Integration of Plant Biology Classroom Teaching and Network Resources

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Abstract: In order to do a good job of plant biology classroom teaching, this paper will carry out research. The research focuses on the teaching status quo, analyzes the existing problems, and puts forward improvement strategies combined with online teaching, and puts forward the requirements of network resource integration, and finally puts forward the suggestions of resource integration. Combined with online teaching strategies, the quality of plant biology classroom teaching will be guaranteed, and the integration of network resources can give full play to the role of online teaching and provide sufficient support for teaching work.

1. Introduction

Although modern plant biology classroom teaching has made great progress, it is still not perfect. There are some common problems in teaching, which affect the quality and efficiency of teaching. Therefore, how to further improve the classroom teaching of plant biology is a problem worth thinking about. Look at this problem, the network information technology can play the role of problem solving, namely technology can realize on-line teaching on the one hand, break through the real physical time and space limit, on the other hand can provide a rich network resources, integration can make the teaching get twice the result with half the effort, after therefore justifies an related research, aims to give full play to the role of network technology, to do a good job of network resource integration, Promote the development of plant biology classroom teaching.

2. Current Situation and Problems of Plant Biology Classroom Teaching

2.1 Overview of the Current Situation

The present situation of plant biology classroom teaching is introduced mainly from three aspects: teaching mode and method, teaching working environment and teaching content and resources. The details are as follows.

(1) Teaching mode and method

At present, most teachers adopt traditional teaching modes and methods in plant biology classroom teaching, that is, the mode is teacher-led and students are in a passive position. Therefore, in terms of teaching methods, teachers are mainly responsible for explaining content, and students can listen to the teacher and follow the teacher's arrangement. This teaching model and method have

been applied in the field of education in China for a long time, so it has been developed into a traditional model and method up to now [1].

(2) Teaching working environment

Because of the promotion of modern economy, so the plant biology classroom teaching environment is good, all kinds of teaching facilities from soup to nuts, but teaching still depend on the real physical time and space, the teachers and students must be met within a specified time to the designated place, teachers can perform daily teaching work, if both parties any one party cannot meet the demand of the time or place, so it's difficult to effective implementation work[2].

(3) Teaching content resources

Most of the content and resources of plant biology classroom teaching come from textbooks and school libraries, which are relatively large in reserves and diversified in types, and basically meet the teaching needs. However, these resources are hard-won and accumulated by colleges and universities over the years. As a result, the growth and renewal of resources are slow, resulting in insufficient performance of resources after a long period of application. Therefore, the teaching content of modern plant biology classroom is insufficient[3].

2.2 Current Problems

Based on the status quo of plant biology classroom teaching, it can be seen that there are many problems in the current teaching. The main problems will be discussed in the following paragraphs.

(1) Students have poor initiative and initiative

Modern teaching theory believes that students should have good initiative in learning, which is conducive to the divergence of students' thinking, so that students can think positively, explore the nature of knowledge, have a deeper understanding of knowledge, and knowledge can leave a deep impact on students. But the current plant biology classroom teaching mode and method does not meet the requirements of the theory, the model for middle school students passively, so the students lack initiative space, divergent thinking must follow teachers, and teachers on the teaching methods are too pay attention to knowledge, does not stimulate students initiative, so students active initiative is poor, is not conducive to teaching quality and talent cultivation[4].

