Research on physical experiment teaching reform based on Internet Environment

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Abstract. Based on the Internet environment to carry out physical experiment teaching research, with the wide application of computer technology and the wide spread of Internet technology, normal schools in the training of physics teachers, need to carry out scientific reform of their experimental teaching, to ensure that the core literacy of students can be more effectively cultivated. This paper first analyzes the important value of experimental reform, and then on this basis, further explores the specific strategies of experimental reform.

1. Introduction
With the wide application of computer technology and the wide spread of Internet technology, the reform of physical experiment has high application value in the cultivation of physics teachers in Colleges and universities. It can effectively improve the psychological quality of students, enrich students' scientific knowledge, strengthen students' scientific research quality, and ensure that normal students have higher core literacy. In order to have a more clear understanding of the reform of physical experiment, we should pay more attention to the reform of physical experiment We hereby launch this study.

2. The important value of experimental reform

2.1. Improving students' psychological quality
Based on the traditional physics research, physics normal students innovate and reform the traditional experiments, which can effectively improve their professional quality. First of all, in the reform of physical experiments, we need to make scientific changes to the equipment and tools used in the experiment process, and at the same time, we also need to optimize the experimental scheme reasonably. On this basis, we can ensure that students have a more in-depth thinking. After the modification, students can get the correct conclusion based on the modified device, and then make them feel the joy of success, and have greater interest in education and physics learning. In general, the scientific improvement of physical experiments is boring to a certain extent. Every experiment has to go through many failures before it is successful. However, it must be very difficult for normal students to make a second breakthrough. Based on this, the design team needs to co create according to the specific experience, modify the design scheme for many times, summarize the failure experience and seek for the breakthrough Breach, in the long run, can achieve the effective formation
of a healthy learning attitude, and then enable them to face setbacks in their future career. The figure below shows the core literacy of students in the process of development.

| Three aspects          | Six qualities                      | Basic points                              |
|-----------------------|------------------------------------|-------------------------------------------|
| Cultural foundation   | Cultural heritage                  | Humanistic accumulation; humanistic feelings |
|                       | Scientific spirit                  | Rational thinking; critical questioning   |
| independent development| Learn to learn                     | Information consciousness; diligent in reflection |
|                       | Healthy life                       | Sound personality; self-management       |
| social participation  | Responsibility                     | National identity; international understanding |
|                       | Practice innovation                | Problem solving; technology application   |

2.2. *Enrich students' scientific knowledge*

Physical experiment is based on the knowledge of physical science. Therefore, in the reform of physical experiment, we need to improve the structure, principle and related equipment of physical experiment. In this process, the principle of physical science has an indispensable important value. In order to complete all kinds of work more effectively, normal students need to learn physics knowledge actively. Based on this, the physics laboratory needs to further study its physical knowledge in order to form a good knowledge system.

2.3. *Strengthening students' scientific research quality*

In the design and improvement of physical experiments, students' practical ability and thinking ability have higher requirements. Based on this, normal students need to constantly improve their scientific research quality to ensure that they have higher practical ability. Physics experimental students need to observe the experimental phenomenon, scientifically design the experimental improvement scheme, comprehensively compare the experimental effect, and deeply understand the innovation process [2]. Generally, the process of physical research has a large amount of work, and a large amount of data need to be collected. Therefore, physics experimental students need to carry out patient research to ensure the effective docking of relevant theories and specific experiments, so as to discover the Scientific Mysteries.

3. Implementation strategy of fine reform of College Physics Experiment

3.1. *The idea of reasonable infiltration experiment*

In the process of Internet plus and modern education, blended learning and blended teaching provide a new way of thinking for the effective implementation of educational reform. Educational institutions need to scientifically apply mobile terminals and network platform to construct APP for students in the university physics experiment. Normal students can preview effectively based on the multimedia demonstration and basic operation goals given by the educators. At the same time, they can also use the self-preview platform to provide students with more abundant learning resources, so as to ensure that students have a more comprehensive understanding of the design of physics experiment, the historical role of Junior high school and research background, and make clear the continuity between the experiment and other experiments. Physical experiments give certain vitality. For example, the main purpose of Michelson interferometer design is to explore the ether drift, effectively reveal the zero result of ether drift, and put forward the theory of relativity. Its design idea is to use interference fringes to move science to change the earth's relative velocity of the ether. In the university physics experiment, the white light interference fringes, equal thickness fringes and equal inclination interference are observed on this basis. Through scientific improvement of Michelson interference experiment, small displacement and length can also be effectively measured.

