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Using a Variety of Modern Teaching Methods to Improve the Effect of Medical Microbiology Teaching

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Abstract

Traditional board writing and other teaching methods make it difficult to present the microscopic world of microorganisms to students. We used many modern teaching methods of multimedia teaching, QQ, and WeChat, and MOOCs in teaching medical microbiology to allow students to clearly recognize the microcosmic world and ensure the quality of teaching.

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Keywords: Modern information teaching methods; Medical microbiology teaching

1. Introduction

The teaching means is the medium for teachers and students to carry out teaching activities in order to realize the teaching purpose. It has the characteristics of information, morphology and function. The teaching means can usually be divided into traditional teaching methods and modern information teaching methods. Medical

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microbiology is the study of microscopic worlds of various microscopic organisms at the molecular, cell or group level. Traditional board writing and other teaching methods make it difficult to present the microscopic world of microorganisms to students. Students feel that the microbiology is too abstract and boring to learning. In addition, how to improve the teaching quality is a new challenge to the teaching of medical microbiology.

With the popularization of network technology and various mobile devices in the information era, it has provided rich resources and a variety of modern information teaching methods for microbiology teaching [1]. We can use many modern teaching methods of multimedia teaching, QQ, and WeChat, and MOOCs in teaching medical microbiology to allow students to clearly recognize the microcosmic world and ensure the quality of teaching.

2. Multimedia Teaching

Multimedia teaching can combine pictures, sounds, and videos organically to dynamically present the important knowledge points in the book and help students acquire and understand the lesson content through listening and visual sense. In the teaching of medical microbiology, we used multimedia teaching and achieved better teaching effect.

2.1 *Multimedia teaching are vivid, intuitive, interesting in learning*

The mechanism of bacterial genetic variation is abstract and difficult to understand. Teachers use traditional verbal expressions and blackboard illustrations to teach students to feel that abstraction is difficult to understand. For example, through the communication of sexual pili, the genetic material can be transferred from one bacterium to another, and the student can't imagine this process. For this reason, we use multimedia teaching to show the students to this teaching content from multiple levels and from multiple angles by modern computer such as animation, audio, and video display, which can stimulate students' senses in all directions and making classroom teaching more vivid and can stimulating students' interest and enthusiasm for learning. At the same time, vivid animation can greatly enhance students' ability of understanding and memory.

In addition, bacteria are invisible to the naked eye and difficult to motivate students to learn. Because pilus is finer than the flagella, and the decudua around the bacterial cells are generally not easy to be colored, the traditional teaching methods can only be explained by the students on the wall map or the board. The students do not see the actual form and structure, and the teaching effect is monotonous and boring. If we teach microscopic specimens stained with pilus and decudua through the multimedia course, we can enhance students' perceptual understanding of pilus and flagella. The monotonous abstraction of the original teaching was no longer tedious and realized the intuitiveness of teaching. For improve teaching results, we should use multimedia teaching in medical microbiologic class to improve teaching effect.

2.2 *Multimedia teaching save teaching time and improve teaching efficiency*

There are many kinds of microorganisms with complex, but there are few classes. In particular. It takes a lot of time to teach the content when we use methods of writing on the blackboard and erasing the blackboard and affect students' comprehension abilities and learning abilities. As a result, teaching time is reduced. Therefore, a thorny issue faced by teachers is how to impart knowledge to students in a limited time. In order to solve this problem, we should use multimedia courseware in class, and the courseware can display a lot of teaching content to explain the clear knowledge, vividly displayed through short video, so as to save teaching time and improve teaching efficiency. It can also ease the contradiction between more teaching content and fewer hours. In addition, on the premise of not affecting the teaching progress, the instructors introduce students to some frontier knowledge in medical microbiology or hot issues in the application field, increase the amount of information for students, enable students to understand the new progress of the discipline, and increase students' interest in learning.

3. Making full use of Internet Resources

With the advent of the Internet age, people's lifestyles have changed. The popularization of mobile phones, Internet tools, and the development of network platforms have made people's access to knowledge diverse. Currently there are many kinds of internet platforms applied to higher education teaching [2].

3.1 Access to teaching materials by using public the Internet platforms

Microbiology is a morphology. As mentioned before, micro-organisms are too small to be visible to the naked eye. When we prepare lessons, we search the site for some clear microbiological images for use in teaching. These can help students to intuitively and visually understand the knowledge of the microorganisms which they have learned. When we teach the diseases caused by microorganisms, it is very important to collect rich pictures of the patient's pathological changes and clinical manifestations on the Internet. Students can deepen their understanding of what they have learned.

Some of the contents of microbiology are obscure and difficult to understand using language and pictures. We also make use of the videos provided by many websites for use in microbiology teaching and provide convenience for teaching. There is also many multimedia courseware for teachers to share on the Internet, especially some fine-quality lesson websites, including exquisite courseware for national, provincial and university-level exquisite courses, courseware, and other animations for teachers. After download we add them to our microbiology courseware, we not only save time and energy, but also greatly improves classroom teaching.

