The Value Pursuit of Information Technology Subject in Middle School: Digital Learning and Innovation

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Abstract: With the advent of Internet technology and the digital age, the current middle school information technology discipline is facing new development opportunities, and it also has the value of discipline education brought by the new era. With the continuous advancement of the new curriculum reform, the information technology discipline of middle schools must closely follow the development trend of the times and the various needs of education, and pay attention to the digitalization and innovation of its discipline development. From the perspective of the information technology discipline in the middle school, we will start a basic exposition of digital learning and innovation, and then analyze the discipline itself, research and summarize the ways and means to promote the pursuit of value at multiple levels before, during and after class. Methods, in order to ensure that the information technology disciplines of middle schools can keep up with the development trend of the times and future trends, and can effectively improve the teaching level and actual efficiency.

1. Introduction

The development of the times and history has been greatly influenced by the technological revolution, and with the continuous development and progress of science and technology, people's coming to society is inseparable from the Internet. Therefore, the education field needs to grasp the development needs of the times in a timely manner, follow modern development concepts, teaching methods, and methods to reform in a timely manner to meet the needs of middle school information technology subjects in digital learning and innovation. At the same time, teachers who undertake teaching tasks must carry out teaching activities, practical project learning and other new teaching methods and teaching methods in accordance with the development trend of the times, students' cognitive situation, learning interests, and the educational goals of the course. Promote the innovation of teaching, strengthen the modernity of information technology subjects in middle schools, exercise students' information literacy, and cultivate talents with comprehensive development[1].

2. Overview of Related Theories

2.1 Digital Learning Concept

Digital learning refers to online learning or electronic learning based on digital technology, emphasizing the use of technical means to find specific methods of learning. In the digital learning environment, a highly integrated scene is mainly composed of learning resources such as video, text, and image data. It can be seen that the current digital learning is mainly a learning mode developed by using various resources on the Internet and the learning environment created by information technology. The digital environment continues to improve with the improvement of technology, which promotes the emergence of various types of learning concepts such as seamless and mobile. In addition, from the perspective of constructivism, digital learning is mainly a learning method that helps learners build an "internal" learning structure. Therefore, digital learning not only requires a

digital learning environment as a support, but also requires certain innovations.

2.2 Concepts Related to Innovation Literacy

Innovation refers to a series of complex inferences and reflections on the basis of the original thinking to propose concepts that are far from conventional thinking, and can use existing knowledge, concepts, materials, paths, and various methods for in-depth transformation. Innovation will not be restricted by professional knowledge or by the group in which one lives. The current innovation is the whole process of continuous stacking, interweaving and cooperation through group relations.

3. Core Literacy Direction of Information Technology Discipline in Middle School

In order to better cultivate the talents needed for socialism, our country has gradually established a core literacy system for the development of middle school students, in which three dimensions have been constructed. The first is independent development. Students are required to learn to learn independently and live a healthy life. Generally speaking, it is the comprehensive cognitive ability, control ability and various thinking displayed in the face of new environments, situations and challenging learning tasks; followed by social participation. It mainly includes social practice innovation and allows students to assume their due social responsibilities and obligations. Students are required to form the ability to solve, adapt and think about problems, including labor awareness, when participating in various social practical activities. , Technology application and problem solving; finally, the cultural foundation. This part includes scientific spirit and humanistic background[2].

Therefore, digital learning and innovation is mainly an important manifestation of enabling learners to learn to learn independently and carry out innovative practices. At the same time, personal innovation and digital capabilities are all related to their initiative, adaptability and innovation in future development. There is a direct relationship. Digital learning and innovation are also very important in the development of the core literacy system of middle school students, and demonstrate the core literacy of the educating value of the information technology discipline. The middle school information technology course is an important course for students to contact, master and understand the application of information technology. In the process of learning, students can continuously form a personalized and critical core quality.