(2) Environmental limitation

Too much reliance on real physical time and space will make the classroom teaching of plant biology subject to environmental restriction, which will be detrimental to the quality of teaching. The influence is mainly reflected in two aspects: first, teaching can only be carried out in the designated time, and it is difficult for teachers and students to meet in other time periods, so teaching can not be carried out, and relying solely on students' self-study can not guarantee the learning effect, and at the same time, it is not conducive for teachers to understand the learning situation of students, and it is difficult for teachers to give targeted guidance; Secondly, due to the heavy teaching task in class, teachers have to spend a lot of time giving lectures instead of conducting targeted communication, which also leads to a dull teaching atmosphere, which is not conducive to students' good learning state.[5-6]

(3) Teaching content resources do not meet the actual needs

Both classroom teaching and students' self-study need to be supported by abundant resources, but plant biology classroom teaching resources are not abundant, so it cannot meet the actual needs. By resource limitations in this case, the teacher can't good knowledge in student life, in most cases can only according to the textbooks teaching materials for teaching, textbooks and teaching material content is generally tend to theory, which causes the teaching theoretical, can make students knowledge application ability is insufficient, it is a typical problem of teaching quality, should pay attention to[7].

3. Suggestions on Teaching Improvement Strategies and Network Resource Integration

3.1 Improvement Strategy

In view of the three major problems in the current classroom teaching of plant biology, schools should start to improve. The improvement strategy can be divided into three steps, as follows.

(1) Build an online platform and do a good job of connecting up and down lines

The purpose of constructing online platform is to get rid of the limitations of physical time and space in reality, give priority to solving the problems affected by environmental restrictions, and provide a good foundation for the integration and enrichment of teaching content and resources. Therefore, teachers should pay attention to it. The construction method of online platform is relatively simple, for example, schools can use the new media platform to build, but after the completion of the platform construction, functions should be designed according to the actual needs. The basic functions are shown in Table 1[8]. In addition, the online platform construction has been completed, the school will together online and offline teaching cohesion, cohesion offline teaching is still dominant in the relationship, to be responsible for the expansion theory education, it is used to make up for the offline and online teaching teaching is insufficient, such as teachers in the online environment to communicate with students, understand students' learning, facilitate teachers with specific guidance. On this basis, the limitations of physical time and space on offline classroom teaching will be made up by online platforms. For example, in offline teaching, teachers can't communicate closely with students, but they can communicate with students online in a small amount of time. Therefore, online platforms solve the problem of environmental limitations.

Tab.1 Basic function design requirements of online platform

Name	Effect
Resource storage function	Support teachers to upload resources and students to download resources
Multimedia function	Compatible with a variety of media format resources, easy for teachers and students to access
Operation layout function	It is used for teachers to arrange online homework according to students' learning situation and teaching needs

(2) Rectify the teaching mode and improve students' initiative

After the construction of online platform, teachers should start to change the teaching mode and method. It is suggested to adopt the guiding teaching mode and method for online or offline teaching. Guide teaching mode is a kind of dominated by students, teachers as the guide, therefore in the role of the model for middle school students have enough space, to be able to spread their own thinking, and the teacher as a guide, on the teaching method can be instructive questions to stimulate students' initiative, make students active thinking, and form a good habit, so the students active initiative to improve, good for the quality of teaching. For example, a teacher often asks students questions in online or offline teaching, such as "What are the biological characteristics of plants? Please give examples". These questions can lead students to think, and such a cycle can make students form habits. Figure 1 shows the basic flow of the guided teaching method for reference only.
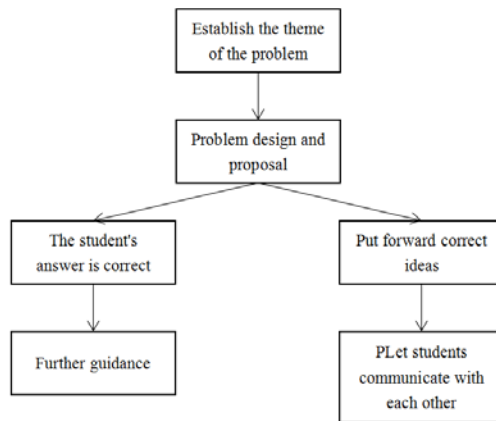
Fig.1 The Basic Process of Guiding the Teaching Method

