

Exploration of the Online and Offline Mixed Teaching Mode of 'Pathology'

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Abstract: Through online classrooms, traditional time and space limitations can be broken, allowing students to learn online at any time and place. Students can also choose appropriate teaching materials to complete autonomous learning based on their own learning situation, which can continuously stimulate their learning enthusiasm and initiative, cultivate their divergent thinking and innovation ability.

1. Introduction

Through effective integration of online and offline methods, knowledge can be learned during class and consolidated after class, allowing students to review old knowledge and discover new ones in a timely manner. Through effective and efficient communication with teachers, existing shortcomings in learning can be improved in a timely manner.

2. Overview of online and offline mixed teaching mode for pathology

2.1. Online teaching

Firstly, teachers should combine the characteristics of pathology teaching and based on the teaching syllabus, divide the relevant content of the course into three major modules, such as general introduction, pathophysiology, and individual theory. Secondly, it is necessary to organically integrate the teaching plan and existing knowledge content, grasp the close connection between the two, effectively integrate the knowledge points of each chapter in each section, and then use new media teaching methods such as PPT teaching, micro videos, etc. to timely control the key and difficult points in the teaching process.[1] Multiple types of teaching resources can also be uploaded to the school's learning platform, such as PPT, videos, etc animation, homework library, exercise library, and other expanded materials can increase students' learning depth and breadth, allowing them to further fully understand the knowledge points. At the same time, teachers can also incorporate corresponding case analysis and case analysis into the teaching content, in order to allow students to learn knowledge through mutual discussion and discussion, constantly stimulate students' learning enthusiasm and initiative, and create a good and harmonious interactive teaching classroom. In addition, teachers can also use online teaching platforms to supervise, review, and inspect students' online learning status and progress.[2]

2.2. Offline teaching

Offline teaching mainly refers to classroom teaching. In pathology teaching, corresponding knowledge points, problem points, key points, and difficulties can be fully explained and analyzed, and combined with online knowledge to build a complete and comprehensive knowledge system, thereby enabling students to form a complete knowledge structure. In addition, teachers can also comprehensively improve the effectiveness and quality of pathology teaching through vivid and rich teaching interactions. 1. Teachers can use internet platforms to carry out quiz activities, voting activities, and bullet screen interactive activities in the classroom, to stimulate students' learning enthusiasm and initiative, and allow them to fully participate in the teaching classroom. 2. In the process of explaining knowledge arguments, teachers can use PBL and CPC methods in a scientific and reasonable way, constantly throw out questions, and let students discuss and study, so as to fully understand the characteristics of various pathologies and the specific causes of lesions. 3. Teachers can also scientifically and reasonably apply scenario methods to set up practical scenarios related to life, allow students to participate in simulated scenarios to solve practical problems.[3] This not only increases the fun and liveliness of the classroom, but also cultivates students' ability to discover and solve problems. 4. Ideological and political elements should be added to pathology teaching, such as instilling health concepts into students during the process of explaining tumors.

2.3. Online and offline integration

After class, teachers can publish relevant pathology teaching content and materials on online teaching platforms, which can then pose developmental questions to students, allow them to conduct knowledge consolidation training, and also test their learning status and level, so that students have more time to digest the knowledge learned in the classroom. At the same time, students can also practice and learn repeatedly through project practice materials on online teaching platforms. In addition, teachers can also use online teaching platforms to interact with students online to timely understanding the problems that students have in the learning process. Specifically, students can complete autonomous learning through online teaching platforms and effectively solve problems in online learning in offline classrooms. They can communicate directly and effectively with teachers. Teachers can also use online learning platforms to timely check students' self-learning frequency, status, and project completion level. By strengthening supervision and management, a complete and comprehensive teaching loop can be formed to comprehensively improve the effectiveness and quality of pathology teaching.

