division of colleges and universities puts forward different requirements for talent training, and the requirements for students' ability are also very different. Therefore, college teaching cannot adopt "bringism", and the online learning form is directly transplanted into the classroom teaching process of colleges and universities. It is necessary to fully recognize the gaps in education concepts, students, market needs, and professional target positioning. The high-quality online resources will be selected and reconstructed locally, and organically integrated with offline education resources, so that all types of high-quality teaching resources are more in line with the learning needs of students in this school can provide students with more personalized and more effective learning support.

4.3.2 Relying on Multi-Party Cooperation and Providing "Multi-Subject" Teaching Services is the Quality Assurance of the Closed-Loop O2o Hybrid Teaching Method

The closed-loop O2O teaching method is no longer a traditional classroom teaching and self-study mode after the class. Teachers participate in the guidance and assistance throughout the entire teaching cycle, which puts forward a higher level of teachers' teaching design, classroom organization, and subject knowledge. Requirements, the school's teaching management department needs to strengthen the training of teachers, in addition, the formation of teaching teams is also an inevitable requirement. Therefore, we pay attention to strengthening the cooperation between schools, colleges, schools and enterprises, and actively hire industry experts and teachers to establish a "multi-subject, three-dimensional" teacher network to make up for the weakness of the school's teachers, thus providing students with multiple levels and multiple dimensions Support for learning and comprehensively improve the teaching level.

In summary, the closed-loop O2O hybrid teaching method has deep interactive online and online in the entire learning cycle of autonomous learning, collaborative learning, inquiry learning, expansion and extension, etc., which has changed the existing O2O teaching. The "offline" single-line teaching model combines the online and offline "two-way" organically, so that the high-quality online resources and the offline teaching are an extension of the structure of each other, and ultimately form a complementary, cyclic "closed loop". At the same time, an organic blend of learning space, learning resources, and learning methods has been achieved. The structural reform of the education model has been realized, and the traditional "teacher-centered" teaching structure has been transformed into a "leadership-combination of subject" teaching structure that can fully exert the teacher's leading role and highlight the student's dominant position. Overall improved the quality of education.

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