

Strategies to Improve the Classroom Teaching Efficiency of College Students under the Network Environment

—For Chinese University Education

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Abstract—The goal of this paper is to propose strategies to improve the classroom teaching efficiency of college students based on the current advantages of the Internet. The reform of teaching mode is the key to promote the classroom teaching efficient of college students in China. The practice and exploration of teaching mode reform is an important path to realize the maximization of teaching efficiency. The traditional teacher-centered teaching model inhibits students' initiative in learning, which is not conducive to the cultivation of students' exploration spirit and innovative practical ability. In this paper, we introduce several student-centered teaching models, including inquiring teaching, discussion teaching, hybrid teaching and put forward how to implement these teaching models in the internet environment. Since the traditional lecturing teaching mode is widely implemented in China, there are many difficulties in promoting the student-centered teaching mode. In this paper, we also put forward some problems that needed to be solved to carry on these student-centered teaching modes. Finally, we give some suggestions to strengthen the interaction between teachers and students in the internet environment. This paper has a positive guiding significance for improving traditional teaching methods, mobilizing students' learning enthusiasm and initiative, cultivating students' innovative practice ability and improving classroom teaching efficiency with the help of the advantages of the Internet.

Keywords—strategy; classroom teaching; efficiency; college students; network environment

I. INTRODUCTION

Human learning is undergoing a profound transformation based on knowledge innovation and education innovation.^[1] With the development of the Internet, people can acquire a large amount of knowledge by using the Internet. As a modern college student, he/she bears the mission of creating the future. The main goal of education is to cultivate the self-learning ability and innovation ability of college students. Under the network environment, various network courses keep emerging, which have a certain impact on traditional classroom teaching. How to effectively use network resources to improve classroom teaching efficiency is very important. College

students are already very skilled in mastering the Internet. Colleges and universities have a wide range of online resources, such as various databases, which are convenient for college students to access data and help them develop self-learning ability. Current situation is not optimistic, mobile phones have become indispensable internet tools, so that the phenomenon of the individual students to play mobile phone are common, which takes them a lot of time in class. It is a problem of classroom teaching to put them "free" from the mobile phones. In the following, we will propose methods to improve the efficiency of college students' classroom learning, which mainly include the reform of classroom teaching mode and the communication and interaction between teachers and students with the help of the Internet.

II. THE REFORM OF CLASSROOM TEACHING MODE

The traditional teaching method is the lecture method; students achieve their goal of mastering knowledge points by carefully listening to lectures. During the teaching process, the teacher is the only expert and the students are mainly passive recipients. However, teachers should mainly play the role of guidance and students are the subjects of learning in the teaching process. Only by giving full play to students' subjective initiative can students achieve twice the result with half the effort. Students' attention in a lecture appears to fall off fairly steadily after an initial rise, until the last five minutes when it briefly rises again which means that the middle of a talk is less well remembered than the beginning and end^[2]. At present, due to the multiple functions of mobile phones, especially its network functions, many students are addicted to mobile phones and have no time to attend lectures. How to improve students' interest in the classroom and change the traditional teaching mode is particularly important. In the following, we will explore several teaching models that can effectively use network resources to improve traditional teaching methods.

A. Inquiry teaching[3]

Inquiring teaching refers to the independent learning, in-depth exploration and group cooperation of the main

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knowledge points in the current teaching content through the learning mode characterized by “independence, inquiry and cooperation”. Therefore, it is better to achieve a teaching model of cognitive goals and emotional goals in the curriculum standards. Among them, cognitive goals involve the mastery of knowledge, concepts, principles and abilities related to disciplines; emotional goals involve the cultivation of thoughts, feelings and moral qualities.

Teachers can ask questions that are relevant to this knowledge point and that can inspire students to think deeply before the class and provide them to the students. The students can conduct self-exploration on the questions raised by the teachers through searching materials on the Internet.

Before the class, the teacher can group the students in advance, and each group of students will consult relevant literature and materials and conduct cooperative learning activities for the key questions raised by the teachers before class. This is a key part of the inquiry teaching model, which requires students to be fully prepared before class.

