The Flipped Classroom Based on Micro-course in Experimental Teaching of Oral Histopathology

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Abstract. Experimental teaching is one of the most important methods for oral histopathology teaching. The traditional experimental teaching mode is mostly the verification experiment teaching, the form is monotonous, which is not conducive to the students' understanding of various knowledge points and the integration of longitudinal and lateral knowledge. We try to change the traditional teaching mode of oral histopathology by using flipped classroom based on micro-course, aiming to improve the effect and quality of experimental teaching.

Introduction

Oral histopathology is a bridge between oral basic medicine and clinical medicine, and it is a key subject for clinical practice. In the process of teaching oral histopathology, we should guide students to integrate theory with practice, observe the essence through the phenomena, to improve the ability of learning knowledge in the future clinical work, to cultivate qualified oral medical scholars. Experimental teaching is an important part of oral histopathology. This paper mainly analyzes the effect of the teaching method of oral histopathology.

Oral histopathological experiment teaching.

Previous oral histopathology experiment by mere map, specimens and sliced, stationary state of specimens and slice the lack of movement, course boring, it is difficult to image reflect the dynamic process of disease occurrence, development. With the introduction of the multimedia technology into the teaching of pathology experiment, in the teaching of samples and sections, the physical projection and multimedia animation are combined, and the teaching materials of sound, color, animation and dynamic images are presented to the students to make the curriculum more flexible and vivid and sound. The introduction of multimedia means greatly enriched the content and information of teaching, deepened the students' understanding, mastery of knowledge, and improved the teaching quality.

Micro-course and flipped classroom.

Micro-course refers to the beforehand teaching video which is recorded for a period of no more than 10 minutes (the video is mainly explain the difficult content of a chapter), and will be released to the network platform to share with students. The micro-course which can be summarized in a very short period of time has the characteristics of "short and concise". There are many methods to record video, and its contents have many advantages of multiple elements and diversification.

In 2006, Salman Khan uploaded his own teaching video to the associated web site, which allowed more students to share the resources, and then the "flipped classroom" was born\textsuperscript{[1]}. It is proved that that effect of the teaching is superior to the traditional teaching model. Merenmies et al\textsuperscript{[2]} believe that the flipped classroom is composed of two parts. The first part is the students' self-study in the course of watching the micro-course after class, and the second part is the discussion of new knowledge in the classroom.
The flipped classroom teaching is a subversive of the traditional higher education mode. In the course of teaching with flipped classroom, some knowledge to students can be placed outside the classroom, which can mobilize students' enthusiasm and initiative them to learn relevant knowledge, so as to achieve satisfactory teaching results.

**The application of flipped classroom teaching method based on micro-course is carried out in oral histopathological experiment teaching.**

In order to observe the effect of using the flipped classroom teaching method based on micro-course, we selected students from class 1 and 2 of our school in 2014 as the experimental subjects. It was randomly divided into the test group (50 person) and the control group (50 person), then divide the two groups of medical students into 5 small groups (10 person each group) and select a team leader for each group.

In the control group, the students were taught the experimental lesson in the normal course, and then observe the relevant general specimens and the tissue slices, they should draw the micro image of the tissue section as the actual report. Flipped classroom method based on micro-course was used in the experimental group.

There are two steps: 1) Before the lecture, the teacher should make microlecture video according to the course requirements, combined with clinical data, gross specimen, maps, pictures and other material, and then release them to WeChat group or QQ group and other network platform, let the students discuss in small groups outside the classroom. Teachers who were at the other end of the network platform should monitor students' preview which was regarded as one of the standard assessment grades. 2) In the course of teaching, the leader of each group announced the result of the extracurricular discussion, and the teacher made the comments. They guided the students to read the relevant content in the textbook, explained the relevant course content in detail, and answered the questions which raised by the students. Finally, the teacher sent the relevant organizational slices to the group leader, and the team members observed and drew the micrograph, then completed the report.

Our results showed that 96.7% of the students in the experimental group spent more than two hours a week on average in learning oral histopathology. While in the control group, only 31.7% of students spent more than two hours every week in learning oral histopathology. In the theoretical examination, the average score of students in the experimental group was 78.6, and the average score of the control group was 69.2. The results of questionnaire survey of two groups of students showed that the satisfaction of the students in the experimental group was 96.7%, and the satisfaction of the students in the control group was 76.7%.

It can be seen that, compared with conventional oral histopathology, the Ideal teaching effect of oral histopathology can be achieved by using micro-course and flipped classroom teaching method.

**Discussion**

Education has been taken from the era of multimedia education into the micro class and flipped class education. The traditional way of oral medical students education is far from the requirement of the cultivation, [3]. Using micro-course combined with flipped classroom method to carry out oral histopathology teaching, the oral medical students can be liberated from the traditional teaching mode dominated by teachers, which greatly improves their learning efficiency. The teaching practice proved that the use of micro-course combined with flipped classroom method could significantly increase the interaction and communication between students and teachers, improve the teaching effect, and enhance students' sense of solidarity and cooperation.

The results of this study showed that using micro-course combined with flipped classroom method to carry out oral histopathology teaching could cultivate students' ability to think independently, analyze problems comprehensively and solve problems, and achieve better teaching results, which was worth popularizing and applying in teaching work.
Summary

The flipped classroom based on micro-course can improve teaching quality in experimental teaching of oral histopathology.

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References