3. Analysis of the importance of online and offline mixed teaching mode in pathology

3.1. Broadening the depth and breadth of students' learning, comprehensively improving their comprehensive and professional qualities

By integrating online and offline teaching modes into pathology teaching, the positive effects of online and classroom teaching can be maximized, breaking traditional time and space limitations to cultivate students' autonomous learning ability and continuously expand their learning breadth. At the same time, through the integration of online and offline teaching methods, more scientific and reasonable classroom teaching content can be designed to address the key and difficult issues of pathology teaching, optimize and improve the existing pathological knowledge structure to continuously broaden the depth of students' learning. In the process of designing teaching classroom content, teachers can effectively integrate the PBL method and CPC method through scientific and reasonable application. This can not only increase the fun and liveliness of classroom teaching, but

also stimulate students' learning enthusiasm and initiative, allowing them to fully participate in the pathology teaching process, and continuously cultivate students' comprehensive, professional, and innovative abilities.

3.2. Improving the teaching level of teachers

To effectively apply the online and offline integrated teaching mode in pathology teaching, it requires teachers to have high professional requirements. In order to ensure the orderly development of online and offline teaching, teachers should continuously optimize and improve the existing pathological knowledge structure, broaden their own learning depth and breadth, and actively introduce advanced teaching methods, so as to enrich teaching models, and combine students' actual learning conditions to carry out diversified and multi-level pathological teaching. At the same time, teachers should also keep up with the cutting-edge dynamic technological changes in pathology, integrate practical pathology teaching cases into the teaching classroom, and enrich classroom content through citing classics, in order to create a fun and vivid teaching environment, and cultivate students' professional and comprehensive literacy, so that they can have a correct learning attitude, scientific attitude, and medical attitude.

4. The specific implementation plan for the online and offline hybrid teaching mode of pathology

4.1. Enriching online classroom resources and building an online classroom sharing platform

Traditional offline classroom teaching is limited by time and space, and can only strictly follow the requirements of the teaching syllabus to develop teaching plans. The main focus is on teaching content and teaching explanations are conducted for the purpose of assessment. It cannot fully expand the classroom content, nor can it timely control students' actual learning situation, and cannot meet their learning needs. Through online classrooms, traditional time and space limitations can be broken, allowing students to learn online at any time and place. Students can also choose appropriate teaching materials based on their own learning situation to complete autonomous learning, which can continuously stimulate their learning enthusiasm and initiative, cultivate their divergent thinking and innovation ability.

Specifically, the content of online classroom textbooks should be divided into two levels: 1. Basic knowledge. This part of the course is mainly based on the teaching outline, recording the basic theoretical knowledge learned by students in the classroom, as well as the key and difficult points of the textbook into corresponding videos and micro lessons, and then uploading them to the online teaching platform, in order to allow students to learn anytime and anywhere, continuously consolidate their basic knowledge. 2. Ability improvement area. The content of this section should be based on expanding the depth and breadth of students' learning, and corresponding research modules and literature research progress modules should be set up. For the scientific research knowledge module, it can be based on the classroom theoretical knowledge explained by teachers, actively introduce advanced pathology frontline technology, and continuously expand students' learning knowledge; For the literature research progress module, literature related to pathology can be uploaded to the online teaching platform, allowing students to have more time and opportunities to learn about the latest expanded knowledge of pathology. By establishing an online and offline teaching mode, different types of teaching materials and resources can be uploaded to the teaching platform, which can meet the learning needs of students at different levels. While stimulating students' learning enthusiasm and initiative, it can also cultivate students' self-learning ability and innovation ability. In addition, teachers can also actively introduce excellent teaching resources from both

domestic and international sources, such as MOOC software, allowing students to continuously cultivate their concept of lifelong learning through self-directed learning. At the same time, online teaching platforms can also promote mutual communication between teachers and students. Teachers can set up message areas on the platform, allowing students to provide timely feedback on various problems encountered during the learning process. Teachers can provide targeted explanations to students in offline classroom teaching based on their feedback.