In the classroom, teachers organize students to conduct high-quality collaborative communication. Through exploratory learning, each group will communicate and speak on the questions raised by the teacher. Each group exchanges and speaks on the questions raised by the teachers through inquiry-based learning. In the process, the teacher should provide the communication ideas, viewpoint collisions and results sharing to organize, coordinate and guide the students in the collaborative communication. Finally, the teacher answers and summarizes the different viewpoints that appear in the process of communication, analyzes and summarizes the learning results, and deepens, migrates and improves the current knowledge points.

The inquiry teaching mode fully mobilizes the initiative of students' learning, so that the students can go deep into the communication process of the classroom, and the teacher plays a guiding role. This shows that the main body of learning is the role of students and teachers as guiders.

The advantages of inquiry-based teaching mode: it enables students to deeply understand and master knowledge and skills, which is conducive to cultivating students' innovative thinking and innovative ability. The key of inquiry-based teaching mode is that students should make full preparations before class, and teachers should guide, help and support effectively in class. The inquiry teaching mode fully embodies the student's dominant position and the leading role of the teacher in the learning process.

Today, with the popularity of information technology, the network provides a powerful guarantee for the inquiry teaching mode.

B. Discussion teaching^[4]

Discussion teaching method requires teachers to design relevant discussion problems according to the teaching content. Students are required to prepare materials for specific problems through the Internet and other means before the class, and to express their opinions and to discuss related issues in the

classroom. At last, teachers summarize the teaching content according to the students' discussion.

The advantages of the discussion-based approach are the following.

1) It can fully mobilize the initiative and enthusiasm of students' learning. The discussion-based approach requires students to be fully prepared for the questions raised by the teachers before class. In the classroom, students are no longer passive recipients of knowledge, but the sender of knowledge information. Their thinking can be free from the limitations of teachers. In order to actively participate in the discussion in the classroom, students need to be fully prepared before class, which can stimulate students' enthusiasm for learning.

2) It can enhance students' ability to access materials, read, and think independently. Students need to analyze, process, reason, and demonstrate knowledge on the basis of repeated reading of textbooks before class. Students will encounter unexpected problems in discussion and debate. Students need quickly think in a short period of time, so as to grasp the essence of the problem, then analyze, reason, and demonstrate the problem, and finally draw conclusions. This kind of discussion-based teaching method can effectively cultivate and improve the agility, flexibility and independence of students' thinking.

3) It can cultivate and improve students' ability to think independently, analyze problems and solve problems. Discussion questions generally require students to combine book knowledge with practical problems. In the process of preparing for discussion, students' ability to use knowledge to analyze problems and solve problems has been cultivated and improved.

4) It can develop and improve students' ability to speak in spoken language. In the process of discussion, students need to organize the language to accurately and comprehensively express the problem. In the process of demonstrating their own views, the students' language expression ability has been cultivated and improved.

5) In the process of discussion, teachers can fully understand and master the students' knowledge and mastery of knowledge points, facilitate the adjustment of teaching progress, and enhance the pertinence and effectiveness of teaching. Discussion-based teaching method is conducive to improving the efficiency of classroom teaching and student classroom learning.

C. Hybrid teaching^[5]

Hybrid teaching is a teaching model that combines online teaching with offline teaching. Due to the rapid development of "Internet +" recently, many online courses have been presented. Hybrid teaching requires students to self-learn through the online courses. In the classroom, teachers can solve the difficulties in the students' learning process by understanding the students' learning situation, and summarize the learning content so that students can be better understanding and mastering what they are learning. Through the organic combination of online self-study and offline teacher's summary

guidance, students' learning can be guided from shallow to deep.

To realize the mixed teaching effectively, it needs to be done from the following three aspects.