On this basis, reasonable penetration of the history of physics can inject soul into the experiment, ensure that normal students can correctly interpret the connotation of physical experiment, effectively
overcome their traditional fragmented cognition, and realize the effective formation of physical thinking [3].

3.2. Scientific reduction of real experiment
Generally, some physical experiments are different from the original design concept, experimental methods and experimental devices when presented to students. The main reason for this is the limitations of experimental conditions. For example, when exploring Ohm's law, due to the lack of ammeter at present, Ohm chooses to use current thermal effect to conduct electricity by thermal expansion and contraction. The measurement of current intensity can not get accurate results. Then ohm combines it with torsion balance method effectively. The deflection angle of magnetic needle is used to reflect the current size, and the current measurement problem is effectively solved by conversion method. At the same time, with the continuous development of modern science and technology and physical theory, the experimental methods and experimental devices have changed greatly. For example, in the experiment of measuring the speed of light, the transmission grating method, Michelson interference method and biprism method can be used to measure the speed of light in the current university physics experiments. In the early 19th century, physicists generally measured the speed of light by rotating prism method and rotating gear method. In this process, the rotating prism method has higher measurement accuracy. In the 19th century, the main purpose of measuring the speed of light by physical scientists was to compare the propagation speed of light in dense medium and light beam medium, and to analyze the wave theory and particle theory of light. Although the above two experiments are relatively poor in accuracy and advanced in the initial design compared with the present, they can make the scientific inquiry process more realistic. In order to ensure that normal students can further experience scientific inquiry, relevant units need to add reasonable experimental history module in app, so that normal students can further clarify that the best motivation for their related work is to solve problems in experimental design, so as to make them have a more real feeling of the process of scientific inquiry, and ensure that normal students have higher innovation ability and experimental design ability.

3.3. Strengthen the development of deep thinking
In the selection of experimental projects, it is necessary to highlight the demonstrative characteristics effectively, reasonably add experimental contents closely related to physics teaching, so as to ensure that normal students can directly contact with the common experiments in primary and secondary schools, so that they can quickly adapt to the teaching environment after entering the post. Based on the basic experimental basis, reasonably set experimental topics, conduct in-depth research on the original problems and physical applications in real life, organize students to solve the original problems in groups, refine models, set hypotheses, carry out scientific design and reasonable modification of the experimental scheme, and strengthen the experimental exploration, so as to ensure that the relevant problems can be solved more effectively. On this basis, it can make normal students further understand that the scientific application of physics knowledge can effectively solve practical problems, and reasonably eliminate the boredom in the process of traditional physics teaching. At the same time, it can also ensure that the experimental inquiry has stronger logic, and carry out scientific cultivation of normal students' deep thinking [4]. At the same time, in order to ensure normal students to get a higher degree of independent development, the relevant personnel scientific application of the current stage of physics research frontier issues, as experimental topics, effectively combined with academic competition and experimental content, to ensure that experimental topics have a more strong cultural flavor, a greater degree of openness and a higher level of thinking, so as to achieve normal students' discipline and scientific affairs. The effective expansion of the industry will improve its ability of self-development and self-learning.
3.4. Improve professional skills assessment
In addition, it can improve the students' ability of experiment writing and experiment effectively. In order to implement the multi-dimensional assessment more scientifically, colleges and universities need to effectively expand the functions of the preview platform, reasonably set up the "I come to supplement" module, build a resource library with students, guide students to further explore excellent resources, upload their own views online, and conduct more effective interaction with other students and teachers.

4. Conclusion
In a word, reasonable infiltration of experimental ideas, scientific restoration of real experiments, strengthening the development of deep thinking and improving professional skills assessment can ensure a more efficient reform of college physics experiments, ensure that normal students have a higher core literacy, and promote the further development of modern education and teaching activities in China, so as to meet the needs of modern social development on education Make the latest request.

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