4. Research on the Teaching Status of Information Technology Courses in Middle Schools

4.1 Hardware Facilities Are Relatively Lagging Behind

At present, the computer rooms in middle schools are mainly horizontal and in-line, and ring type is rarely arranged. When teaching information technology-related courses in middle schools, it is necessary to use group cooperation methods, but the traditional arrangement method cannot meet the needs of cooperation. Therefore, it is necessary to consider group teaching methods and methods in the process of reconstruction or new computer rooms, so as to provide greater convenience to the teaching method; in addition, the hardware facilities of some computer rooms are currently equipped with cameras. Or an electronic whiteboard, but not connected to the wireless network. However, there are many contents and links designed in information technology teaching, which will inevitably be applied to wireless networks. Therefore, it shows that the construction of computer room hardware facilities is in a lagging state.

4.2 Lack of Software Resources

The middle school computer room is equipped with software such as Photoshop, Office suite and Flash. But there is no software for audio processing, video, or web production. This also shows that the current information technology teaching is more about letting students master the problems

related to office and image processing, and does not pay attention to the cultivation of students' comprehensive ability. Information technology teaching is not to allow students to simply master and learn part of the software, but to use software learning to improve students' comprehensive application of information technology[3].

4.3 Teaching Methods Are Too Traditional

In the middle school information technology teaching, the basic application is the combination of explanation and practical operation, but the project learning method is rarely used. The biggest difference between project learning and task-driven teaching is that project learning pays more attention to the creation of scenarios and the ability to apply knowledge. It requires students to cultivate autonomous learning ability, exercise exploratory thinking, and sense of cooperation in the process of completing the project. Therefore, project learning must not be confused with task learning, which involves many different types of tasks. At present, teachers mainly use traditional teaching methods such as task-driven and lectures. Although students can exercise their familiarity with software and the degree of information acquisition, they cannot cultivate students' awareness and ability in cooperation, communication, and autonomous learning. . In addition, some teachers do not have a deep understanding of the connotation of digital learning and innovation, and cannot follow relevant principles to cultivate students' core qualities. This also shows that teachers also need to learn actively, in line with the development trend of the times, and improve the contemporary nature of information technology teaching.

5. Ways to Pursue Digital Learning and Innovative Value of Information Technology Subjects in Middle Schools

5.1 Pre-Class Stage

5.1.1 Project Learning Foundation

The realization of digital learning and the pursuit of innovative value in information technology disciplines needs to rely on project learning, and teachers should pay more attention to the relevant foundation of project learning. First of all, teachers should clarify the project theme of information technology teaching, require skills that meet the cognitive level and interest of students, and also take into account the requirements of digital learning and innovation, and select specific project themes based on this. It should be noted that the number of project topics is generally limited to about two to three, and it needs to be in line with students' interests and hobbies so that students can choose by themselves; in addition, teachers should also find and prepare materials around the project topics, including Theme background, introduction, preparation for instruction, lesson plan, project division, etc. For example, in addition to specific scenarios in the theme background and introduction, the students' project tasks need to be clarified; finally, the teacher should integrate and classify the learning materials of the project, and clearly mark the different types of materials so that Students use it efficiently and conveniently[4].

5.1.2 Collect a Variety of Resources to Support Digital Learning

The teaching of information technology is inseparable from a variety of digital resources as support. Compared with other disciplines, information technology is more practical and technical. In addition to mastering theoretical knowledge, students also need to apply theoretical knowledge to reality and become their own specific skills to solve practical problems. In the past, information technology teaching basically used teachers to demonstrate operation techniques and skills to allow students to imitate. However, by absorbing and collecting digital resources, students can be guided to use these resources for independent exploration and learning in a digital environment. Teachers should use teaching materials as a starting point, collect relevant teaching cases and videos, and provide high-quality digital resources to students. Among them, teaching videos can allow students

to more intuitively accept knowledge and skills, and teaching cases help students better understand project works The specific method of production promotes students to have a clearer understanding of the production of project works; and teachers can also independently develop teaching videos and case production according to the actual situation of students, which can be more in line with students' standards and curriculum development Demand, so that students' learning effects meet the teaching standards.