1) There are available resources on the line, and the construction specifications of the resources should be able to explain the knowledge. Online resources are the premise for mixed teaching, because the hybrid teaching we advocate is to let the traditional classroom teaching move forward through the form of micro-video online, giving students full study time, as far as possible let each student with a good base for knowledge into the classroom, so as to fully guarantee the quality of classroom teaching. In the classroom, our teaching section is only for key points, difficulties, or common problems that students have feedback during the online learning process.

2) Offline activities should be able to test, consolidate and transform online knowledge learning.

As mentioned above, students can basically master the basic knowledge points through online learning. Offline, after teachers' examination, omissions, and key breakthroughs, what remains is to organize students to consolidate and flexibly apply the basic knowledge they have learned online through well-designed classroom teaching activities. Let the communication between teachers and students be used to achieve higher teaching objectives, so that students have more opportunities to participate in cognitive learning, rather than paying special attention to whether students are sitting in the classroom as usual.

3) Processes are evaluated, online and offline, processes and results need to be evaluated. No matter online or offline, students need to be given timely learning feedback. Carrying out some online tests based on online teaching platform or other small programs is an important means to feedback students' learning effect. Through these feedbacks, the teaching activities are more targeted which not only enables students to learn clearly, but also enables teachers to teach clearly. Of course, if we use the results of these small tests as an important basis for process evaluation, these test activities will also have the function of learning motivation. In fact, to learn this matter, we must pay attention to the process as well as the results. Even we should pay more attention to the process. After all, the solid process is the most reliable basis for evaluation.

Hybrid teaching should have the following characteristics.

1) This kind of teaching adopts "online" and "offline" approaches to carry out teaching from the external expression form;

2) "Online" teaching is not an auxiliary or icing on the whole teaching activity, but an essential activity of teaching;

3) "Offline" teaching is not a copy of traditional classroom teaching activities, but a more in-depth teaching activity based on "online" early learning results;

4) This kind of "mixing" refers to the narrow sense of mixing, especially "online" + "offline". It does not involve teaching theories, teaching strategies, teaching methods, teaching organization forms and other contents.

5) There is no unified model for mixed teaching, but there is a unified pursuit, that is, to give full play to the advantages of both "online" and "offline" teaching to transform our traditional teaching and change our excessive use of teaching in the classroom teaching process. Hybrid teaching can change the phenomenon that students' learning motivation is not high, cognitive participation is insufficient, and the learning outcomes of different students are too different.

6) The hybrid teaching reform will certainly reconstruct the traditional classroom teaching, because this teaching expands the time and space of traditional teaching. "Teaching" and "learning" do not necessarily have to occur at the same place at the same time. The core value of the online teaching platform is to expand the time and space of teaching and learning.

In recent years, many MOOC courses were built, there are many MOOC courses online. Teachers can use the MOOC resources to carry out the hybrid teaching practice in the school. To flip the classroom is to create a video for the teacher, the teacher to explain the teacher in the video outside the classroom, and return to the classroom to communicate face-to-face and complete the homework. Its essence is to create a self-learning environment for students. All students participate in the study, which increases the interaction and communication between students and teachers.

Teachers can choose the teaching mode that suits them according to the nature and characteristics of the courses they teach, maximize the enthusiasm and initiative of college students, cultivate the interest of college students, and make full use of classroom time to improve the efficiency of college students' classroom learning.

III. PROBLEMS NEED TO BE SOLVED IN CARRYING OUT CLASSROOM TEACHING REFORM

In recent years, the reform of the classroom teaching is to cultivate the students' independent thinking ability and creative thinking ability. Classroom teaching should focus on innovative teaching methods, strengthens communication and interaction between teachers and students, students and students, and enhances students' initiative learning.^[5] Generate thinking collisions and gain wisdom sharing, innovative thinking is developed, and teaching effects are significantly improved. There are also some problems and deficiencies:

A. How to choose the class size suitable for the new teaching modes?

The above teaching modes are more suitable for small classes teaching. In view of the common phenomenon of large classes teaching in Chinese universities, we can adopt the mode of combining large classes lecture with small classes discussion, which can mobilize students' learning enthusiasm and autonomy as far as possible.

