

Exploration of Blended Teaching Based on "Microteaching + Flipped Classroom"-Take Pathology as an Example

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Abstract: This thesis explores the blended teaching mode based on microteaching + flipped classroom, and evaluates the effect of its implementation. Pathology is an important course in the medical profession, and the traditional face-to-face teaching mode has time and space limitations. By making full use of the features of microteaching and flipped classroom, the learning effect and motivation of students can be improved. Microteaching, as a form of teaching carried by short videos, can be used for knowledge transfer and preview. Flipped classroom, on the other hand, emphasises the use of traditional classroom time for interactive learning activities to improve students' initiative and critical thinking skills. In the teaching of pathology, microteaching is used for preview and knowledge transfer, and teacher-student interaction and inquiry-based learning is achieved through the flipped classroom. Although this teaching mode has achieved certain results, it still faces problems such as teacher training and student adaptation. Therefore, further research and optimisation of this teaching mode is needed in the future to improve the effectiveness and quality of pathology teaching.

Keywords: Pathology; Blended teaching; Teaching mode; Micro-teaching; Flipped classroom

Fund Project:

Tibet University 2022 school-level teaching research and reform project (project number: XZDXJXYJ202210).

Introduction:

The deep integration of information technology and teaching has become a new trend in curriculum reform^[1]. Traditional offline teaching is limited by classroom hours, students' knowledge reserves, and learning abilities, and the teaching effect is often unsatisfactory^[2]. Therefore, the blended teaching model has emerged. Pathology is an important medical bridge course and also a morphological course, playing a crucial role in the process of medical learning^[3]. The blended teaching mode combining microteaching and flipped classroom is widely used in the teaching of pathology. Microteaching delivers knowledge through short and concise videos to help students understand quickly. Flipped classroom, on the other hand, puts the class time on practice and discussion to improve students' participation. This blended teaching mode can improve teaching effectiveness and students' learning interest, and cultivate students' active learning ability, cooperative spirit and innovative thinking. However, teachers and students need to work together to build a teaching environment that adapts to students' learning needs.

1. Teaching Mode Design

1.1 Micro-teaching Production

Teachers produce a series of short and concise microclass videos according to the course outline and learning objectives. The content includes the pathogenesis of the disease, pathological changes and clinicopathological links to explain three aspects. The length of the microclasses should be controlled at 10 minutes, which is convenient for students to fully digest and absorb.

1.2 Integration of learning resources and classroom preparation stage

Teachers integrate a variety of learning resources, such as textbooks, extracurricular reading materials, case studies, experimental

data, micro-practice exercises, and classic diagnosis and treatment cases from relevant departments in affiliated hospitals, to help students understand and learn the key points of knowledge while providing students with opportunities for in-depth study and knowledge expansion. These learning resources are provided on the online platform, and students watch the micro-videos to do pre-study before class, establish the knowledge framework, and record the problems they encountered so that they can discuss and answer them in the flipped classroom.

1.3 Flipped classroom stage and practical application stage

Teachers organise discussions for students to share the problems and doubts they encountered during the pre-study process. Teachers provide additional case studies in English to guide students to analyse the problems and work in small groups to solve the problems together. Teachers act as mentors and counsellors, and can provide targeted guidance and answer questions according to the students' learning situation and needs. In order to enhance students' understanding and self-thinking ability, a certain amount of time is set aside in the classroom for students to raise questions, exchange and discuss in groups, and continuously stimulate students' interest in learning. In addition, scientific research training can be carried out, including activities such as reporting English literature, data analysis, writing articles and guiding college students' innovation projects, so that students can exercise their problem-solving ability in practice and deepen their understanding and application of pathology knowledge.(As shown in Figure 1 is the the whole process of Microteaching + Flipped Classroom)