With the rapid development of science and the emergence of new pathogens have also been continuously discovered., new pathogenic mechanisms and new detection techniques in the microbiology discipline, we use the Internet knowledge in teaching to update traits quickly and with large amounts of information. The new theory and technology of microbiology update the content of the lectures in a timely manner to enable students to understand the latest frontiers of microbiology and broaden their horizons [3].

3.2 Using the Network Resources of the School Curriculum Center

My school curriculum centre has two the Internet courses on microbiology and pathogenic biology, including introduction of microbiology courses, teaching syllabus, teaching courseware, key summary of each chapter and examination questions. After class, students can log on to the course centre website at any time to download courseware or e-learning, which is complementary to classroom learning and can cultivate students' interest and ability to study independently.

4. Using QQ and Wechat to Assist in Teaching

QQ and WeChat are important software for computer and mobile phones to communicate and chat. They can send videos, pictures, and texts. They can be used as supplementary teaching for students learning medical microbiology after class.

4.1 Using QQ and WeChat to communicate with students Uploading learning resources

Currently, teachers and students are inseparable from computers and mobile phones. There are fewer opportunities for teachers and students to communicate after class in the university, and there are limited hours of microbiology, more knowledge, and sometimes a lesson. Learning several kinds of bacteria or several viruses, students are difficult to digest, so you can put the teacher's PPT courseware in QQ or WeChat group, easy for students to learn after school; In addition, you can also discuss cases in the QQ group and WeChat group, Some students are ashamed to ask questions in the classroom, but they can use QQ and WeChat chat to ask questions to teachers. Teachers point to point for student guidance and can also use QQ and WeChat to implement syllabus, teaching resources, and latest information. Research progress and the transfer of pictures [4], students can download QQ space and WeChat friends circle information, learning. This will not only enhance the teacher-student

relationship, but also enable teachers to identify problems in teaching in a timely manner, understand student learning requirements, and also help students to use scattered, fragmented time, and use their mobile phones to learn at their own convenience and flexibility, thus consolidating content which they study.

4.2 Focus on the WeChat public number access to learning resources

According to survey results, 100% of students use the habit of using WeChat to check their messages every day and 86% of the students often pay attention to WeChat public number [5]. The timely updating of the content of the WeChat account is a very good platform for the study of the curriculum. Therefore, we can recommend some WeChat public numbers to students, such as "Jiyukang", "Microbial House", "Clinical Microbiology", "Microbiology Ecology", "Pathogenic Biology STU", "Inspection Medicine Network", etc. Some classmates who were "not enough to eat" or "not digested" in class were selected according to their own needs to continue to study the contents of the public number, improved their self-learning ability, grasped the frontiers of medical microbiology, and broadened their knowledge.

5. Using MOOC to Assist Teaching

MOOC is a massive open online course. The course of MOOC can be produced by excellent teachers from all over the country and the whole world. The content of the lectures and the progress of the lectures are carefully planned, arranged and produced with quality assurance. Not only the basic knowledge is profound, but also the frontiers of the subjects are sharply grasped. The choice of freedom is high, the learning style is flexible, you can learn online, download and download offline, and learn content according to your interests, customize the pace of learning, pay attention to the "interactivity" of the teaching process and the students' "participation". Students need to actively participate in teacher-student dialogue, class discussion, quizzes, etc. Student participation in teaching activities will be one of the indicators of course evaluation [1].

We can recommend MOOCs to students, they can find a certain content or a topic that they need after class, and further understand that they have not understood or further studied. For example, Wuhan University has a special topic "AIDS and Me", which is the doctor's lecture of the hospital. Through this part of the content of the class, the understanding of the clinical characteristics of AIDS will be more thorough.

6. Simulation Platform

Virtual simulation experiment refers to the use of computer software, based on computer software and hardware, using a variety of virtual simulation techniques to simulate the real experimental environment, allowing operators to complete the booking in a virtual environment with a near real feeling. The experimental project is an important carrier for the application of virtual reality technology to experimental research.

Medical microbiology experiment is a medical teaching link combining basic theory and operational skills. It aims to cultivate students' comprehensive experimental skills, scientific research thinking and innovative ability. The traditional experimental operation process cultivates students' hands-on operation ability, but it is limited by many factors, such as experimental site, teaching cost, experimental animal ethical restrictions and students' lack of experimental operation ability, which leads to the experimental training of students in the real learning process and the effect is not ideal. Using the virtual simulation experiment platform to carry out simulation experiments, students can practice repeatedly in the virtual environment, skilled operation, and finally combine the actual operation, the experimental teaching content will be integrated. The large-scale comprehensive experiment of the exhibition can use the mode of virtual experiment to let the students design and operate by themselves, analyze the experimental results and draw conclusions; expand the learning content and expand the professional vision of the students. In order to achieve this goal, the school is also actively trying to understand the simulation. Platform [6].

7. Conclusions

Don't rely too much on modern information teaching methods. Although multimedia provides new possibilities for teaching methods, it is not the more applied. The excessive use will reduce the communication between teachers and students, which is not conducive to the classroom. overall effect. In the use of modern teaching information teaching methods, we must also pay full attention to the role of teachers' language, form, blackboard and teaching aids in the classroom. In this way, the students can be improved together, and the medical microbiology syllabus can be completed with high quality to improve the teaching effect.

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