B. How to make teachers willing to adopt the new teaching modes?

The new teaching modes put forward higher requirements for teachers' teaching. Most teachers are more inclined to the traditional lecturing teaching mode, and the recognition of the

new teaching mode is not enough. They do not really realize the impact of the new modes on the classroom teaching efficiency. Therefore, the teacher's updated teaching philosophy is the basic premise to promote classroom teaching reform. Practically, there are few teachers would like to adopt the new teaching modes to narrow the gap between teachers and students in teaching. Thus, there is still a gap between the school's teaching goals compared with world-class university.

C. How to balance the systematic course knowledge and the practical innovation ability?

The traditional teaching mode emphasizes the centrality of teachers but ignores that students are the subject of learning. In traditional teaching, students just listen to what the teacher says, accept it, and remember it. In the learning process, students are completely passive in receiving knowledge, and their learning initiative is not stimulated. However, cultivating students' practical innovation ability is the most important goal of the process of teaching students. Compared with other teaching modes, traditional teaching is more systematic in the knowledge acquired by students. If we abandon the systematization of theoretical knowledge and one-sidedly pursue students' participation in class, it will inevitably result in students' scattered knowledge and incomplete understanding of knowledge. Therefore, how to balance the systematic grasp of knowledge with the cultivation of innovative practical ability is a problem that needs to be solved, which requires teachers to constantly explore in teaching practice.

D. How to improve students' learning habits and style?

In the traditional teaching process, students only need to listen carefully, accept what the teacher has taught, and then remember it. They are in a state of passive acceptance of knowledge, so that they lack the consciousness and motivation to think independently and the initiative to explore knowledge independently. The change of students' study habits also needs a process. Learning burdens, scores, and student evaluation mechanisms have a great impact on students' motivation. How to improve the learning style of students through the evaluation mechanism and how to change the previous examination method of single examination paper is an urgent problem to be solved. If we only change the teaching mode of teachers, we can't adapt to the new teaching mode without changing the learning mode of students. To achieve the ideal teaching effect, it is the key that students pursue the complete knowledge structure and personality development.

E. How to establish a scientific and reasonable evaluation mechanism under the new teaching mode?

It is the guarantee of the reform of teaching mode to establish a scientific and reasonable evaluation mechanism. Compared with the single evaluation criteria based on examination in traditional teacher-centered teaching, the evaluation of the student-centered teaching model becomes more complicated. Teachers must update their teaching concepts, and always take the exploration spirit, comprehensive ability, innovation consciousness and ability of students as the main purpose of classroom teaching, carry out creative teaching activities, and evaluate students' evaluation by

promoting and stimulating the development of students' innovative ability^[6]. At the same time, the evaluation mechanism of teachers also needs to be changed accordingly.

IV. ENHANCE TEACHER-STUDENT INTERACTION BY USING NETWORK RESOURCES

Teachers can use the most widely used chat tools, such as WeChat or QQ, to establish a communication platform by building a class group between teachers and students which breaks through the limitation of time and space in the past.

Before the start of the course, teachers can put the course requirements, teaching courseware, teaching content and homework on the Internet for students to download and use. In this way, they can't only have a clear goal of learning, but also be aware of it. It is also beneficial for students to preview in advance and review after class. Students can also focus their attention on the teacher's explanation in class instead of being busy making notes or taking photos and ignoring their own understanding of the teacher's explanation of knowledge points in class.

The network can promote students to consolidate knowledge after class. There are many sets of test questions on the network for many subjects, such as statistics. Students can use the test questions on the network to consolidate the knowledge they have learned in class. If students encounter problems, they can also communicate with the teachers through the Internet to get the answers.

V. CONCLUSION

In this paper, we mainly put forward some strategies to improve the classroom efficiency of college students, including the reform of classroom teaching mode and the communication and interaction between teachers and students through the network. The teaching mode includes inquiry teaching, discussion teaching, hybrid teaching. In order to realize the reform of teaching mode, we put forward some problems that need to be solved. Constantly improve our teaching mode to improve our classroom teaching efficiency is our constant pursuit.

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