4.2. Introducing teaching cases to make the teaching classroom more lively

Only through pathology teaching can students see the essence of disease occurrence through clinical phenomena. Pathology is the most closely related discipline to clinical medicine. Only by continuously cultivating students' pathological thinking can students successfully complete medical course learning. Specifically, through scientific and reasonable application of case method in the process of pathology teaching, students' clinical thinking and pathological thinking can be comprehensively improved. In general, case teaching can be divided into two stages: 1. Referring to the PBL teaching model and problem oriented, corresponding pathological cases can be provided in the teaching classroom, allow students to learn with problems, and comprehensively improve the effectiveness and quality of teaching. 2. After the classroom content is completed, corresponding problem cases can be provided, allow students to analyze cases based on their learned knowledge, and enable them to effectively integrate theoretical knowledge with practice, so as to continuously cultivate students' comprehensive practical application abilities. Overall, through case based teaching, it can increase the fun and richness of classroom content, stimulate students' learning enthusiasm and initiative, and enable them to effectively integrate theoretical knowledge with practice to cultivate students' clinical thinking and pathological thinking. This can lay the foundation for improving the effectiveness and quality of pathological teaching.

4.3. Based on the integrated online and offline teaching mode, improve the assessment system of pathology teaching

Assessment is also the core content of the entire teaching process. Currently, most pathology exams are mainly based on offline exam oriented exams, and there is no strong promotion of online assessments. During this process, teachers can introduce online assessment methods to continuously enrich and improve the existing assessment forms and content. Firstly, teachers can establish an electronic examination question bank related to pathology. When completing this part of learning, students can timely detect problems in their learning process through online testing after class, in order to comprehensively improve teaching effectiveness and quality. In addition, in the process of setting up mid-term and final exam content, it is also possible to refer to electronic question banks to avoid subjective factors affecting the assessment content during the question setting process, which may not be scientific and reasonable. Secondly, teachers can also establish an electronic image library of diseases, allow students to observe electronic images of diseases anytime and anywhere, and also use electronic images or tissue slices to assess students' actual learning status. Once again, teachers can also use open-ended answers to encourage students to engage in group discussions, allowing them to continuously spread their thinking. As long as the answer to the question is reasonable, students can be graded.

Overall, through the online and offline assessment mode, students' learning status and attitudes can be comprehensively assessed and evaluated. Through the comprehensive assessment of students' learning process and achievements, various problems that teachers have in the teaching process can also be truly reflected, laying the foundation for the optimization and improvement of teaching methods and methods for later learning.

4.4. Sharing of gross specimens and pathological sections on online platforms

In the traditional mode of conducting pathology teaching, teachers need to prepare corresponding gross specimens and tissue slices in advance, so that they can explain the corresponding theoretical knowledge during the experimental teaching process and distribute tissue slices to students for independent observation. In the actual operation process, as students continue to learn and use, it can lead to damage to the gross specimens and tissue slices. Due to the fact that some diseases cannot truly reflect pathological changes in the teaching process due to clinical treatment intervention, some specimens and tissue slices are relatively rare. In order to maximize the positive effects of tissue sections and gross specimens, they can be made into flat or three-dimensional images, and the gross specimens and pathological sections can be digitally scanned to establish a complete and comprehensive tissue section library, which can be uploaded to online teaching platforms. This allows students to learn and understand the corresponding organizational structure after, during, and before class, and achieve integration and coherence.

5. Conclusion

Overall, compared to traditional teaching methods, integrated online and offline teaching can comprehensively improve the effectiveness and quality of pathology teaching, break traditional time and space limitations, provide students with more learning opportunities, and continuously broaden their learning depth and breadth. In the actual application process, it is necessary to organically integrate and connect online and offline classrooms. By establishing a complete, comprehensive, and standardized teaching system, the effectiveness of pathology teaching can be improved.

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