Deepening Path Analysis of University Research Teaching Method Reform under the Digital Learning Environment

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Abstract: In the digital environment, school teaching models and teaching methods have encountered unprecedented challenges, and at the same time they have encountered new reform opportunities and new reform directions. The use of the network and mobile devices enables the teaching process to fully utilize information and collaboration, and the research learning approach can be adapted to this direction of reform. This paper explores the deepening of teaching reform in the digital environment, and proposes a reform path plan combining research teaching methods. According to the background of digitization and informatization, this paper puts forward the measures of deepening education reform, which is helpful to improve teaching quality and explore better teaching mode.

1.   Introduction

With the development of computer technology and networks, modern college teaching models and teaching methods have also encountered unprecedented challenges. Due to the rise of the Internet, a lot of novelties have impacted the senses[1]. The process of social digitalization has brought opportunities to college teaching while also bringing opportunities. The traditional paper-based teaching materials and the one-way teaching of teachers have lagged behind the times, and it is difficult to stimulate students' interest in learning. It is necessary to deepen the teaching reform in the digital environment. The research-oriented teaching mode is a new type of teaching method, which takes students as the main body of classroom teaching, and the teacher plays the role of guidance and auxiliary work[2]. This teaching model is gradually being carried out in various schools due to its novelty and efficiency[3]. Due to the popularity of the network and digital products, the teaching mode is not limited to the traditional oral and paper media. More convenient and innovative communication methods in a digital learning environment, enabling knowledge to be efficiently transmitted. This article first introduces the research teaching method, this paper analyzes the impact of modern network teaching in colleges and universities are faced with the problems and challenges, on the basis of the given research teaching reform in the digital learning environment, through the use of the Internet and mobile devices, from the teaching material, classroom interaction, after-school learning and use of the electronic equipment and so on ways of teaching reform are presented.

2.   Problems exist in the current teaching mode under digital learning environment

2.1.   The impact of digitalization on education

With the advent of digital age, the existing teaching environment is still based on traditional paper. In the classroom teaching of colleges and universities, the communication between teachers and students is still carried out in the way of books and after-school assignments. With the advent of the digital age, many new information media have emerged[4]. Social software such as Weibo WeChat QQ takes up a lot of time and energy from students, making it difficult for students to get rid of that digital social software. Less and less exposure to traditional paper books makes it

difficult for students to calm down in traditional teaching mode. And because paper text information is more boring than dynamic digital media, it is difficult for teachers to teach creatively from these traditional teaching modes.

2.2. Deficiencies in teaching facilities

The digital learning environment requires corresponding digital teaching tools. Due to the uneven development of some regions and the incompleteness of teaching settings, there are some obstacles in the digital learning environment. As the current digital teaching reform is still in the initial stage, there is a lack of complete guidance, which will lead to the problem of uneven layout. As a result, the teaching programs of teachers in different places cannot be unified, and it is difficult for students to get better learning experience. In addition, many college classrooms still lack adequate teaching facilities for digital learning. Moreover, some universities only pay attention to the advanced teaching equipment, but neglect the mutual cooperation among various equipment, which leads to problems in the communication between equipment and makes it difficult to carry out effective digital teaching.

2.3. Insufficient digital information control

The arrival of the digital age has produced a large number of novel interactive media, and media such as Weibo often contain a lot of information[5][6]. At present, there is insufficient supervision of relevant information and lack of effective control over the dissemination of information. Under the impact of instant messaging software, mobile search, and social software, students are easily addicted to it. Excessive addiction to the network can make students lose focus and interest in classroom teaching. Meanwhile, in the teaching process, excessive use and abuse of a large number of digital devices tend to make the teaching process fragmented, making students unable to absorb knowledge well.

2.4. teachers lack the initiative to carry out reforms

In the new era, the relationship between students and teachers has been reconstructed, so that teachers are no longer the master of the classroom. Teachers should become more organizers, guides, and facilitators of the teaching process. Students should become the main body of the teaching process and carry out the teaching reform with students as the center. In a digital learning environment, students are more likely to accept new environments and new devices than teachers. Students are more involved in the teaching reform, providing active exploration and thinking about the educational model in the digital environment, which puts higher demands on teachers. Teachers need to be separated from the traditional teaching thinking to avoid the habitual teacher-centered thinking.

3. Research teaching reform in digital learning environment

3.1. characteristics of digital learning environment reform

With the progress of The Times and the rapid development of information technology, daily life is gradually going digital, and people's life style is changing at the same time. The digital learning environment is an educational and learning environment that combines networking, information and intelligence. It uses network technology as the foundation to organically integrate various systems such as teaching services, information management, administrative management, research and development to form a complete teaching system.