5.1.3 Guide Students to Learn Independently and Collaboratively Based on Cyberspace

Digitization and innovation require teachers to build an online learning space based on students' hobbies and hobbies in information technology and the content of the teaching materials, so that students can better communicate and display on this platform. At the same time, teachers should also guide students to collaborate and learn independently in cyberspace. Teachers can use existing social software platforms, such as WeChat, QQ, and Weibo, on which they can arrange related homework and share information, and teachers can also use these social software to communicate with students privately, so as to guide students. Strengthen; or teachers can also set up relevant WeChat official accounts to design and release various materials such as teaching videos, project works, and cases. Students can realize online learning by paying attention to the official accounts[5].

5.2 In-Class Stage

5.2.1 Pay Attention to the Explanation and Study of the Theory

The project learning method needs to use theory as a foreshadowing to develop well. Therefore, teachers need to introduce relevant knowledge and link the old and new knowledge. At the beginning of the class, the teacher explains to the students the related goals and content of the course, and emphasizes the key content. It is mainly based on direct teaching. After the presentation, the teacher will tell the relevant process according to the characteristics of the textbook and the project to ensure that students can recognize the important difference between the method of project learning and the traditional model.

5.2.2 Building a Study Group Based on the Project

The first is that teachers should carry out in-depth analysis according to the theme of the project, introduce and create the scene of the project, and clarify its requirements; the second is that teachers should show cases according to the theme and process. This link includes the clarification of creative ideas, operation steps, and emotional attitudes and values embodied, so that students can better understand the form of the work itself, and also mobilize students' interest in it; third, teachers should follow students' The selected theme is divided into different groups, and students are required to formulate corresponding plans according to the specific situation of the group discussion, and realize the division of labor. Students are required to cooperate in filling out the project planning and division of labor table.

5.2.3 Exploring from Specific Issues

Although students have learned relevant cases and theories, and have a preliminary understanding and cognition of the theoretical knowledge and skills to complete the project, they cannot fully grasp it due to insufficient practical experience. In response to the above situation, teachers should provide students with relevant cases and teaching videos in a timely manner to guide students to find solutions to problems from these cases and videos in time; in addition, students should save relevant materials in time during the process of completing the plan, according to the task Fill in the corresponding forms for the progress and completion. Finally, the teacher should also supervise the students' completion process, so that the students can communicate within the group and conduct in-depth discussions on specific issues. When there is an error, the teacher should give corrections.

5.2.4 Achievement Display and Evaluation

The presentation and evaluation of project results in information technology disciplines is extremely important. Teachers should organize a group to display the completed project works in a certain order, and communicate the ideas and methods of completing the project to everyone, so that other groups can also learn these creative highlights and ideas. After the presentation, the teacher presided over the development of group mutual evaluation, student mutual evaluation, etc., to let students understand their shortcomings in the completion of the project.

5.3 After Class

Teachers should actively use social platforms to guide students to review the content in the classroom, require students to report the learning effects to teachers in a timely manner, and teachers and students should discuss ways and means to solve problems together; when there are groups with unfinished project works, they should also be in class Then use digital resources to cooperate to complete it, and hand it over to teachers as required.

6. Conclusion

The continuous advancement of the current curriculum reform process requires middle school information technology to be combined with the development and requirements of the times, follow the development trend of education, and clarify the value needs of digital resources and innovative information technology disciplines. However, we should also pay attention to the fact that there are strong lags in hardware and software, and backward teaching concepts. Therefore, teachers can use project learning such new teaching models and methods to jointly strengthen students' value pursuit in the digital learning and innovation of information technology subjects in the three stages of pre-class, in-class and after-class.

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