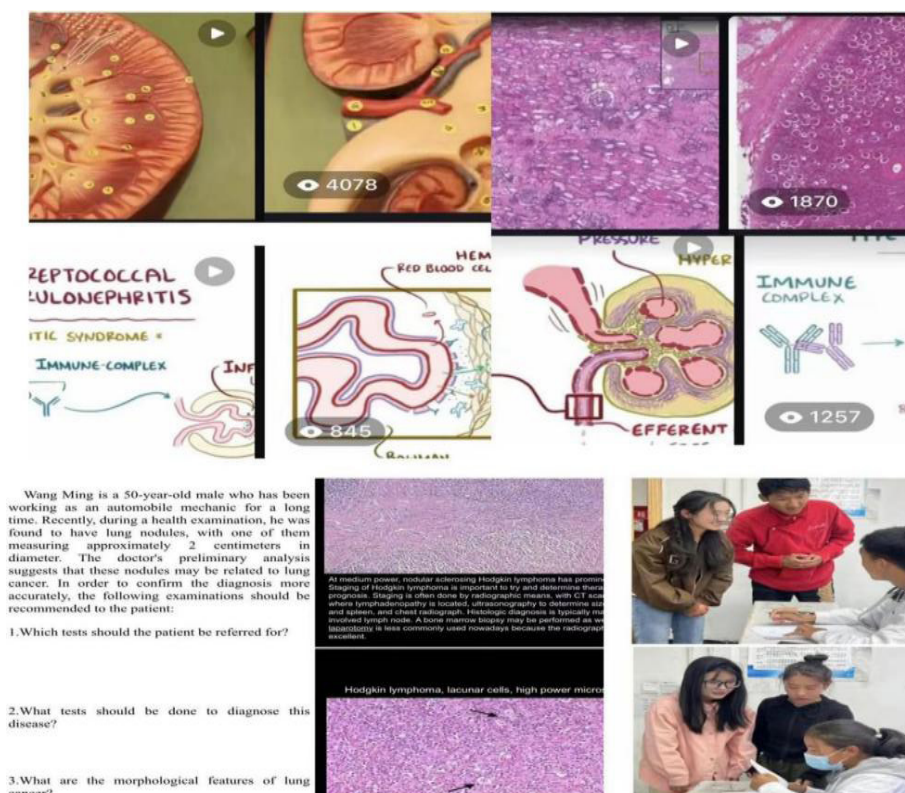


Figure1. The whole-process of Microteaching + Flipped Classroom

1.4 Create research cultivation groups and research interest groups online

Organise literature reports every Saturday, open discussion forums and online Q&A services to promote interaction and communication among students and cultivate problem-solving abilities. Students can express their opinions and ask questions online, and teachers can provide timely responses and answers.

1.5 Assessment of Learning Effect

The learning effect is assessed through online tests, homework, group reports, etc.,and the key content is reviewed by asking questions before class. According to the assessment results, the teacher adjusts the teaching strategy and guides the students to consolidate key knowledge and strengthen the learning of weak links.

2. Evaluation of implementation effect

Through the questionnaire survey of student satisfaction, teacher assessment and observation of the teaching process, from the data analysis and results of the above assessment indexes, the implementation of the blended teaching mode in the teaching of pathology

can achieve better results. Students' academic performance, homework completion, course discussion and other indicators have been improved under the blended teaching mode, and students' participation is higher and learning effect is better. The survey results show that most students are satisfied with the blended teaching mode and approve of the course content. Teachers also approve of the blended teaching mode, believing that it can reduce teaching costs and the burden on teachers. Observations show that the blended teaching mode can improve students' motivation, learning styles and learning effects, make students more active in live learning, and improve their learning efficiency by interacting with teachers through online learning. In conclusion, the implementation of blended teaching mode in teaching pathology is relatively effective and can improve students' learning effect and satisfaction. According to the evaluation results, the teaching mode can be adjusted and improved to further improve students' learning effect and satisfaction.

3. Discussion and conclusion

The study found that the blended teaching mode makes the learning process more flexible and students can learn at any time and any place. No longer restricted by time and place, students can organise their learning progress according to their own time and independently choose what and when to learn. Such a learning mode can adapt to students' individual differences and learning rhythm, and improve the autonomy and initiative of learning. At the same time, the online learning platform provides a wealth of learning resources, and students can acquire knowledge in a variety of forms. In addition to traditional teaching materials and textbooks, there are micro-classes, teaching videos, teaching materials and other materials that can help students better understand and absorb knowledge. The biggest advantage of the online-offline blended teaching mode is its openness and autonomy, which allows students to expand the depth and breadth of knowledge according to their own interests^[4-6].

According to the survey, the blended teaching mode promotes interaction and cooperation among students through the online platform. Students can discuss, ask each other questions and share their learning experiences on the online platform. Through interaction and cooperation, students can learn from and inspire each other, stimulating interest and motivation in learning. Meanwhile, teachers can also provide guidance and feedback on the online platform to strengthen communication and connection with students. In addition, the blended teaching mode takes advantage of both online and offline learning by consolidating knowledge through online pre-testing and review, and then conducting key knowledge lectures and hands-on practice in the offline instructional time. This way of learning allows students to participate in learning more actively and deepen their understanding and ability to apply knowledge. At the same time, students can also review the learning content at any time through the online platform to make up for the omission of learning and improve the learning effect.

The "micro-teaching + flipped classroom" blended teaching mode provides more choices and flexibility, and students can customise their learning according to their own learning habits and interests. No longer bound by traditional teaching, students can more independently choose the content and mode of learning, improve the initiative and enthusiasm for learning. At the same time, the online learning platform also provides learning feedback and personalised guidance, which makes students feel more care and support and improves their satisfaction with learning.

In summary, the exploration of microteaching + flipped classroom based blended teaching is an effective teaching mode. Through this teaching mode, learning has become more flexible and diversified, learning resources have become richer and more convenient, and learning effect and student satisfaction have been improved. However, it is also necessary to pay attention to the guidance and direction of teachers and the rational use of teaching resources to ensure the smooth implementation of the blended teaching mode and the effective use of its advantages.

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