Learning resources are more abundant in the digital learning environment. The digital learning environment provides students with a wealth of learning resources and intelligent learning tools, creating a diverse learning environment for students. When students conduct research learning, they are no longer limited to book resources, they can get the information from the Internet, which can broaden students' horizon. At the same time, the digital learning environment also brings more convenient communication tools for students, enabling them to exchange knowledge more conveniently.

3.2.   reform of new research learning teaching methods

Research-based learning centers on students, highlights the subject status of students, and emphasizes that students are active designers and participants in the learning process. The digital environment can provide a wider variety of online courses and digital courses, providing more choices for students' development. In the digital environment, students' individuality can be promoted and encouraged, which can also realize the communication without the limitation of time and space. Teachers and students build curriculum content together in the research learning process. Teachers set up research topics to allow students to gather information and solve problems in an exploratory way. In the digital learning environment, the form of research learning can be diverse, that is, it can be studied independently by individuals or through group collaboration. In the digital learning environment, students can collaborate through online research, and the form of learning is no longer limited to the classroom. Students can study online outside the classroom. Under the guidance of teachers, students can discover, explore and draw conclusions independently[7].

In the digital learning environment, research learning can be collaborative learning through computer network and mobile devices. As the Internet and mobile devices are open, asynchronous, interactive, large amount of information and other advantages, promote the implementation of research learning method. In the digital environment, through the in-depth reform of research teaching method, the learning modes of independent inquiry, cooperative learning and personalized learning can be realized. Under the theoretical basis of modern education, with the support of network technology and multimedia technology, students' innovative spirit, ability of independent inquiry and ability of using information technology for practice are cultivated, and the form of research-based learning method is used to further deepen the teaching reform.

4.   Establish new teaching reform evaluation system

In order to deepen the reform and implement better, the teaching evaluation system needs to be established more reasonably and effectively. In the traditional learning process, the evaluation of teaching results is mainly through the final test scores of students. A single written test is often full of occasional and uncertain, and usually does not fully reflect the learning outcomes. Research learning method in the digital environment requires more complete and reasonable teaching evaluation, which makes the deepening of education reform better.

Different from traditional teaching evaluation, the research subject in the digital learning environment includes teachers, students, parents, experts and so on. Due to the inclusiveness and interactivity of the digital learning environment, the number of people involved in the teaching process has also increased significantly, which has led to an increase in the number of subjects. This also led to the complexity of teaching evaluation. Therefore, evaluation needs to be 'comprehensive' and 'primary and secondary'. Comprehensiveness means that the subject of evaluation should be comprehensive and the content should be comprehensive. Primary and secondary means that the process of evaluation needs to be divided into primary and secondary, and different weights need to be given in different places, and cannot be generalized.

In order to carry out the reform in depth, the evaluation of teaching needs to be evaluated from two aspects: the main body of teaching and the content of teaching. Research-based learning method is centered on students, highlighting the student's subjective position, emphasizing that students are the designers and participants of the learning process. Similarly, in the evaluation, students should also become the subject of evaluation. Students should not only evaluate their own research studies, but also evaluate other students in the research team. The mutual evaluation between the students is conducive to understanding their strengths and weaknesses, as well as discovering the advantages of the people around them. In research-based learning method, the role of the teacher has changed, from the leader of the classroom to the instructor, collaborator, and organizer of research learning, so the evaluation of teachers also needs to change. Teachers' participation in the research learning process, mastery of the learning process, and innovative

teaching methods should become the main aspects of teacher evaluation. For the research learning process, evaluation can be carried out through the knowledge level, the competence level and the attitude level. The evaluation of the knowledge level includes scientific knowledge, methodological knowledge, and informational knowledge. In the evaluation of the competency level, the ability to discover problems, the ability to search for literature resources, the ability to design programs, the ability to apply information technology, and the ability to communicate and communicate. In the evaluation of attitude level, the degree of rigor and tacit understanding of research is investigated.

5.   Conclusion

In summary, in the digital learning environment, the deepening of teaching reform in colleges and universities has encountered new resistance, and at the same time there are new opportunities. Using research-based teaching methods and making full use of digital network tools and mobile devices, students can fully utilize their independent innovation capabilities, and teachers can optimize their teaching concepts, and improve the drawbacks of traditional teaching. In this paper, the deepening path analysis of the reform in the digital learning environment is not only conducive to improving the quality of teaching, but also avoiding the education crisis, so that research teaching can better adapt to the current teaching reform, and explore a better quality teaching program.

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