(3) Collect network resources for in-line/off-line teaching

Teachers should collect rich resources on the Internet, then upload the resources to the network platform, and then take advantage of the characteristics of the network to conduct in-line/off-line teaching. On/offline teaching, the teacher can through the way of live in online teaching, discusses some network resources in the process, or to interact with students, and in the offline teaching teachers will shoot video, let the students to learn through video, and the use of multimedia function to let the students can make full use of fragments of time self-study, if encounter problems can leave a message to the teacher in the learning, The teacher can reply after seeing it, or give guidance in the next lesson. In addition, there is a complementary relationship between online teaching and offline teaching, so the two should be used together. Therefore, the concept of online/offline teaching is generated. Figure 2 shows the complementary relationship between the advantages and disadvantages of the two.
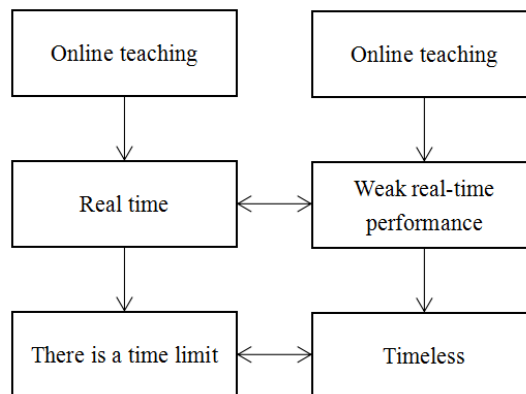
Fig.2 The Complementary Relationship between Online Teaching and Offline Teaching

3.2 Suggestions on Network Resource Integration

In the improvement strategy, teachers have collected a large number of network resources, which, if not integrated, will lead to the disconnection between resources and teaching content, and disorderly storage of resources, which is not conducive to the use of teaching. Therefore, teachers must integrate resources after collecting network resources. Network resources integration is a complex work, the work need to find the resources and the relationship between the teaching

content, to extract the characteristics of information resources to classify, and huge data information and type makes the work is very complex, artificial basic can't finish the work, therefore, suggest that teachers in the school with the help of using big data, intelligent technology to integrate, The specific method is divided into two steps, as follows.

(1) Construction of resource big data

Big data itself is the integration of huge data, so it needs to collect a lot of resources to build big data. However, the working efficiency of human is slow, and teachers have to take into account other work as human, so they do not have much time to collect network resources related to plant biology, so it is difficult to directly build resource big data. In this case, it is suggested that teachers use network tools to collect relevant resources, such as the network worm tool, which can automatically collect resources in the network only by the teacher's input of keywords. After a period of time, tens of thousands or even more resources will be collected, which is far more efficient than manual work. For example, teachers can input "plant", "biology", "plant biological characteristics" and other subject keywords into the tool, wait for a period of time, and store the collected resources in the database after completion, which constitutes the resource big data. In addition, considering the storage requirements of big data, teachers are advised to use cloud database for storage. The capacity of this database is theoretically unlimited, so it can meet the huge data storage requirements.

(2) Resource integration

Teachers can make use of the intelligent technology for large data resources integration, principle is: the first design of the intelligent technology resources integration logic, logic can be divided into keyword matching feature matching degree of integration, information integration, according to the two logical, intelligent technology for large data preprocessing, namely to extract the keywords or extract information characteristics. Secondly under different logic, the integration of smart technology will make different behavior, keyword matching integration, for example, the intelligent technology will be based on the teaching material content, analysis of the teaching material content keywords, then all the network resources for the teaching material content keywords list, so teachers will know which network resources related to the teaching material content, direct access to complete integration.

4. Conclusion

To sum up, there are many problems in the current plant biology classroom teaching, so it needs to be improved. Therefore, the school should focus on the causes of the problems, use network information technology to improve, and optimize the teaching mode and method simultaneously, so as to improve the teaching quality. At the same time, school teachers should also pay attention to the requirements of network resource integration, which should use big data and intelligent technology to integrate. After integration, the use of resources is more convenient and the quality of teaching can be maintained.

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